

The Syntax of Question Particles

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Abstract

Cross-linguistically, languages are largely head-initial or head-final. Most permit some disharmony, but Holmberg (2000) and Biberauer, Holmberg & Roberts (2012), among others, have argued that the structure shown in (1) is ruled out, where YP is X's complement and ZP is Y's complement:

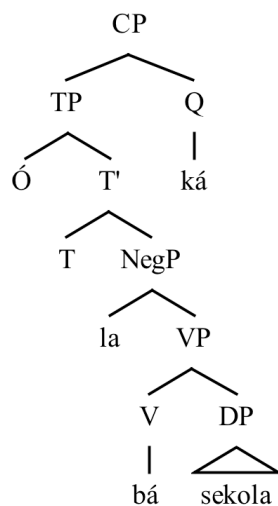
(1) * $[_{XP} [_{YP} Y ZP] X]$

In structures such as (1), a head-final phrase immediately dominates a head-initial phrase, violating the so-called 'Final-Over-Final Constraint' (FOFC).

Descriptively however, final question particles are readily found in languages with VO order, resulting in a structure that appears to violate FOFC. (2) illustrates this violation in Tetun (an Austronesian language of East/West Timor), and (3) shows the structure, with a final question particle *ká* immediately dominating a head-initial TP:

(2) Ó la bá sekola ká?
 2s not go school or
 (Said to child playing:) 'Didn't you go to school?' (Van Klinken 1999: 212)

(3)



If *ká* constitutes the C head of CP, as is standardly assumed, the structure in (3) violates FOFC.

I show, following Aldridge (2011), that these particles are best analysed as disjunctive elements, heading an elided clause:

(4) [ConjP CP [Conj CP]]

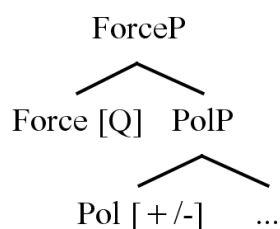
The particle is the head of the phrase, with the second CP as its complement and the first (pronounced) CP in Spec,ConjP. This solves the FOFC problem because the ‘particle’ is not final, and therefore the derivation does not include a head-final phrase dominating a head-initial phrase. Instead, the particle precedes its complement (which is not pronounced), and the clause that it follows (which is pronounced) is its specifier. I provide evidence for this position through typological investigation and theoretical analysis.

In addition, the various proposals that have been put forward in the literature to avoid this FOFC-violation are considered, but are shown to be problematic in different respects. I discuss the idea that particles are not heads (Biberauer, Holmberg & Roberts 2012). However, they cannot be specifiers and an adjunction analysis fails to explain their properties, so it is unclear what they could be if not heads. Julien (2001), Lee (2005, 2008) and Simpson & Wu (2002) argue that final particles are derived by TP-movement to a Topic or Focus position. This is a promising explanation, but fails to derive the difference between final particles and other types. If the particle is syncategorematic (Biberauer, Holmberg & Roberts 2012), the fact that they appear in fixed positions is mysterious. Processing explanations of the data (Hawkins 2004, Philip 2012) go some way towards deriving the FOFC facts but do not, among other things, explain the high number of final particles in VO languages.

The syntax of question particles is discussed in detail, and it is proposed that polar questions consist of two functional heads in combination: Force, giving a (main clause) question illocutionary force, and Polarity, giving a (neutral)

question open polarity. A true polar question particle is therefore related to one or both of these heads:

(5)



With this background, the argument is defended in subsequent chapters that some particles cannot be true question elements in this sense and are instead instantiations of the disjunction. Cross-linguistic data demonstrate that final particles in VO languages differ from other types of question particle (initial particles, or final particles in OV languages) in very rarely marking embedded questions: they do so in only one language in the corpus. Homophony between the question particle and disjunction in many languages, combined with attested grammaticalisation paths, adds support to this claim. Furthermore, this analysis explains a number of properties of such particles in addition to their propensity to violate FOFC, including their frequent absence from negative questions, alternative questions and *wh*-questions. All of these are straightforward consequences of the particle being a disjunction. Finally, the analysis is applied to a particular language, Thai, as a case study, and it is compared with languages of the other types. It is shown that the disjunctive analysis is best able to explain the data and offer an elegant explanation of the FOFC facts.

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List of Abbreviations¹

1-9	NOUN CLASS MARKER
1SG	1 ST PERSON SINGULAR
1PL	1 ST PERSON PLURAL
2SG	2 ND PERSON SINGULAR
2PL	2 ND PERSON PLURAL
3SG	3 RD PERSON SINGULAR
3PL	3 RD PERSON SINGULAR
A	ANIMATE
ABS	ABSOLUTE
ACC	ACCUSATIVE
ADV	ADVERB(IAL)
AGENT	AGENTIVE
AGR	AGREEMENT
AML	ANIMAL
ANAPH	ANAPHOR
ANT	ANTERIOR
APPL	APPLICATIVE
ASP	ASPECTUAL MARKER
ASR	ASSERTIVE
AUX	AUXILIARY
BEN	BENEFACTIVE
C	COMPLETIVE
CAUS	CAUSATIVE
CL	CLASSIFIER
COM	COMPLETIVE
COMP	COMPLEMENTISER
COND	CONDITIONAL
CONN	CONNECTIVE
CONT	CONTINUATIVE
COP	COPULA
DAT	DATIVE
DECL	DECLARATIVE
DEF	DEFINITE
DEM	DEMONSTRATIVE
DET	DETERMINER
DISJ	DISJUNCTION
DISTAL	DISTAL PRONOUN
DU	DUAL
EMPH	EMPHATIC
ERG	ERGATIVE
EV	EVALUATIVE

¹ With such a large number of glossed examples from so many sources, I have not attempted to make the abbreviations consistent with each other. The exception to this is the abbreviation Q for question particle, which I have used throughout.

² The World Atlas of Language Structures (WALS) is a searchable database containing data from descriptive material relating to 2676 languages (449 of which have at least 40 data points (i.e.

EXIST	EXISTENTIAL
EXP	EXPERIENTIAL
FACT	FACTIVE
FAM	FAMILIAR
FEM	FEMININE
FOC	FOCUS
FUT	FUTURE
FV	FINAL VOWEL
GEN	GENITIVE
H/HAB	HABITUAL
HON	HONORIFIC
HYP	HYPOTHETICAL MARKER
ICP	INTRANSITIVE COPY PRONOUN
IMP	IMPERATIVE
IMPF	IMPERFECTIVE
INC	INCLUSIVE
INCEPT	INCEPTIVE
INDEF	INDEFINITE
INDIC	INDICATIVE
INF	INFINITIVE
INT	INTERROGATIVE
IRR	IRREALIS
LNK	LINKER
LOC	LOCATIVE
M	MASCULINE
MOD	MODAL
NARR	NARRATIVE
NC	NEGATIVE CONCORD
NEG	NEGATIVE
NEUT	NEUTER
NOM	NOMINATIVE
NONPST	NON-PAST
OBJ	OBJECT
P3/4	PAST TENSE MARKER
PAC	PERSON-ASPECT COMPLEX
PERF/PFV	PERFECTIVE
POL	POLARITY
POSS	POSSESSIVE
POT	POTENTIAL
PP	PERSONAL PRONOUN
PREP	PREPOSITION
PRES	PRESENT
PRN	PRONOUN
PROCL	PROCLITIC
PROG	PROGRESSIVE
PROX	PROXIMAL
PRT	PARTICLE
PTCPL	PARTICIPLE
Q	QUESTION MARKER

QUOT	QUOTATIVE
RED	REDUPLICATIVE
REFL	REFLEXIVE
RES	RESPECT
RHET	RHETORICAL SUFFIX
SBR	SUBORDINATOR
SC	SUBJECT CONCORD
SFP	SENTENCE FINAL PARTICLE
SG	SINGULAR
SLP	SENTENCE LEVEL PARTICLE
SUBJUNC	SUBJUNCTIVE
TOP	TOPIC
VN	VERBAL NOUN
WH	WH ELEMENT
YNQ	YES/NO QUESTION MARKER

Chapter 1. Introduction

This thesis is concerned with polar question particles (Q) and their status in the syntax. In particular, it aims to answer the following questions: 1) What is the function of polar question particles in typing utterances as questions? 2) Where are polar question particles first merged in the derivation? The hypothesis is explored that final polar question particles in languages with verb-object order are different from other polar question particles. Specifically, these particles are hypothesised not to be true question particles, which ‘type’ an utterance as a question. This asymmetry falls under a constraint known as the Final-Over-Final Constraint (i.a. Biberauer, Holmberg & Roberts 2007; Biberauer, Holmberg & Roberts 2008; Biberauer, Newton & Sheehan 2008; Biberauer, Newton & Sheehan 2009a, b; Biberauer and Sheehan 2012), which rules out structures in which a head-final phrase immediately dominates a head-initial phrase, and thus should disallow VO...Q orders by transitivity.

Polar questions are those that can be answered with ‘yes’ or ‘no’, although of course they may not be: consider such replies to questions as those in (1), where Huddleston (1994) classifies A as an answer to the question asked, and B as a response, though not an answer:

- (1) Has he read it?
A: Yes, he’s read it.
B: Probably/I don’t know.

(Huddleston 1994: 413)

In specific terms, then, polar questions are those that have a variable with exactly two options: the proposition is true, or the proposition is false. They do not include a *wh*-word, which questions some part of the content of the proposition and includes a variable with more possibilities than the two just given for polar questions (or simply different possibilities, as the context may restrict the possible answers to a *wh*-question to just two, but they are not ‘yes’ and ‘no’).

Polar questions are marked in a variety of different ways cross-linguistically: interrogative intonation, a question particle, interrogative verbal morphology, interrogative word order or, rarely, some strategy such as the absence of declarative morphology (just one language has this characteristic, according to Dryer 2005e). Many languages also have the option of appending a declarative sentence with a tag question, like English *isn't it* or Russian *ne pravda* 'not true'. Tags frequently (and perhaps universally) signal a biased question, as in (2):

- (2) You're thinking of pushing that red button, aren't you?
(The expectation is that you are thinking of pushing it.)

Intonation is extremely common either as a sole question-marker or in combination with another type. Dryer (2011b), in Chapter 116 of the World Atlas of Language Structures Online, states that 'many if not most languages of the first five types [of question-marking device] also employ a distinct intonation', and he lists 173 languages as using intonation as the sole means to mark a question.^{2 3} Following intonation, the most common way of marking questions is with a particle: 208 genera (520, 81) out of 289 (842, 122) are listed in the World Atlas of Language Structures (Dryer 2005e) as using this construction.⁴ The use of a question particle is exemplified in (3):

- (3) *Polish (Indo-European, Poland):*
Czy Marta lubi koty?
Q Martha like.3SG cat.ACC.PL
'Does Martha like cats?' (Magdalena Sztencel, p.c.)

² The World Atlas of Language Structures (WALS) is a searchable database containing data from descriptive material relating to 2676 languages (449 of which have at least 40 data points (i.e. appear on at least 40 maps), and 180 of which appear on over 80 maps). Each chapter deals with a particular feature (e.g. 'Order of object and verb'), and authors are asked to include languages from a diverse set of 100 if possible, to give a good genealogical and geographical spread. The (2005) CD-ROM version allows for comparison of genera, but the (2011) online version typically has more data for any given variable, as it is continuously updated.

³ Number of genera is not given on WALS Online, but Dryer (2005e), in the CD-ROM version, gives the number of genera as 67 and the number of languages as 138.

⁴ Numbers of genera are compared throughout in order to reduce bias from genetic and areal factors. The bracketed numbers following number of genera refer to (languages, families).

In this thesis, question particles are the focus, although interrogative intonation must inevitably be discussed as it very often co-occurs with the particle. Through a broad cross-linguistic investigation (Chapter 2), an investigation of a small number of unrelated languages (Chapter 5), and an in-depth case study of one language, Thai (Chapter 7), in combination with theoretical analysis, the thesis contributes to the understanding of these relatively little understood elements of language. It situates question particles in the broader description of question syntax, and explains how VO...Q orders which seemingly violate the Final-Over-Final Constraint do not actually do so.

Throughout, the term 'question particle' or 'Q-particle' should be understood, unless otherwise stated, as referring specifically to polar question particles rather than a particle used in *wh*-questions or as a marker of all types of question. In this introductory chapter I give the basic theoretical background, outlining some key concepts that are essential to the argument presented in this work.

1.1. Background

In this section the theoretical framework adopted by the thesis is outlined: Minimalist syntax, the Split CP and the Linear Correspondence Axiom. Following this, I introduce the Final-Over-Final Constraint, the empirically-motivated generalisation that is the central focus of this thesis. This constraint is covered in greater detail in Chapter 3.

1.1.1. Minimalism

Under the Principles and Parameters approach, there is a Universal Grammar and particular languages are instantiations of the human Faculty of Language. Particular languages differ from each other very little, the vast diversity being brought about through the setting of parameters in one direction or another. These parameters in combination produce apparently very different languages,

but the same set of processes is available for all languages. We therefore seek to discover commonalities, and begin with the working hypothesis that the syntactic derivation of a construction such as a question formed with a particle is the same for all languages which have such a construction and, ideally, for polar questions formed in different ways in all languages.

The Minimalist Program of linguistics is a programme for language investigation in which all unnecessary processes and principles are stripped out, and the grammar is held to be as simple as is practically possible while still accounting for the facts. The goal of linguistics, on this view, is 'to discover to what extent minimal conditions of adequacy suffice to determine the nature of the right theory' (Chomsky 2000: 92) and, more specifically,

to examine every device (principle, idea etc.) that is employed in characterizing languages to determine to what extent it can be eliminated in favor of a principled account in terms of general conditions of computational efficiency and the interface condition.

(Chomsky 2004: 106)

The interface condition is what determines whether an utterance is grammatical or, more precisely, interpretable by external systems. Where it was held under Government and Binding theory that the grammar generates an infinite number of logically possible sentences and then selects those that are grammatical, the Minimalist focus shifted. The narrow syntax interacts with two systems, the articulatory-perceptual (or sensorimotor) system and the conceptual-intentional system, and any feature in a derivation must be interpretable at the interface with one of the two systems when it is sent to Spell-Out. If not, the derivation 'crashes'.

Chomsky (2004; 2005) identifies three factors in language acquisition:

- (4) a. The genetic endowment, or Universal Grammar (which interprets some part of the child's experience as linguistic data)

- b. An individual's experience (which leads to variation within a narrow range)
- c. Factors that are language- or even organism-independent

Universal Grammar, called S_0 by Chomsky (2004), might be expected to contain the following three general types of component (Chomsky 2004: 106):

- (5) a. Unexplained elements of S_0
- b. IC (the interface condition, 'the principled part of S_0 ', imposed on the language faculty by the systems it interacts with)
- c. General properties of computational efficiency

The ideal, for Chomsky, would be for (5a) to be empty, although he recognises that this is almost certainly too strict a hypothesis. Nevertheless, it should be as simple as possible, and contain only the bare minimum of what is required solely for linguistic reasons. Some linguistic knowledge is gained through experience, and anything else is a 'third factor' condition: required for non-language-specific reasons. These 'third factors' are, for example, principles of data analysis, and more importantly principles of structural architecture and developmental constraints, such as efficient computation (Chomsky 2005). The Minimalist Program, therefore, retains only what is necessary and principled for language.

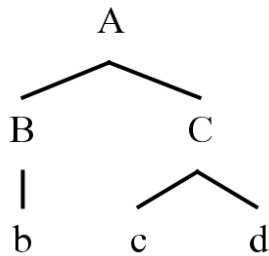
In the narrow syntax, Chomsky argues that the operation Merge 'comes free' – it is required by any recursive system. Merge combines two items from the lexical array to form a new item consisting of those two elements.⁵ This new object {A, B} forms a projection of either A or B and is identified by its label, A or B. Anything other than Merge, he claims, is not conceptually necessary and must be empirically motivated. The operation Move is taken to be an instance of internal Merge: that is, re-Merge of an item that has already been Merged in the derivation.

Fundamental to syntactic operations is c-command, a relation between elements in a hierarchical representation. An element X c-commands another element Y if

⁵ Chomsky differentiates between the terms 'lexical array' and 'numeration', using 'numeration' where items of the lexicon are accessed more than once. I refer to the lexical array without this distinction, as it is not relevant to this work.

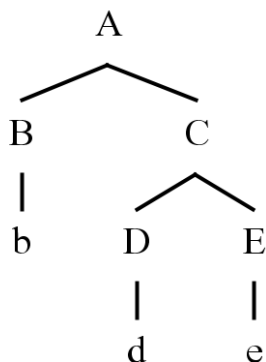
the first node that dominates X also dominates Y, X does not dominate Y, and X and Y are distinct.⁶ Thus in (6), B and C symmetrically c-command each other (and each also c-commands anything the other dominates), as the first node that dominates B also dominates C and vice versa, and B and C are distinct.

(6)



In (7), B and C c-command each other as before, and B also c-commands D and E (because the first node that dominates B is A, which also dominates C and therefore D and E by transitivity). D and E do not c-command B, however, because the first node that dominates D or E is C, which does not dominate B. The relation between B and D and between B and E is one of asymmetric c-command.

(7)



The narrow syntax maps the lexical array to the derivation, and this interacts with the phonological and semantic components when the derivation is interpreted at the articulatory-perceptual and conceptual-intentional systems (Spelt-Out, in the case of the phonology). No new material can enter the

⁶ The definition of c-command is modified by many authors in order to accommodate some part of an explanation. Where necessary this is signalled in the discussion at the relevant point.

derivation once the lexical array is selected; items may only be rearranged (the Inclusiveness condition).

The transfer to the semantic and phonological components occurs cyclically, in phases. The categories that are considered to be phases by Chomsky (2004) are a CP with tense and force information and a vP with all theta-roles assigned: those phrases that are 'the closest syntactic counterpart to a proposition' (Chomsky 2000: 106). Once a phase has been transferred, it is 'frozen' and elements within it cannot engage in further syntactic operations. The phase impenetrability condition (PIC) (Chomsky 2000: 108), given in (8), allows only the head and the specifier of a phase (its edge) to be accessible to the syntax:

- (8) *Phase-Impenetrability Condition*
In phase α with head H, the domain of H is not accessible to operations outside α , only H and its edge are accessible to such operations.

1.1.2. The Split CP

Rizzi (1997), following work by previous authors which led to the postulation of multiple layers in the VP (Kayne 1984, Larson 1988) and TP (Pollock 1989), splits the CP into several distinct functional projections, each associated with a specific function.

He argues that the C system relates the proposition (the TP) and the higher structure, either a superordinate clause or the discourse. The relation to the higher structure is specified by the Force head, which encodes sentence type. The relation to the TP is expressed by Finiteness, a head related to Tense but less highly specified than Tense. The CP specified for a certain Finiteness value selects a similar TP. The Force and Finite heads interact with the systems immediately above and below: Force is the highest head in the CP system and Finiteness is the lowest. These two heads are the 'essential part of the C system... present in all non-truncated clausal structures' (Rizzi 1997: 287-8).

Other functions traditionally thought to be in C are located within the CP system on Rizzi's fine-grained account. Topic and Focus are two such functions, as exemplified by (9) and (10) respectively, following Rizzi's notational convention of writing focussed constituents in upper case:

(9) Your book, you should give *t* to Paul.

(10) YOUR BOOK, you should give *t* to Paul (not mine).

(Based on Rizzi 1997: 285)

Rizzi argues that the Topic and Focus heads must be located between Force and Finiteness as the latter two heads 'terminate' the CP upwards and downwards. Further support for this claim comes from the behaviour of the Italian finite and non-finite complementisers *che* and *di*. *Che* always precedes left-dislocated phrases and *di* follows, consistent with the suggestion that *che* represents Force, the highest C head, and *di* is Finiteness, the lowest head. Topic occupies a position between the two:

(11) Credo che il tuo libro, loro lo apprezzerebbero
 believe.1SG that the your book they it appreciate.3SG
 molto
 much
 'I believe that your book, they would appreciate it a lot.'

(12) *Credo, il tuo libro, che loro lo apprezzerebbero
 believe.1SG the your book that they it appreciate.3SG
 molto
 much
 'I believe, your book, that they would appreciate it a lot.'

(13) *Credo di il tuo libro, apprezzarlo molto
 believe.1SG of the your book to.appreciate-it much
 'I believe [of] your book to appreciate it a lot'

(14) Credo, il tuo libro, di apprezzarlo molto
 believe.1SG the your book of to.appreciate-it much
 'I believe, your book, [of] to appreciate it a lot'

(Rizzi 1997: 288, my glosses)

Rizzi further notes that Topic heads can be recursive, whereas the Focus head must be unique due to its interpretive effects, and that multiple Topics can appear either side of Focus. Rizzi (2001) adds a further projection ‘Interrogative’ to the left periphery, based on the position of the Italian interrogative complementiser *se*. Like *che*, it must precede a focussed phrase, but where *che* must also precede topics, *se* may be preceded or followed by a topicalised phrase:

(15) Mi domando se QUESTO gli volessero dire
 me ask.1SG if this him want.3PL say
 ‘I wonder if THIS they wanted to say to him’

(16) *Mi domando QUESTO se gli volessero dire
 me ask. 1SG this if him want.3PL say
 ‘I wonder THIS if they wanted to say to him’

(17) Non so se, a Gianni, avrebbero potuto dirgli
 not know.1SG if to Gianni have.3PL could say.him
 la verità
 the truth
 ‘I don’t know if, to Gianni, they could have said the truth’

(18) Non so, a Gianni, se avrebbero potuto dirgli
 not know.1SG to Gianni if have.3PL could say.him
 la verità
 the truth
 ‘I don’t know, to Gianni, if they could have said the truth’
 (Rizzi 2001: 288-9, my glosses)

This leads Rizzi to place *se* in a position which is lower than Force, higher than Focus, and may optionally be preceded by a Topic.

Haegeman (2004) argues that not all clauses have the same rigid structure: some may be reduced. She shows that certain adverbial clauses, which she labels ‘central adverbial’ clauses, resist argument topicalisation, while others (‘peripheral adverbials’) allow it, as in (19)-(20) (Haegeman 2004: 3):

(19) *If these exams you don’t pass you won’t get the degree.

(20) If next week you cannot get hold of me, try again later.

Noting that peripheral adverbials can contain epistemic modality expressions while central adverbials cannot, she claims that this fact is explained if central adverbial clauses lack illocutionary force and cannot be anchored to the speaker in the way that peripheral adverbials can (Haegeman 2004: 6). She argues that root clauses have the heads in (21), peripheral adverbials those in (22) (where Sub is the location of subordinators), and central adverbials have only the heads Sub and Fin (for Finiteness), as in (23) (Haegeman 2004: 12):

(21) Root clause: Force > Top > Focus > Fin

(22) Peripheral adverbial clause: Sub > Force > Top > Focus > Fin

(23) Central adverbial clause: Sub > Fin

The issue arises of whether embedded questions have a reduced CP, like central adverbial clauses, or the full specification found in peripheral adverbials. Embedded questions do not have the illocutionary force of a question in that they do not require an answer. In English, at least, embedded questions have a subordinator *if* which must be located in Sub on Haegeman's analysis. Other particles may be main clause phenomena, if the head they instantiate is missing from embedded questions (e.g. Int, for Rizzi).

The relative ordering of heads in the CP system for main clauses, then, is something like that in (24), with embedded clauses having a reduced version of this structure:

(24) FORCE > (TOP*) > INT > (TOP*) > (FOC) > (TOP*) > FIN > TP

Subsequent authors have proposed modifications to this structure, some of which are discussed in Chapter 4. In Chapter 5, I develop an alternative to this model, removing the need for an Int head.

1.1.3. *The Linear Correspondence Axiom*

Kayne (1994), based on observable cross-linguistic asymmetries such as the lack of rightward specifiers, and the lack of a 'reverse German' with a 'verb-penultimate' rule, rejects the previous model of language in which a head (H) and complement (C) could be ordered freely with respect to each other. He argues that it is not the case that languages can be H-C or C-H, or a mixture of the two for different categories, as per the Head Parameter. Instead, he proposes in his influential monograph (*The Antisymmetry of Syntax*) that the true picture is far stricter, and that heads always precede complements in the underlying structure with adjunction (including specifiers) always being to the left. He argues that word order is directly linked to asymmetric c-command relations, expressed as the relation between non-terminal and terminal nodes. This has the conceptual advantage that the basic structure of language is as simple as it can be: there is only one structure, with no variation at all between languages with respect to the ordering of heads and complements. However, it has drastic consequences for the analysis of very many constructions which previously relied on right adjunction or the head parameter, and which must now be taken to involve raising of an element. In Japanese, for instance, which was assumed to have complement positions to the left of heads, direct objects must be assumed to move to a specifier position c-commanding the verb. The term 'head-final', although no longer accurate in a literal sense, is retained to refer to constructions of this sort, in which a complement raises above a head to give the linear order C-H.

Kayne (1994: 6) formulates this as the Linear Correspondence Axiom (LCA), given in (25), where d stands for a non-terminal-to-terminal dominance relation, A stands for a maximal set of all pairs of non-terminals such that the first asymmetrically c-commands the second (so $d(A)$ is the 'image' of a set of ordered pairs under d , or the relation between the non-terminals and the terminals they dominate), and T stands for a set of terminals:

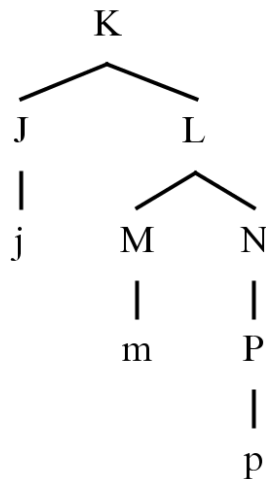
- (25) *Linear Correspondence Axiom*
 $d(A)$ is a linear ordering of T .

Put another way, the dominance relations between pairs of non-terminal elements correspond to the linear order of the set of terminals dominated by those non-terminal elements. If the above is correct, and assuming that it is a precedence relation rather than a subsequence relation, as Kayne argues, the following statement is true:

- (26) Let X, Y be nonterminals and x, y terminals such that X dominates x and Y dominates y . Then if X asymmetrically c-commands Y , x precedes y .
 (Kayne 1994: 33)

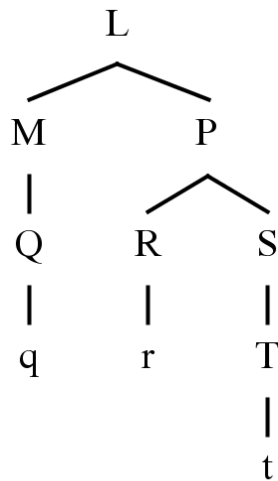
Thus the phrase marker in (27) (Kayne 1994: 7) has the non-terminals K, J, L, M, N and P , and the terminals j, m and p . The dominance relations between the non-terminals determine the ordering relations of the terminals. The complete set of non-terminal pairs where the first node asymmetrically c-commands the second are $\langle J, M \rangle, \langle J, N \rangle, \langle J, P \rangle, \langle M, P \rangle$, and so this is the set that constitutes A in (25). These nodes each dominate just one terminal element, and so $d(A)$ (the non-terminal-to-terminal dominance relation) is $\langle j, m \rangle, \langle j, p \rangle, \langle m, p \rangle$. This gives an order between the three terminal elements of the set $\{j, m, p\}$ of $j > m > p$. This constitutes a total ordering of this set and so the phrase marker is well-formed (Kayne 1994):

(27)

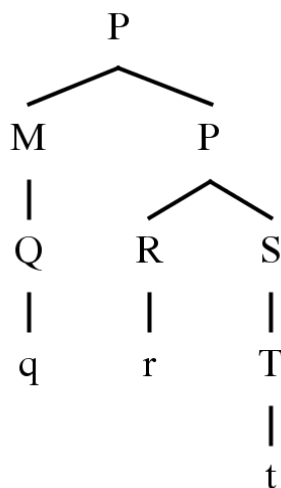


Kayne retains the distinction between segments and categories of May (1985), where if M and P in (28) (Kayne's (2)) are both maximal projections dominated by another node L, they are categories and c-command relations hold normally between them. If, however, M is adjoined to P (= is a specifier of P), as shown in (29), its dominating node is no longer a distinct category L but a segment of the same category P:

(28)



(29)



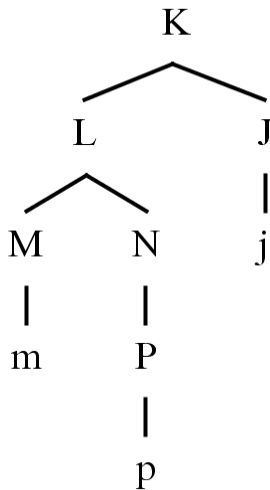
Kayne (1994: 16) proposes that segments cannot c-command (or be c-commanded), as in (30) (original emphasis):

(30) X c-commands Y iff X and Y are categories and X excludes Y and every category that dominates X dominates Y .

(Exclusion means that no segment of X may dominate any segment of Y .) As specifiers are taken by Kayne (1994) to be adjoined, (30) has the consequence that specifiers cannot be asymmetrically c-commanded: in (29), P does not c-command Q , as the lower P is a segment rather than a category.

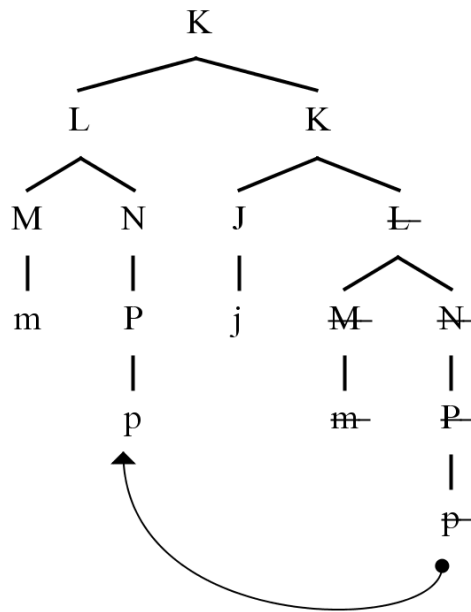
The LCA has the implication that ‘head-final’ phrases must be derived by roll-up movement (that is, movement of the complement of a head X to the specifier position of XP). Consider the structure in (31), which differs from (27) only in that J is ‘final’ rather than ‘initial’:

(31)



A in (31) consists of $\langle J, M \rangle$, $\langle J, N \rangle$, $\langle J, P \rangle$, $\langle M, P \rangle$, or exactly the same pairs as for (27). Therefore $d(A)$ is again $\langle j, m \rangle$, $\langle j, p \rangle$, $\langle m, p \rangle$, and the order of the terminals is $j > m > p$. j cannot be linearised in final position whether the structure is as in (27) or (31). Rather, head-final phrases must have the structure in (32), where J 's complement L moves to a higher position. A in (32) consists of $\langle L, J \rangle$, $\langle M, P \rangle$. $d(A)$ is then $\langle m, p \rangle$, $\langle m, j \rangle$, $\langle p, j \rangle$ and the order of the terminals $\{m, p, j\}$ is $m > p > j$.

(32)



1.1.4. The Final-Over-Final Constraint

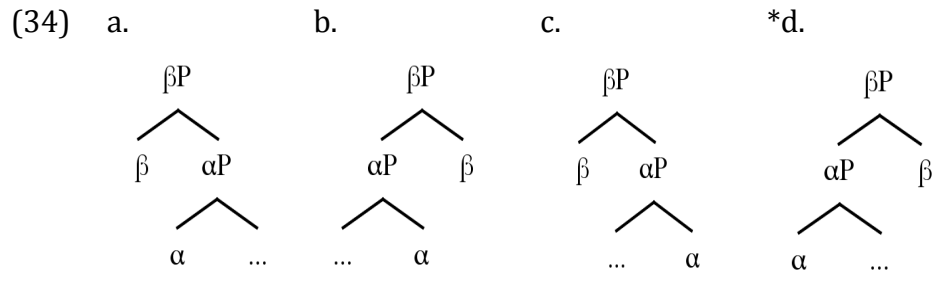
Here I give a brief outline of a constraint on word order, with greater detail given in Chapter 3, where I also discuss how the constraint relates to question particles.

Holmberg (2000) identifies a word order generalisation based on an observation regarding Finnish, which has SVO order in unmarked declaratives but may have SOV order in focus constructions. He notes that an auxiliary may precede or follow its VP complement, but if that selected V has a complement O, VP can only precede the auxiliary if O also precedes V. The order V-O-Aux is not permitted. Holmberg also notes that this pattern is more general, with languages that are head-initial in VP being head-initial throughout the whole clause, whereas languages with head-final VP may have mixed word orders (H-C or C-H).

Holmberg (2000) expresses this as the generalisation in (33):

- (33) If a phrase α is head-initial, then the phrase β immediately dominating α is head-initial. If α is head-final, β can be head-final or head-initial.
(Holmberg 2000: 124)

In later work, this generalisation is referred to as the Final-Over-Final Constraint (FOFC) (i.a. Biberauer, Holmberg & Roberts 2007; Biberauer, Holmberg & Roberts 2008; Biberauer, Holmberg & Roberts 2012; Biberauer, Newton & Sheehan 2008; Biberauer and Sheehan 2012; Sheehan 2009). It says that the structures in (34a-c) are allowed, but that the structure in (34d) is not, because a head-final phrase immediately dominates a head-initial phrase.



Biberauer et al. give data to support the FOFC generalisation, including that in (35) (Biberauer, Holmberg & Roberts 2008, data from Haddican 2004). Basque has V(erb)-Aux(iliary) order in affirmative clauses (35a) and Aux-V in negative clauses (35b). The usual order is O(bject)-V, but as (35c) shows, V-O is allowed in negatives, giving Aux-V-O. However, V-O is not allowed in affirmatives (35d); note that this is the order ruled out by FOFC.

- (35) a. Jon-ek Miren-i egia esan dio [O-V-Aux]
 Jon-ERG Miren-DAT truth say-PERF AUX
 'Jon has told Miren the truth.'
- b. Jon-ek ez dio Miren-i egia esan [Aux-O-V]
 Jon-ERG not AUX Miren-DAT truth say-PERF
 'Jon has not told Miren the truth.'
- c. Jon-ek ez dio esan Miren-i egia [Aux-V-O]
 Jon-ERG not AUX say-PERF Miren-DAT truth
 'Jon has not told Miren the truth.'
- d. *Jon-ek esan Miren-i egia dio [V-O-Aux]
 Jon-ERG say-PERF Miren-DAT truth AUX
 'John has told Miren the truth.'

FOFC has implications for question particles, as it seems to entail that final question particles should not occur with V-O word order, when in fact they do, as (36) from Lao (Tai-Kadai, Laos/Thailand) shows:

- (36) saam3 khon2 taaj3 bòò3
three person die Q
'Is it the case that three people died?' (Enfield 2007: 41)

FOFC has been shown to hold very generally and is postulated to be a universal. However, with regard to items usually referred to as 'particles', including question particles, negative particles, tense/aspect/mood particles, adpositions, topic/focus particles and discourse particles (Bailey, Biberauer, Holmberg & Sheehan 2010), it does not appear to be correct. The investigation of FOFC as it relates to question particles forms a major part of this thesis.

1.2. Outline of the thesis

The structure of the rest of the thesis is as follows: Chapter 2 presents data illustrating that it is common for languages to have VO order and final question particles, as has been well known since at least Greenberg (1966[1963]). However, a generalisation which has not previously been noted is that such question particles tend not to be allowed in embedded clauses in VO languages. In Chapter 3 it is shown that if this VO...Q word order is mapped onto syntactic structure, a FOFC-violation occurs, on the assumption that Q is a C element. Chapters 4 and 5 explore this assumption further, with Chapter 4 presenting existing analyses of the position of Q, which commonly place it in C. Chapter 5 discusses what 'in C' means. A more specific analysis is presented which argues that questions are composed of two functional heads in the split CP. Chapter 6 offers a proposal for the final question particles in VO languages which avoids the FOFC problem, arguing that they are actually instances of the disjunction. Chapter 7 presents an illustration of how this works in a specific language, Thai, with the suggestion that other VO languages with final particles should be given a similar analysis.

Chapter 2. A Word Order Generalisation

2.1. Word order generalisations

There are many observable cross-linguistic word order asymmetries. Kayne (2009) provides a list of over 20, including the following (some very well-known examples and some more subtle):⁷

- (37)
- a. Specifiers are always on the left, not on the right.
 - b. *Wh*-words/phrases always move leftwards, not rightwards.
 - c. There are many V2 languages, but no V-penultimate languages (and likewise no clitic-penultimate languages).
 - d. Prenominal relatives generally lack relative pronouns.
 - e. AuxV allows intervening adverbs; VAux typically does not.
 - f. V-initial languages have final subject pronouns in some cases (e.g. Irish and Jacaltec), but no V-final language has initial subject pronouns.

These are word order universals like those discussed by Greenberg (1966). However, Greenberg was cautious about many of his universals, and was careful to state that they were not generally universals of the sort 'all languages have vowels'. Rather, 'universal' is used in an 'extended sense' (Greenberg, Osgood & Jenkins 1966: xviii) and includes statistical universals and statistical correlations, among other types of universal such as implications. A statistical correlation is defined as follows:

Universally, if a language has a particular characteristic (φ) it has a significantly greater probability of possessing some other characteristic (ψ) than if it does not possess (φ).

(Greenberg, Osgood & Jenkins 1966: xx-xxi)

Any particular language may not have (ψ) despite having (φ), but it is universally true for all languages that the probability that it does is greater. Greenberg (1966) gives statistics for each of his universals, and formulates them

⁷ Kayne (2009) is in press as Kayne (forthcoming) in an expanded form.

with some expression of probability such as ‘with well more than chance frequency’ or ‘with overwhelmingly greater than chance frequency’. While some of the asymmetries given in (37) are of this type, most are stated to be true of all languages.

In addition to the asymmetries in (37), it is a striking fact that while complementisers can readily be initial or final, and languages can have VO or OV order, there are no languages with VO word order and final elements that can truly be called complementisers (clause subordinators). Hawkins (1990: 225) notes that ‘in VO languages only initial complementizers are found [...] in OV languages one finds either initial [...] or final complementizers’. Dryer (1992) does not give data or devote much discussion to this point, but states that ‘there seems to be little question that [the order of complementiser and S] is a correlation pair’ (i.e. the complementiser patterns with the verb and the sentence with the object), and that ‘complementizers in VO languages seem invariably to be initial; indeed, it may be an exceptionless universal that final complementizers are found only in OV languages’ (Dryer 1992: 101, 102). Dryer (2008) rectifies this matter and shows that, in his sample, initial and final complementisers are equally represented (14 genera each) in OV languages. Conversely, in the 63 genera with VO order the difference is absolute: every VO language has an initial complementiser and none has a final complementiser. Kayne (2000: 320) notes that while some of Greenberg’s generalisations have been shown not to be correct, many have, and cites Dryer’s (1992: 102) claim that this word order generalisation is ‘exceptionless’; namely, if a language is complementiser-final, it is also OV.

Question particles are usually analysed as either C⁰ (or occasionally Spec,CP) or as a head in the CP domain/left periphery (i.a. Rizzi 2001, Law 2002, Li 2006, Sybesma & Li 2007, Damonte & Garzonio 2008, Kuong 2008, Ginsburg 2009, Wakefield 2010). They should therefore be expected to pattern as complementisers and fail to appear finally with VO word order. Furthermore, Greenberg’s (1966) sample of 30 languages broadly follows this pattern: he has

12 languages with either initial or final question particles in his sample, and finds the distribution as in Table 1:

Table 1. Question particles and word order (based on Greenberg 1966: 81).

	VSO	SVO	SOV
Initial particle	5	0	0
Final particle	0	2	5

From this he gives Universal 9:

- (38) With well more than chance frequency, when question particles or affixes are specified in position by reference to the sentence as a whole, if initial, such elements are found in prepositional languages, and, if final, in postpositional.⁸ (Greenberg 1966: 81)

Although the two SVO examples that he lists (Thai and Yoruba) have final particles, taken together with the VSO languages it can be seen that VO languages are more likely to have initial particles. OV languages are more likely to have final particles. In fact, based on this data, they are certain to, although Greenberg does note that Lithuanian is postpositional (but SVO) and has an initial particle.

However, further investigation has shown that it is not the case that final question particles are rare in VO languages. According to the World Atlas of Language Structures (WALS) (Dryer & Haspelmath 2005), not only is there no absence of final question particles in VO languages, but this is the second most numerous type of language by genus.⁹ Of a 177-genus sample of languages with the relevant features, 51 (29%) have final question particles and VO order. Slightly more, 66 genera (37%), have final particles and OV order, meaning that final particles account for two-thirds of the genera in the sample. Of those with initial question particles, 39 genera (22%) have VO order and 21 (12%) OV. The data are given in table 2:

⁸ Greenberg formulates Universal 9 based on whether a language is prepositional or postpositional, but the correlation with VO/OV can still be considered to be valid given that only 8% of VO languages have postpositions and only 3% of OV languages have prepositions (Dryer 2005a, b).

⁹ VO with final particles is the most common type of language in terms of the total number of languages. The discrepancy between the language/genus data is largely due to the fact that there are many closely-related Oceanic languages with this combination of properties.

Table 2. Genera (languages, families)¹⁰ with VO/OV word order and initial/final question particles (Dryer 2005a & 2005e).

	VO	OV
Initial	39 (75, 19)	21 (34, 14)
Final	51 (135, 15)	66 (127, 39)

With roughly equal numbers of VO and OV genera (90 and 87, respectively) given in table 2, it would be expected that the number of VO languages with initial particles would be much higher than the number of VO languages with final particles. OV languages do behave as expected, with a strong tendency to have final particles. But VO languages, which should have a tendency towards initial particles, show the same skewing towards final question particles: 76% of OV languages and 57% of VO languages (by genus) have final particles, compared with 24% and 43% respectively with initial particles. Furthermore, initial particles are almost twice as likely to occur with VO order than with OV (39 genera compared to 21 genera), but final particles are only slightly more common in OV structures than VO (66 and 51 genera respectively). These facts clearly indicate that, although the preference for finality is not as strong in VO languages as it is in OV languages, there is something to be explained: there should be a strong preference for initiality, but we see a slight majority of final particles in VO languages.

2.1.1. Co-occurrence of language properties

It is important to note that the two features (VO word order and final question particles) simply being present in the same language does not necessarily mean that they co-occur. Languages with variable VO/OV order may very well use one or the other in order to avoid a word order that is not permitted. Holmberg (2000) addresses this problem in relation to the development of the generalisation which would later become known as FOFC. In that paper, the generalisation is set out as in (39):

¹⁰ When numbers of languages are given, the number of genera is given first, followed by number of languages and number of families in brackets. Comparing genera allows for the most accurate comparison, as it avoids biasing the results if many closely-related languages exhibit the same feature.

- (39) If a phrase α is head-initial, then the phrase β immediately dominating α is head-initial. If α is head-final, β can be head-final or head-initial.
(Holmberg 2000: 124)

Working from typological data in Dryer (1992), Holmberg (2000) examines the order of a verb of volition (e.g. *want*) and the main verb which is head of *want*'s VP complement, as in (40):

- (40) *wants + to see Mary*¹¹
(Dryer 1992: 91)

Dryer (1992), in proposing his Branching Direction Theory, observes that:

Verb patterners are nonphrasal (nonbranching, lexical) categories and object patterners are phrasal (branching) categories. That is, a pair of elements X and Y will employ the order XY significantly more often among VO languages than among OV languages if and only if X is a nonphrasal category and Y is a phrasal category (Dryer 1992: 89).

He finds that verbs of volition and their subordinate verbs pattern with the order of V and O: that is, languages with VO favour the order *Want*>V and languages with OV tend to have V>*Want* order. Data from Dryer's sample (of 85 genera with relevant data available) show that the correlation accounts for the majority of genera (71 of the total 85): 42 with *Want*>V and VO, and 29 with V>*Want* and OV. The remaining 14 genera pattern the opposite way (10 *Want*>V and OV, and 4 V>*Want* and VO), and so the strong tendency is established, at least for VO languages. The data are shown in table 3, with the heads shown in bold italics:

Table 3. Correlation between order of V and O, and V and subordinate verb of volition.

	<i>V</i> > O	O > <i>V</i>
<i>Want</i> > V	42	10
V > <i>Want</i>	4	29

(Based on Dryer 1992: 94)

¹¹ Note that in English at least, the complement of *want* is an infinitival TP. Dryer ignores this point, and it is not detrimental to the reasoning, as the important fact is the position of *want* and its complement relative to each other.

The generalisation as set out in (39) does not describe a tendency: it is an absolute, and there appear to be four languages that constitute counterexamples to the generalisation, having both $V > Want$ and VO ordering.¹² By transitivity, if V precedes *Want* and V precedes its object, we would see the order $V > O > Want$ in these languages, which is the construction ruled out by (39):

(41) [[V [O]] Want]

Holmberg (2000) looks further at these languages, however, and finds that none of the data available include an example of the order $V > O > Want$, and furthermore they have variable VO/OV order. Holmberg (2000) expects that these languages will in fact conform to the generalisation, and that the two orders ($V > O$ and $V > Want$) will not occur in combination. He notes that Finnish and Old Icelandic are languages of just this type, as they have mixed word order but are classified as VO and allow $V > Want$. These facts make Finnish and Old Icelandic apparent counterexamples to the generalisation, like the four languages in Dryer's (1992) sample, but crucially they do not allow the combined order $V > O > Want$, as illustrated in (42):

(42)	Kyllä	Jussi haluaa	ostaa	Ferrarin.	[want V O]
	indeed	Jussi wants	buy	Ferrari	
	Kyllä	Jussi Ferrarin	ostaa haluaa.		[O V want]
	indeed	Jussi Ferrari	buy wants		
	Both: 'Jussi does want to buy a Ferrari.'				
	*Kyllä	Jussi ostaa	Ferrarin	haluaa.	[V O want]
	indeed	Jussi buy	Ferrari	wants	

(Anders Holmberg, p.c.)

Newton (2007) illustrates this important point for two languages (from a sample of 599) listed on WALS as having VO order and final adverbial subordinators, Guajajara (Tupi-Guarani, Brazil) and Buduma (Afro-Asiatic,

¹² (39) has now been superseded by FOFC precisely because there are certain exceptions to the generalisation as presented here. This matter is discussed in detail in Chapter 3.

Chad/Cameroon/Nigeria).¹³ She shows that even these two instances out of 599 cannot be considered to have VO order and final subordinators. Guajajara does not in fact have a final complementiser word, and in Buduma the situation is as described for Finnish above: both properties are true of the language, but not simultaneously.

Guajajara has the basic word order VSO, though some variation can occur (for instance, subject pronouns occur as verb prefixes):

- (43) u-ʔu kuzə məŋ
 eat woman mango
 'The woman ate the mango.' (Harrison 1986: 409, cited in Newton 2007)

Based on Bendor-Samuel (1972), Newton (2007) shows that the language has many sentence-final particles, which occur in a fixed order and encode various aspectual or discourse functions (future time, 'in vain', emphasis etc.).

Subordination is effected by means of intonation, rather than by any complementiser word. There is the option to use particles, but the particle used is the 'weak exclamative' particle *pa*, which does not have a subordination function:

- (44) Kaitan ze pa kamiaw uzuka aʔe pa
 Kaitan say PRT lorry killed it PRT
 'They say that a lorry killed Kaitan.' (Bendor-Samuel 1972: 168)

Newton also speculates that this might not in fact be a subordination at all, rather having a meaning like 'Kaitan, they say, a lorry killed her'. The specific function of the final particles combined with their optionality in subordinate clauses leads Newton to doubt that there are true final complementisers in

¹³ Newton (2007), along with Biberauer, Holmberg & Roberts (2009) uses the 'adverbial subordinator' data on WALS as an indicator of the behaviour of complementisers, which WALS does not give information for. Paul (2011) claims that Biberauer, Holmberg & Roberts use the figures as evidence of the lack of final complementisers in VO languages, and she argues that this is inadvisable since 'adverbial subordinator' includes non-C elements. I do not invoke the adverbial subordinator asymmetry as evidence for FOFC, as other authors show the VO...C gap adequately. However, the undeniable asymmetry in the distribution of adverbial subordinators is interesting in itself, and given that a good many of them *are* C elements, I do not think it is incorrect to use it as supporting evidence.

Guajajara. In fact, she notes that Harrison (1986: 408) claims that Guajajara is verb-final in dependent clauses, not VO. If this is true, it further corroborates Newton's suspicion that the sentence in (44) does not contain a subordinate clause. It also means that this is not an example of a VO language with final complementisers.

The other language cited in WALS as having VO order and final adverbial subordinators is Buduma, an Afro-Asiatic language. Its basic word order is SVO, again permitting some variation:

- (45) kugúi atái ámbai
 hen lays eggs
 'The hen lays eggs.' (Lukas & Nachtigal 1939: 74, cited in Newton 2007)

Like Guajajara and the languages discussed later in this chapter, it has final question particles (Lukas & Nachtigal 1939: 74, cited in Newton 2007):

- (46) wu-k'egoi manna ba?
 1SG-say.2PL word Q
 'Shall I say a word to you?'

- (47) kúbbu yō gui wa?
 natron this buy.2SG Q
 'Are you buying this natron?'

It also has clause-final subordinators:

- (48) uli dúlima mána hábahan nahange ga nāle
 boy leprous word friend heard.3SG PRT went.3SG
 'When the leprous boy heard his friend's word he went.'

- (49) lugu ŋundu (bukor) anê ŋé
 man house (horse) has PRT
 'If a man has a house (horse)'

However, Newton (2007) notes that the order of object and verb in all of the examples with final subordinators (as well as some of those with final particles) is OV, not VO. Frajzyngier (1996) gives examples of final question particles in

embedded questions in Buduma, but none include an object following the verb. Furthermore, Frajzyngier notes that embedded clauses precede the main clause (as in the examples above):

- (50) lúgu j'aree-a kindaatoo móó-me-no
man be.right-Q now 1PL-see-1PL
'Whether the man is right we will now see.'
(Lukas 1939: 79, cited in Frajzyngier 1996: 220)

These languages do not allow VO to co-occur with final complementisers in the same construction, just as with the VO>*Want* distribution in Finnish and Old Icelandic discussed above.

From this discussion can be seen the importance of understanding that if a language exhibits two independent word orders it does not necessarily allow them to co-occur. The next section discusses question particles and demonstrates that the languages said to have VO order and final question particles do frequently allow them to co-occur in the same sentence. Specifically, section 2.2 illustrates final question particles in a number of VO languages, and section 2.3 shows the interesting fact that these question particles tend to be forbidden from marking embedded questions.

2.2. Question particles in the world's languages

This section examines a large number of languages with question particles. The data is gathered from published grammars of languages with question particles. The data therefore generally relate to standard varieties rather than dialects, and in some cases the grammars are prescriptive. I began by looking at those languages stated as having particles on WALS and sought out those for which a detailed enough grammar was available. I added other languages as I went along, usually from grammars but in a few cases from native speaker informants. This method of data collection necessarily means that the sample of languages used is not as representative as one might wish, and it is what is known as a

'convenience sample'. The language data given on WALS are more representative, but the information recorded there is not sufficient for the purposes of this study.

The data presented here is representative of 119 languages, drawn from 24 language families (65 genera) across the world, as shown in Table 4:

Table 4. Language families, genera and languages studied.

Family	Geographical area	No. of lgs	Number of genera	Languages
Niger-Congo	Central/southern Africa	26	12 (Bantoid 7, Platoid 3, Gur 3, Adamawa 2, Kwa 2, Northern Atlantic 2, Western Mande 2, Eastern Mande 1, Kainji 1, Edoid 1, Cross River 1, Ubangi 1)	Babungo, Bambara, Birom, Chichewa, Dan, Doyayo, Duka, Engenni, Ewe, Fyem, Jukun, Kabiye, Koromfe, Langi, Mumuye, Ndebele, Nkonya, Nkore-Kiga, Noon, Ogbronuagum, Sango, Soninke, Supyire, Swahili, Tunen, Wolof
Austronesian	South-east Asia, Oceania	17	3 (Oceanic 15, Central Malayo-Polynesian 1, Chamorro 1)	Anejoñ, Arosi, Chamorro, Futuna-Aniwa, Jabêm, Lenakel, Mangap-Mbula, Mekeo, Mokilese, Motu, Rapanui, Rotuman, Saliba, Samoan, Sri Lanka Malay, Tetun, Tigak, Tolai
Sino-Tibetan	East Asia	13	5 (Kuki-Chin-Naga 6, Karen 3, Chinese 2, Bodic 1, Baric 1)	Belhare, Cantonese, Chang, Chin, Hmar, Meithei, Mizo, Kayah Li, Mandarin, Pwo Karen, Sgaw Karen, Siyin Chin, Tarao,
Indo-European	Worldwide; Europe, South/Central/South-west Asia	11	6 (Indic 4, Celtic 5, Albanian 1, Slavic 2, Romance 1, Iranian 1)	Albanian, Breton, Cornish, Dumaki, French, Gaelic, Irish, Oriya, Panjabi, Persian, Polish, Russian, Urdu, Welsh
Afro-Asiatic	North/central Africa, south-west Asia	7	4 (West Chadic 5, Biu-Mandara 5, East Chadic 2, Semitic 1)	Arabic (Standard), East Dangla, Gude, Hausa, Lagwan,

				Lamang, Lele, Margi, Mina, Miya, Mupun, Pero, Zaar
Australian	Australia	7	5 (Pama-Nyungan 3, Tiwian 1, Nyulnyulan 1, West Barkly 1, Ngandi 1)	Bandjalang, Djingili, Margany, Ngandi, Nyunyul, Tiwi, Watjarri
Nilo-Saharan	Central/east Africa	5	4 (Bongo-Bagirmi 2, Kresh 1, Kuliak 1, Nilotic 1)	Gula, Karimojong, Kresh, Ik, Mbay
Austro-Asiatic	South/south-east Asia	5	4 (Bahnaric 2, Monic 1, Viet-Muong 1, Munda 1)	Chrau, Ho, Mon, Sre, Vietnamese
Oto-Manguean	Mexico	5	2 (Zapotecan 3, Mixtecan 2)	Chatino, Copala Trique, Yosondúa Mixtec, Mitla Zapotec, Quiegolani Zapotec
Tai-Kadai	Southern China, south-east Asia, north-east India	3	1 (Kam-Tai 3)	Lao, Nung, Thai
Torricelli	Papua New Guinea	2	2 (Kombio-Arapesh 1, Wapei-Palei 1)	Arapesh, Olo
West Papuan	West Papua	2	2 (North Central Bird's Head 1, Hatam 1)	Hatam, Maybrat
Mayan	Mesoamerica	2	1 (Mayan 2)	Tzotzil, Tzutujil
Trans-New Guinea	New Guinea	2	2 (Engan 1, Madang 1)	Kewa, Tauya
Totonacan	Mexico	1	1 (Totonacan)	Totonac
Uralic	Eastern/northern Europe, north Asia	1	1 (Finnic)	Estonian
Penutian	Western United States	1	1 (Sahaptian)	Nez Perce
Eskimo-Aleut	Alaska, Canada, Greenland, eastern Siberia	1	1 (Eskimo)	West Greenlandic
Barbacoan	Colombia, Ecuador	1	1 (Barbacoan)	Awa Pit
Coahuiltecan	Mexico	1	1 (Coahuiltecan)	Coahuilteco
Sepik	Papua New Guinea	1	1 (Ram)	Awtuw
Uto-Aztecan	Western United States, Mexico	1	1 (Tepiman)	Nevome
Tucanoan	Colombia, Brazil, Ecuador, Peru	1	1 (Tucanoan)	Retuarã
Altaic	East/north/	1	1 (Turkic)	Turkish

	central/west Asia, eastern Europe			
Japanese	Japan	1	1 (Japanese)	Japanese
Creole	Widespread	1	1 (Malay-based)	Sri Lanka Malay
Totals:		119	65	

Of these 119 languages, 82 (68.9%) have VO word order, and 35 (29.4%) have OV word order. For the remaining two languages in the list the word order was not given, or no one order is said to be neutral or most frequent. Of the languages with VO order, the majority (62) have SVO order, and the others VSO (15), VOS (1), or no ordering relation between the subject and other elements was specified. The languages with OV order are all SOV.

32 (26.9%) of the languages listed here have an initial question particle, and 78 (65.5%) a final question particle. 9 more (7.6%) have a particle that is variable in position, in some other position (e.g. second position), or no information on its position was available.

Combining these two features, the figures are as in table 5 (number of languages):

Table 5. Languages with VO/OV word order and initial/final question particles.

	VO	OV	Other order
Initial	22 (SVO 9, other VO 12)	9	1
Final	54 (SVO 48, other VO 6)	23	1
Other position	6 (SVO 5, other VO 1)	3	0

There are considerably more languages with VO order than OV, and many more with final particles than with initial. No inference should be drawn from this, as the sample of languages chosen is not necessarily an unbiased representation of the world's languages, as noted above. The data were collected by examining the grammars of available languages, beginning with VO languages with final particles (as the object of interest) and progressing to the other, 'well-behaved',

combinations, giving a greater number of VO languages in my sample. VO and OV order are in fact approximately equally common among the world's languages, although final particles are more common than initial particles overall.

Nevertheless, as table 2 above showed (repeated here for convenience), if we look at the larger numbers available on WALS, it can be seen that there is indeed a striking asymmetry in the way that question particles pattern with word order:

Table 2. Genera (languages, families) with VO/OV word order and initial/final question particles (Dryer 2005a & 2005e).

	VO	OV
Initial	39 (75, 19)	21 (34, 14)
Final	51 (135, 15)	66 (127, 39)

On the most representative and comprehensive sample presently available to us, covering some 177 language genera, VO...Q comes out as a very common word order combination. It is clear that VO word order can readily occur with a final question particle in many unrelated languages. Some examples are given in (51)-(63):

(51) *Mandarin (Sino-Tibetan, China):*

Zhāng-sān cháng kàn diànyǐng ma
 Zhang-san often see movies Q
 'Does Zhang-san often see movies?' (Li & Thompson 1984: 54)

(52) *Cantonese (Sino-Tibetan, China):*

neh johng hohk sahn ma?
 2SG run.into crane god Q
 'Have you rushed into the crane god, eh?'
 (Morrison 1828, cited in Cheung 2001: 223)

(53) *Vietnamese (Austro-Asiatic, Vietnam):*

chị có mua cái nhà không?
 PRN ASR buy CL house Q
 'Did you [elder sister] buy (the) house?' (Duffield 2011: 3)

(54) *Thai (Tai-Kadai, Thailand):*

yàak cà khuy tóo máy
 want NCM talk continue Q
 'Do you want to continue talking?' (Iwasaki & Ingkaphirom 2005: 280)

- (55) *Mupun (Afro-Asiatic, Nigeria):*
a man nalep-e
2M know Nalep-Q
‘Do you (M.) know Nalep?’ (Frajzyngier 1993: 360)
- (56) *Lele (Afro-Asiatic, Chad):*
kiya hab kùlbá ke-y gà
Kiya find cow GEN-3M Q
‘Did Kiya find his cow?’ (Frajzyngier 2001: 278)
- (57) *Lagwan (Afro-Asiatic, Cameroon):*
g-a mma ì gha da ?
2SG-PERF leave her.ACC house Q
‘Did you leave it at home?’ (Philip 2012: 92)
- (58) *Langi (Niger-Congo, Tanzania):*
haand-a u-ri nkua uu
plant-FV SM2.sg-COP 9.maize Q
‘Will you plant maize?’ (Hannah Gibson, p.c.)
- (59) *Babungo (Niger-Congo, Cameroon):*
à yàa náysé tí ηwé fán ηké nó dù’ mū
you P3 tell-IMPF to him as it P4 sit-PFQ
‘Did you tell him how it was?’ (Schaub 1985: 8)
- (60) *Engenni (Niger-Congo, Nigeria):*
mí wo ku wo ga bhò ka ànya mē à?
I not.say give you SP you SEQ horse my Q
‘Didn’t I tell you that you are my horse?’ (Thomas 1978: 57)
- (61) *Fyem (Niger-Congo, Nigeria):*
taa won aré-n-a
3S.PERF wash clothes-DET-Q
‘Did she wash the clothes?’ (Nettle 1998: 50)
- (62) *Ogbronuagum (Niger-Congo, Nigeria):*
m-má-kí díí ke
1SG.PROCL-PROG-go market Q
‘Am I going to market?’ (Kari 2000: 49)
- (63) *Tetun (Austronesian, West Timor/East Timor):*
ó la bá sekola ká?
2S not go school Q
(Said to child playing:) ‘Didn’t you go to school?’ (Van Klinken 1999: 212)

For completeness, (64) and (65) illustrate VO languages with initial question particles, (66) and (67) show OV languages with final question particles, and (68) and (69) show OV languages with initial question particles:

- (64) *Irish (Indo-European, Ireland):*
 an bpósfadh duine ar bith í?
 Q marry.COND anyone her
 ‘Would anyone marry her?’ (McCloskey 1979, cited in Hendrick 2000: 21)
- (65) *French (Indo-European, France/Switzerland):*
 est-ce que tu veux un café?
 Q you want a coffee
 ‘Do you want a coffee?’ (Caroline Cordier, p.c.)
- (66) *Mizo (Sino-Tibetan, Bangladesh/India):*
 vok i2-n vul? doon1 em2
 pig 2NOM-PL raise ASP Q
 ‘Are you going to raise pigs?’ (Chhangte 1989: 162)
- (67) *Japanese (Japanese, Japan):*
 onii-san wa coohii wo nomimasu ka?
 brother TOP coffee OBJ drink Q
 ‘Does your brother drink coffee?’ (Risa Goto, p.c.)
- (68) *Wolof (Niger-Congo, Gambia/Senegal):*
 (ndax) dem-oon ngeen fa ma leen wax-oon?
 Q go.PAST₁ you.II thereme.III you.IV say.PAST₁¹⁴
 ‘Had you gone where I told you?’ (Nije 1982: 264)
- (69) *Panjabi (Indo-European, India/Pakistan):*
 (kii) tusi`i ajj káanii suNaavoge
 (Q) you today story tell-FUT.2MP
 ‘Will you tell a story today?’ (Bhatia 1993: 5)

These examples illustrate that all four combinations of VO/OV and initial/final question particles occur in the world’s languages to some degree. However, as

¹⁴ The original source is in French, and translations of the glosses are my own, with help from Caroline Cordier. The original French translation is given in this footnote. The translation given here has the verb in the pluperfect. I have translated it as such into English, but it is not clear if this is correct. Simple past may be more accurate.

(68’) (ndax) dem-oon ngeen fa ma leen wax-oon?
 est-ce que aller+PASSÉ₁ vous-II là-bas moi-III vous-IX dire+PASSÉ₁
 ‘Étiez-vous allé là où je vous ai dit?’

discussed in section 2.1, final particles in VO languages are expected (contrary to fact) to be very rare, in keeping with Greenberg's word order generalisations. In fact, OV languages with initial particles constitute the smallest group and are quite rare, with only 21 genera listed on WALS.

The next section demonstrates that not only is there an asymmetry in the distribution of initial and final polar question particles, but there is also asymmetry in their behaviour. In what follows, data from many of the languages given above is presented in detail. One striking difference between final particles in VO languages compared to other question particles is apparent: in VO languages, final question particles are not permitted to mark embedded questions (with one exception, discussed in detail in Chapter 7).

2.3. Final question particles do not appear in embedded questions

The facts in the preceding section are generally known: VO languages readily occur with final question particles, despite this being unexpected on most word order theories. This section presents a fact which is not well-known: final polar question particles in VO languages do not introduce embedded questions. An explanation for this is argued for in Chapter 6; this section introduces the data in support of the generalisation.

Information about the possibility of using a question particle in an embedded question is rarely given in the grammars. Of the 119 languages studied, 71 gave no information on this point. Of the rest, 12 languages do not permit the particle to occur in embedded clauses and 23 do allow it, or allow it with some other condition. However, there is a noticeable gap in the distribution: final particles in VO languages appear not to be able to occur in embedded questions, whereas for the other categories the construction is acceptable in the majority of languages.

In some cases, information might be inferred from the silence of the grammars on a particular subject, although this 'information' should be treated with great

caution. On the matter of the optionality or otherwise of the particle, for instance, many grammars say something along the lines of 'questions are formed with the particle'. In a learner's grammar, this might mean that questions are always formed with the particle, or simply that questions *should* be formed with the particle. Furthermore, explicit information differs on this point: 43 grammars said that a particle was optional compared to just 6 that said it was obligatory (70 did not specify). This might indicate that seven times as many languages have optional question particles as have obligatory ones. However, it might as easily be the case that an optional particle needs to be specified, whereas an obligatory one does not need to be explicitly named as such.

Where a grammar mentions nothing of the possibility of embedding the particle, can it then be inferred that it is possible, and therefore unremarkable and so not discussed? Or that it is not possible and therefore not mentioned (as prescriptive grammars or those for learners tend not to describe what cannot be said, only what one should say)? Great caution should be exercised here, and more information sought before this type of inference is made.

The word order generalisation argued for here is illustrated by those languages which have VO order and final question particles and which do not allow embedding. It is also necessary to show that at least some of the other types of language do allow the particle to be embedded. If it were a bi-directional implication, those languages which have initial question particles or OV order and final question particles should always allow it. However, this seems not to be the case, the implication being the weaker one shown in (70):

- (70) If a language is VO and has a final question particle, the question particle may not subordinate questions. If a language is OV, or is VO with an initial question particle, it may or may not allow the particle to subordinate questions.

In addition, there are exceptions which prove the rule: some languages have VO and a final particle and do allow it to appear in embedded clauses, but with some condition, such as an obligatory initial complementiser or that the particle must

be in initial position. Thus, in these languages, the final question particle is in fact not allowed to mark an embedded question, though it may appear within one in some cases, often optionally. The languages of each type are given in table 6:

Table 6. Word order, position of polar question particle and availability of an embedded question with the particle (number of genera/languages given).¹⁵

Word order + position of particle	Embedded particle not allowed	Embedded particle allowed	Embedded particle allowed with condition	Not specified
VO + Final	7/7 (5 SVO, 2 other VO): Ewe, Kayah Li, Langi, Mandarin, Miya, Nung, Vietnamese	1 (SVO): Thai	7/8 (8 SVO, 0 other VO): Babungo, Chrau, Estonian, Lele, Mupun, Yosondúa Mixtec, Supyire	42 (37 SVO, 5 other VO)
VO + Initial	4/4 (SVO): Mokilese, Rotuman, Swahili, Standard Arabic	4/8 (2 SVO, 6 other VO): Polish, Hausa, Mitla Zapotec, Quiegolani Zapotec, Irish, Gaelic, Welsh, Breton	0	13 (5 SVO, 8 other VO)
VO + Other position	0	1/1 (SVO): Russian	0	3 (3 SVO, 0 other VO)
OV + Initial	1/1: Panjabi	3/3: Persian, Retuarã, Wolof	0	5
OV + Final	0	2/2: Turkish, Japanese	0	2
OV + Other position	0	0	0	3

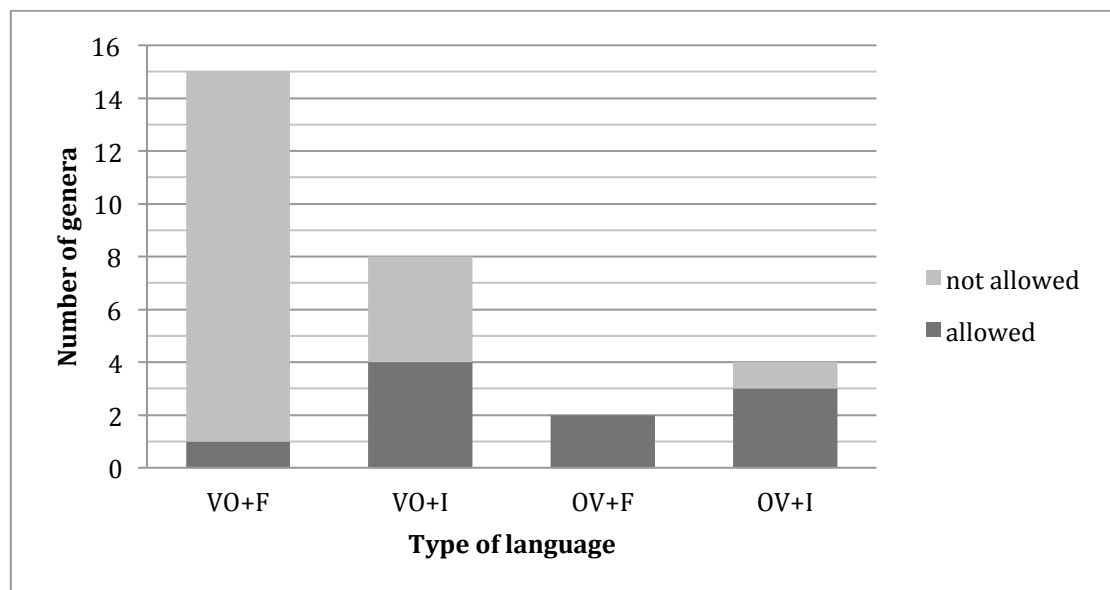
Table 6 shows that for the languages with VO and a final question particle, it is overwhelmingly forbidden for the particle to mark an embedded question (although note that this restriction is also found with initial particles. The important point is that initial particles *may* appear in embedded questions, while final ones may not). There are seven languages in which it is not permitted, and a further seven in which the particle must be accompanied by some other marker

¹⁵ The total number of languages given in the table is 103, rather than 119. The three languages with word order other than VO or OV also gave no information on embedding, and are not included in the table. A further 13 which gave no information on this point are also not included for other reasons.

such as a complementiser, the particle has to move to another position, or the particle is not the true question element.

If we combine the columns ‘not allowed’ and ‘allowed with condition’, as these both indicate that the particle cannot be the embedded question marker, and focus just on the initial and final particles in VO and OV languages, the data can be presented as in figure 1, in which each bar represents a language type (e.g. VO+Final) and the two sections of the bar show how many languages do or do not allow the question particle to mark embedded questions:

Figure 1. Availability of question particles in embedded questions.



This pattern may in fact be more widespread than simply question particles: the Chinese particles are main clause elements, and the final particles found in Northern Italian dialects (which are not specifically question particles, appearing in imperatives and exclamatives as well as *wh*- and polar questions) are banned from appearing in embedded clauses (Munaro & Poletto 2005: 251):

- (71) *Pagotto dialect*:
i me a domandà cossa (*mo) che avon
they-me-have asked what [mo] that (we) have
fat (*mo)
done [mo]
‘They asked me what we have done.’

- (72) *Venetian dialect:*
 no so dove (*po) che el ze ndà (*po)
 (I) not know where [po] that he-is gone [po]
 'I don't know where he has gone.'

However, here I focus just on polar question particles.

2.3.1. *The question particle may mark embedded questions in OV languages, and in languages with initial question particles*

In order to illustrate the fact that there is not simply a blanket ban on question particles in embedded questions, this section shows that many (although not all, as noted in table 6) of the 'normal' language types allow the question particle to embed questions.

Initial particles in VO languages (Q...VO):

Irish, Gaelic, Welsh and Breton (Indo-European, Ireland/UK /France):

The Celtic languages all have initial question particles (*an*, *a* and *ha* in Irish/Gaelic, Welsh and Breton respectively), and VO word order (all examples are cited in Hendrick 2000: 21-22):

- (73) an bpósfadh duine ar bith í? [Irish]
 Q marry.COND anyone her
 'Would anyone marry her?' (McCloskey 1979)
- (74) an robh sibh anns an achadh an diugh? [Gaelic]
 Q were you.PL in the field today
 'Were you in the fields today?' (Robertson & Taylor 1993)
- (75) a wyf yn euog o gamliwio? [Welsh]
 Q am PRT guilty of misrepresentation
 'Am I guilty of misrepresentation?' (Thorne 1993)

(76) ha te a glevas? [Breton]
 Q you PRT hear.PAST
 'Did you hear?' (Gregor 1980)

The particle can, in each case, also introduce embedded questions:

(77) ní fhios agaman bpósfadh duine ar bith í [Irish]
 NEG.be know at.1S Q marry.COND anyone her
 'I don't know if anyone would marry her.' (McCloskey 1979)

(78) dh'fhaighnich e dhomh an robh sibh anns an achadh
 asked he of.1S Q were you.PL in the field
 an diugh [Gaelic]
 today
 'He asked me whether you were in the fields today.' (Robertson & Taylor 1993)

(79) tybed a ydy John yn dod [Welsh]
 wonder Q is John PROG coming
 'I wonder whether John is coming.' (*Gramadeg* 1976)

(80) gwelet e vo ha brav e vo an amzer
 see PRT be.FUT Q nice PRT be.FUT the weather
 'We shall see whether the weather is nice.' (Stephens 1993) [Breton]

In each of the Celtic languages the particle is the only element to mark a question as embedded, and it appears in precisely the same position and form as it does in main clause questions. There is therefore no restriction on the ability of Celtic question particles to mark embedded questions.

Hemon notes with regard to Breton that '[a] clause introduced by *a(c)* is not a real dependent clause, but an independent clause juxtaposed to another independent clause' (1975: 139). He says that this is evident from the word order, which is as in an independent clause. There exists a verbal particle *a*, which does introduce a dependent clause, and then the word order changes to that of a dependent clause. Hemon does not note what word order change occurs, and the examples above certainly all have the same word order as their main clause counterparts. However, as the particle is initial this point is not crucial to the argument here.

Polish (Indo-European, Poland):

Polish has an initial question particle *czy*, which is optional in main clause questions:

- (81) Czy twój brat pije kawę?
Q your brother drinks coffee
'Does your brother drink coffee?' (Małgorzata Krzek, p.c.)

The same particle is used in embedded questions, and it becomes obligatory:

- (82) Spytalam go czy był w Ameryce
ask.1SG.F.PAST 3SG.M.ACC Q was.3SG.PAST in America.INSTR
'I asked him if he had visited America.' (Małgorzata Krzek, p.c.)

Quiégolani Zapotec (Oto-Manguean, Mexico):

Quiégolani Zapotec is another example of a VO language with an initial polar question particle that permits the particle to appear in embedded questions. The question particle is sentence-initial *pe*, which Black (2000) argues should be considered a complementiser because there is also a complementiser *ne* and the two cannot co-occur. The particle can appear in *wh*-questions and is used in embedded questions (Black 2000). Although the author states this explicitly, the only example given appears to be direct speech (Black 2000: 122):

- (83) r-e Javyer pe w-u maa nii de
H-say Javier Q c-eat 3A foot 2nd
'Javier asked, 'did the snake eat your foot?''

Quiégolani Zapotec should therefore be considered to allow embedding of the question particle, but nothing rests on this fact.

Hausa (Afro-Asiatic, Niger/Nigeria):

Hausa is a West Chadic language with SVO order (Newman 2000: 718):

- (84) Mařyàm takàn dafà àbinci
 [No gloss]
 Subject PAC VP
 ‘Maryam customarily cooks food.’

The question particle is initial *kō*, and indirect questions are also introduced with the complementiser *kō* ‘whether’, or *in* ‘if’ with some verbs such as ‘ask’, ‘see’ and ‘hear’ (Jaggar 2001: 584):

- (85) nā tàmbàyē tà [kō/in tã kintsà]
 1SG.PFV ask 3F COMP 3F.PFV be.ready
 ‘I asked her whether/if she was ready.’

- (86) Nā tàmbayà *kō* sun yi aikìn
 [No gloss]
 ‘I asked whether they did the work.’

- (87) Bàn san *kō* aài zō ba
 [No gloss]
 ‘I don’t know whether he will come.’

- (88) Kā san *kō* dà saurā
 [No gloss]
 ‘Do you know whether there is any left?’ (Newman 2000: 502)

Indirect *wh*-questions are also introduced by *kō*, and include a *wh*-word (Newman 2000: 501):

- (89) Bài kùla dà *kō* nawà sukà mutù ba
 [No gloss]
 ‘He didn’t care how many died.’

Indirect questions lack normal question intonation features in the embedded clause. They can occur without *kō* but are only marginally acceptable without it.

Wolof (Niger-Congo, Gambia/Senegal):

Wolof has SVO order with an optional initial polar question particle, *ndax* (Njie 1982: 264):

(90) (ndax) dinga seeti sa yaay?
 Q DI¹⁶.you.II see.go your mother¹⁷
 'Are you going to go and see your mother?'

(91) (ndax) dem-oon ngeen fa ma leen wax-oon?
 Q go.PAST₁ you.II thereme.III you.IV say.PAST₁¹⁸
 'Had you gone where I told you?'

In indirect questions the same particle is present, and it in fact becomes obligatory (Njie 1982: 264):

(92) dama laa laac ndax dinga seeti sa yaay
 me.IV you.IX.DI ask Q DI.you.II see.go your mother¹⁹
 'I ask you if you will go and see your mother.'

(93) mu ne ndax dem-oon ngeen fa biik
 he.III say Q go.PAST₁ you.II thereyesterday.night²⁰
 'He is asking if you had gone there last night.'

¹⁶ The author glosses this morpheme simply as *di*. The most accurate translation appears to be 'incomplete marker', although it is marked on the pronoun. It is used for actions either ongoing at the time of speaking or to take place in the near future. For cultural and religious reasons, it is taboo to refer to the future, and so future events are referred to as incomplete (Branwyn Poleykett, p.c.).

¹⁷ The glosses and translations in all of the Wolof examples are my translations of the author's French originals (with thanks to Caroline Cordier for help with the French). The French is given in footnotes.

(90') (ndax) dinga seeti sa yaay?
 est-ce que di+toi- II voir+aller ta mère
 'Est-ce que tu iras voir ta mère?'

¹⁸ The translation given here has the verb in the pluperfect. I have translated it as such into English, but it is not clear if this is correct. Simple past may be more accurate.

(91') (ndax) dem-oon ngeen fa ma leen wax-oon?
 est-ce que aller+PASSÉ₁ vous-II là-bas moi-III vous-IX dire+PASSÉ₁
 'Étiez-vous allé là où je vous ai dit?'

¹⁹ The final question mark is present in the original; I omit it in my translation.

(92') dama laa laac ndax dinga seeti sa
 moi-IV toi-XI+di demander est-ce que di+toi- II voir+aller ta
 yaay
 mère
 'Je te demande si tu iras voir ta mere?'

²⁰ As noted in Chapter 1, the translation given here has the verb in the pluperfect. I have translated it as such into English, but it is not clear if this is correct. Simple past may be more accurate.

(93') mu ne ndax dem-oon ngeen fa biik
 lui-III dire est-ce que aller+passé₁ vous-II là-bas hier.nuit
 'Il demande si vous y étiez allé la nuit dernière.'

Furthermore, *mbaa* 'I hope that' can introduce questions, and can be used in direct or indirect questions (Njie 1982: 265):

(94) mbaa dinga seeti sa yaay?
 I.hope.that DI.you.II see.go your mother²¹
 'You will go to see your mother, I hope?'

(95) dafaa laac mbaa dinga seeti sa yaay
 he.IV ask I.hope.that DI.you.II see.go your mother²²
 'He is asking if you will go and see your mother.'

These languages indicate that the initial question particle in VO languages frequently marks embedded questions. A further four VO languages in my sample, namely Standard Arabic (Afro-Asiatic, widespread), Mokilese (Austronesian, Micronesia), Rotuman (Austronesian, Fiji) and French (Indo-European, France/Switzerland) do not permit the initial particle to embed questions.²³

Standard Arabic (Afro-Asiatic, widespread):

The initial question particle in Standard Arabic is *hal*:

(96) hal yastati'-w Basem kyadata ssayyara?
 Q can-3S.M Basem driving the.car
 'Can Basem drive?' (Mais Sulaiman, p.c.)

In embedded questions a different particle *?in* is used:

²¹ (94') mbaa dinga seeti sa yaay?
 j'espère que di+toi-II voir+aller ta mère
 'Tu iras voir ta mère, j'espère?'

²² (95') dafaa laac mbaa dinga seeti sa yaay
 lui-IV demander j'espère que di+toi-II voir+aller ta mère
 'Il demande si tu iras voir ta mère.'

²³ Swahili (Niger-Congo, Tanzania) also behaves in this way, although I do not have data to illustrate (Steve Nicolle, p.c.).

- (97) saʔal-tu-hw ʔin kana kad zara Amrika
 asked.1s.M-him if was.3s.M maybe visited America
 'I asked him if he had visited America.' (Mais Sulaiman, p.c.)

In speculative questions of the type 'I wonder if...', it may appear that the main clause particle can be used:

- (98) ya tura hal kana rrumanw yashrabuna l-kahwa?
 wonder Q were Romans drink.3PL.M the-coffee
 'I wonder, did the Romans drink coffee?' (Mais Sulaiman, p.c.)

However, *ya tura* 'wonder' is set off from the interrogative clause with an intonational break, and it can be moved to the end of the utterance. This indicates that the gloss should be as I have given it in (98) above, in which the interrogative clause is not truly embedded. It is also possible to ask such questions with yet another particle, as in (99), which is not common, but acceptable:

- (99) ʔatasaʔalw iza kana rrumanw yasharabwna l-kahwa
 wonder.1s if were Romans drink.3PL the-coffee
 'I wonder if the Romans drank coffee.' (Mais Sulaiman, p.c.)

The English version of (98), *I wonder, did the Romans drink coffee*, is given in (100), and its minimal pair with a true embedded question in (101). (100) contrasts with (101) in having both the syntax and intonation of a main clause question, while that in (101) has no auxiliary fronting and the intonation of an embedded question. As in the Arabic example, the interrogative clause in (100) also has an intonational break between the main verb *wonder* and the interrogative clause, and *I wonder* can be moved to the end of the utterance, as in (102):

(100) I wonder, did the Romans drink coffee?

(101) I wonder if the Romans drank coffee.

(102) Did the Romans drink coffee, I wonder?

Standard Arabic thus constitutes an example of a VO language with an initial particle in which the particle is not permitted in embedded questions.

French (Indo-European, France/Switzerland):

French similarly has an initial particle *est-ce que* which is used in main clause questions but cannot be used in embedded (or speculative) questions. Instead, *si* 'if' is used:

(103) Est-ce que Pierre a une voiture?
 Q Pierre have.3s a car
 'Does Pierre own a car?'

(104) Je lui ai demandé s'il était déjà allé aux
 I him have.1s asked if-he was already gone to.the
 Etats-Unis
 United States
 'I asked him if he had visited America.'

(105) Je me demande si les Romains buvaient du café
 I me ask.1s if the Romans drank some coffee
 'I wonder if the Romans drank coffee.' (Caroline Cordier, p.c.)

Rotuman (Austronesian, Fiji):

In Rotuman, questions are marked with initial *ka*, which is 'sometimes omitted' (Churchward 1940: 30):

(106) ka ia noh 'e Fiti?
 [No gloss]
 'Does he live in Fiji?'

Indirect questions are marked with a different particle *ne*, which is also the disjunctive particle (Churchward 1940: 29):

(107) goukat 'inea ra ne ia 'af'af ne 'igkà'
 [No gloss]
 'I do not know whether he is sick or not.'

Mokilese (Austronesian, Micronesia):

Mokilese usually marks questions with intonation only, but has the option of using an initial particle *a*, which seems to be related to a *wh*-word *where* or *what* (Harrison 1976: 311):

(108) *a koah sihkei?*
[No gloss]
'Are you well?'

Indirect questions must be introduced with a complementiser *pwa*, which Harrison (1976) translates as 'that'. The example he gives is a *wh*-question, however (Harrison 1976: 275):

(109) *ngoah kidal pwa inje kadardi kijakijjo*
[No gloss]
'I know who sent that present.'

These languages do not permit their initial question particle to appear in embedded questions, like the VO languages with final particles discussed in section 2.3.2 below. This in itself is not necessarily an interesting fact; the generalisation advanced in this section is that final question particles cannot mark embedded questions in VO languages. The fact that other types of particle may or may not appear in embedded questions does not affect that generalisation. However, given that an explanation for the lack of VO...Q in embedded questions is advanced in this thesis, it is desirable to explain the fact that these VO languages do not allow initial particles in the same context.

One fact that may be relevant is the fact that in almost all of these languages the particle is optional in main clause interrogatives. In French, the particle is one of a number of question-marking strategies. Intonation questions are also an option, as are questions with inversion. Questions with the particle do not license NPIs, perhaps indicating that the particle alone does not mark a question (or in the terms described in Chapter 5, does not mark open polarity, one of two aspects of interrogatives). The NPI *jamais* in (110) is interpreted as 'never' (i.e.

not as an NPI) rather than the intended sense ‘ever’ and (111) is ‘much clearer’ (Caroline Cordier, p.c.):

(110) Est-ce que tu n’-es jamais allé en France?
Q you NEG-be.2s never gone to France
#‘Have you ever been to France?’

(111) Es-tu jamais allé en France?
be.2s ever gone to France
‘Have you ever been to France?’

Another relevant observation is that the French particle is composed of morphemes meaning literally ‘is it that’, which is itself a construction with interrogative inversion. Although the construction is generally taken to be a question particle, it is possible that its origin affects its availability for embedded clauses. However, I do not speculate on this here as it does not affect the overall generalisation.

Final particles in OV languages (OV...Q)

I lack substantial information on OV languages with final particles. Although there are 140 listed on WALS, most of the grammars I had access to gave no information on the possibility of embedding the question particle. There are, however, two very well-described languages with this feature combination, Japanese and Turkish, and both allow the particle to mark embedded questions.²⁴ Sri Lanka Malay and Tamil, on the other hand, appear not to allow the particle in true embedded questions.

Japanese (Japanese, Japan):

(112) watasi-no yoyaku-wo raishuu ni kaeraremasu ka?
my appointment-ACC next.week to change.can Q
‘Can I change my appointment to next week?’

²⁴ Anders Holmberg (p.c.) notes that the question particle in Turkish is a question focus marker rather than a C-element, however.

- (113) watasi-wa kare-ni *The Lord of the Flies*-wo yonda ka
 I-NOM him-DAT *The Lord of the Flies*-ACC read.PAST if
 tazuneta.
 asked
 'I asked him if he had read *The Lord of the Flies*.' (Nami Kaneko, p.c.)

Turkish (Altaic, Turkey):

- (114) arabayı yıkayalım mı?
 the.car wash.MOD Q
 'Shall we wash the car?'

- (115) Amerika'yı ziyaret etmiş mi²⁵ diye sordum.
 America.ACC visit.PAST Q REP.SPEECH ask.PAST.1ST
 'I asked him if he had visited America.' (Olçay Sert, p.c.)

Sri Lanka Malay (Austronesian, Sri Lanka):

This variety has a question particle (in fact a clitic) *-si* which attaches to the questioned element, usually the predicate (Nordhoff 2009: 512):

- (116) se=pe uumur masà-biilan=si
 1=POSS age must-tell=Q
 '(Do I) have to tell my age?'

It can be used in a question such as (117), but the quotative marker *katha* indicates that this is reported speech rather than an embedded question, as *katha* 'can only attach to utterances' (Nordhoff 2009: 534). In fact, the Turkish example (115) is also reported speech. In a genuine embedded question, a different clitic *-so* is used instead of *-si*, as in (118):

- (117) [Aashik-nang hathu soldier mà-jaadi suuka]-si
 Aashik-DAT INDEF soldier INF-become like-Q
 katha arà-caanya
 QUOT NON.PAST-ask
 'He asks if you want to become a soldier, Ashik.'

²⁵ The different vowel in the particle in the two examples represents vowel harmony rather than a grammatical difference.

(118) innisamma anthi-oomong-so thàrà-thaau
 PROX all IRR-say-UNDET NEG-know
 'I do not know what they say about all that.' (Nordhoff 2009: 534)

Note that (118) is translated as a *wh*-question, but it is given as a polar question by Nordhoff.

Tamil (Dravidian, India/Sri Lanka):

Tamil has a question clitic *-aa* which usually attaches to the verb:

(119) John antha puthaka-thai vasi-th-an-aa?
 John-NOM the/that book-ACC read-PAST-3MS-Q
 'Did John read the book?'

The question morpheme is permitted in embedded questions, but a complementiser *enru* is also present, as in (120):

(120) Naan John-idam avan antha puthaka-thai vasi-th-an-aa
 I-NOM John-FROM he the/that book-ACC read-PAST-3MS-Q
 enru ke-tt-en.
 COMP ask-PAST-1S
 'I asked John if he had read that book.'

Based on these four languages alone, it appears that OV languages may allow final particles to mark embedded questions. This statement would be stronger with more data, but the data presented here supports the generalisation put forward in this section.

Initial particles in OV languages (Q...OV)

The OV languages with initial particles that I have been able to get information from are not as geographically or genetically widespread as the other types of language. However, this type is the least represented in the sample on WALS,

comprising only 21 genera.²⁶ The languages from which I have been able to obtain information allow the question particle to occur in embedded questions.

Persian (Indo-European, Iran):

Written Persian has a question particle *aya* which occurs sentence-initially in main clauses:

- (121) *aya* *ketab* *ra* *xarid-i?*
Q book OBJ bought-2.SG
'Did you buy a book?' (Yalda Kazemi Najafabadi, p.c.)

The same particle occurs clause-initially in embedded questions:

- (122) *az* *u* *porsid-am* *aya* *Amrika* *ra* *dide* *ast*
from 3.SG asked-I Q America OBJ seen.PTCPL AUX.3SG
'I asked him if he had visited America.' (Yalda Kazemi Najafabadi, p.c.)

Hindi, Urdu and Panjabi are all said to be languages of this type, although I lack examples of each of these. Bhatia (1993) discusses Panjabi, but the information contained there is not conclusive:

Panjabi (Indo-European, Pakistan/India):

Wh-words may be embedded. Bhatia gives only one example, and although translated as such, it appears from the gloss that it is not actually an embedded question (Bhatia 1993: 48):

- (123) (*kiõ*), *miiTin,g* *can,gii* *ráii*
(why) meeting good remain-PAST.FS
'I was wondering whether or not the meeting went well'
(with the implication 'tell me what happened in the meeting')

²⁶ There are, of course, very well-known OV languages with an initial Q in embedded clauses, including Dutch and German. I discuss only those languages that have a main clause particle as well, in order to show that the main-clause particle can be embedded.

This section has shown that although some languages prevent the particle from occurring in embedded questions, many allow it. The next section shows that the same is not true for VO...Q languages.

2.3.2. Final question particles cannot mark embedded questions in VO languages

In this section, data from various languages are presented in order to illustrate the fact that there is an overwhelming tendency for VO languages not to allow a final question particle to mark an embedded question, contrary to the facts for other language types. The languages fall into two groups: one group simply does not allow the particle to embed questions and has some other way of doing so (such as a different particle, as illustrated above for French *est-ce que/si*). The second group may allow the particle to occur in the embedded question but requires some other complementiser to subordinate the clause, as shown for Sri Lanka Malay *katha*. The former group is discussed first.

Mandarin Chinese (Sino-Tibetan, China):

Mandarin Chinese can form YNQs with a tag, with the ‘A-not-A’ construction, and with the final particle *ma*. Although the particles *ba* and *ne* can also have a question function, Li & Thompson (1984) claim that only *ma* has an exclusively interrogative use:²⁷

(124) Zhāng-sān cháng kàn diànyǐng ma
Zhang-san often see movies Q
‘Does Zhang-san often see movies?’ (Li & Thompson 1984: 54)

Li & Thompson note that ‘question-word questions and A-not-A questions can serve as embedded subjects or objects; particle questions, however, cannot.’ (1984: 55):

²⁷ Although note that Li (2006) argues that *ma* is not interrogative in itself but a degree marker, and is used in questions to indicate a high degree of wanting to know the answer. It therefore modifies the Force of the question, and its absence from embedded questions is not surprising.

(125) *Tā huì xiě zì ma méi quānxi
 3SG know.how write character Q NEG matter
 Intended: 'Whether s/he knows how to write characters doesn't matter'.

(126) *wǒ bu zhīdào tā huì xiě zì ma
 I NEG know 3SG know:how write character Q
 (Can only mean: 'Don't I know that s/he knows how to write characters?',
 not 'I don't know whether s/he knows how to write characters.')

The question particle can only be utterance-final, and it indicates that the whole utterance is a question.

Xu (1997: 97) points out that the embedded question is acceptable with the complementiser *shifou* 'if' instead of *ma*:

(127) *wo wen Zhangsan ta qu-guo Zhongguo ma
 I ask Zhangsan he go-ASP China Q

(128) wo wen Zhangsan shifou qu-guo Zhongguo
 I ask Zhangsan if go-ASP China
 'I ask Zhangsan if he has been to China.'

Other final particles, such as *le*, can appear in subordinate clauses (Xu 1997: 103):

(129) wo gaoshu Zhangsan Lisi qu-guo Zhongguo le
 I tell Zhangsan Lisi go-ASP China SFP

The final question particle *ma* is prevented from appearing in embedded clauses, with a different question strategy used instead.

Vietnamese (Austro-Asiatic, Vietnam):

In Vietnamese, the negative element *không* is used clause-finally to mark polar questions (Trang Phan, p.c.):

(130) Nam có thích em không?
 Nam ASR like PRN PRT.NEG
 'Does Nam like you?'

In embedded questions, a different particle *chưa* is used, along with a complementiser *liệu*:

(131) tôi hỏi anh liệu anh đã đến Mỹ bao giờ chưa.
 PRN ask PRN COMP PRN ANT come America when PRT.NEG
 'I asked him if he had visited America.'

Kayah Li (Sino-Tibetan, Thailand/Burma):

Kayah Li, with SVO order, has a neutral question particle $\bar{\epsilon}$, with ɔ for a 'prompt question', translating as something like 'huh?' (Solnit 1997: 233):

(132) $\text{ʔ}\bar{\lambda}$ tən̄ $\text{ʔ}\text{o}$ kō $\bar{\epsilon}$
 [No gloss]
 'Are you free today?'

(133) ne cwá ɔ
 [No gloss]
 'You're going, huh?'

There is also a further question particle, which seems to be used in a *wh*-question construction, $\text{ʔ}\bar{u}...p\bar{\epsilon}$. It means 'who', with $\text{ʔ}\bar{u}$ being the pronoun 'they' or 'someone' and $p\bar{\epsilon}$ being the Q-particle. It follows negation:

(134) $\text{ʔ}\bar{u}$ mé to $p\bar{\epsilon}$
 [No gloss]
 'Who doesn't look?'

Embedded clauses, however, are introduced by a preposition, although no example is given in the source (Solnit 1997: 233).

Nung (Tai-Kadai, Vietnam):

Direct questions have a sentence-final particle *ma* (Barnard 1934: 25):

(135) ang di bü i ma?
[No gloss]
'Has he gone?'

(136) na mè ăl di ma?
[No gloss]
'Will you or will you not stay?'

Barnard notes that indirect questions have a particle *lă, la* or *lè* (depending on the preceding sound and whether the verb is 1st/3rd or 2nd person). It precedes the verb, although the examples available do not make it clear what position it is in. Unfortunately, the example given as an indirect question is translated as a direct question, and furthermore it is a *wh*-question:

(137) ang ra wa htăhkang lă di?
[No gloss]
'Why did he come?' (Barnard 1934: 25)

Because the author explicitly asserts that indirect questions use a particle which is not the usual question particle, I continue to count this language in my data as a VO language that does not permit the particle in embedded questions. Nothing rests on this language alone; it merely provides supporting evidence.

Miya (Afro-Asiatic, Nigeria):

Schuh (1998: 326) notes that '[t]he most constant and salient mark of questions is sentence-final morpheme *à* or *wà*'. This question particle is obligatory, with the use of interrogative intonation 'somewhat marginal'.

(138) shóoshoo à?
[No gloss]
'(Was it) the rooster?'

- (139) *tə g-aa zara-za wa?*
 [No gloss]
 'Will he call her?'

(The clitic *g-* in (139) is required in non-negative imperfective verbal questions.)

Schuh finds no textual examples of indirect YNQs, and when elicited, they include *kóo* 'whether', a borrowing from Hausa. There is no other Q-marker in these examples, and they require the clitic *gà(n)* (1998: 367):

- (140) *mən sən má koo à née gən cúw niywan-uw*
 I know NEG whether PFV see GAN goatsmy-NEG
 'I don't know whether they saw my goats.'

- (141) *mèn aa tsiyá koo tlèn g-à búwa-tlèn súwà*
 I IMPF ask whether they GAN-IMPF come-ICP tomorrow
 'I will ask whether they will come tomorrow.'

Ewe (Niger-Congo, Togo/Ghana):

Neutral polar questions in Ewe, a language of the Kwa genus, are marked by a final low-tone *à* (Westermann 1930: 165):

- (142) *èkpóèà?*
 [No gloss]
 'Did you see him?'
- (143) *wógàle afià?*
 [No gloss]
 'Are they still here?'
- (144) *amádeke méva oa?*
 [No gloss]
 'Has nobody come?'

Emphatic questions (included repeated or angry questions) have *mahã*, or more rarely *ma* or *hã*, instead of *à* (Westermann 1930: 165):

(145) né èwu srõwò lá, àgaté nù ányèè wòágbò agbe *mahã*?
[No gloss]
'If you had killed your wife, could you then bring her back to life?'

(146) míedzè agbagbá álesì míeté nùì o *mahã*?
[No gloss]
'Did we not try as hard as we could?'

Questions may also be introduced by *dě*, which appears to yield a non-neutral question (Westermann 1930: 165):

(147) *dě* dówòwɔa dẹke mégàle mia nù oa?
[No gloss]
'Have you really no more work?'

(148) *dě* mienyê bé, máva égbè fiẽ oa?
[No gloss]
'Did you not know that I would come this evening?'

The word *oa* appears finally in each of (147) and (148), as it does in (144). The author does not state its meaning, but given that (144) includes the question particle, it can be seen to be a combination of the negation (or negative concord marker, paired with *me*) *o* and the question particle. Thus the particle *dě* may not be the question element, and the non-neutral status of the question may be due to its being a negative question.

The disjunctive question in (149) also appears to include final *oa*, although *me* is not present, and that in (150) contains what appears to be the question particle *à*. Westermann (1930: 166) gives disjunctive questions as being expressed with *lòo... aló*:

(149) máwɔe lòo aló nyemáwɔe oa?
[No gloss]
'Am I to do it or not?'

(150) nyeé lòo aló wòéà?
[No gloss]
'It is I or you?'

Indirect questions, however, do not have an interrogative particle unless they are emphatic. Non-emphatic indirect questions are introduced by *bé* or *béna* (although note that (151) is a *wh*-question):

(151) *ébiê bé, núkàńúti méva o*

[No gloss]

'He asked him, why he had not come.'

(152) *fia bé, núkàńúti ye nǎvíwo áyǎ ye yeágbe yiyi mahã*

[No gloss]

'The chief asked, why he should refuse to go, when his brothers called him.'

The element *bé/béna* is likely to be a complementiser or other embedded clause introducer, and the neutral question particle is not found in embedded questions.

Langi (Niger-Congo, Tanzania):

Langi (or Kirangi), a Bantu language, is SVO and has an optional final question particle *-uu* (Hannah Gibson, p.c.):

(153) *suusu t-iyó-terek-a cha-kurya*

1STPL.PP SC.1PL-PRES-cook-FV 7-food

'We are cooking food'

(154) *haand-a u-ri nkua uu*

plant-FV SM.2.sg-COP9.maize Q

'Will you plant maize?'

(155) *dom-a w-íise na gur-ii uu*

go-FV SM.2.sg-COPCONN 9.market-LOC Q

'Will you go to the market?'

(156) *ma-saare y-áányu mwi-teriy-iwre úú*

6-words 6-your SM.2.pl.PAST-listen-PERF Q

'Were your words listened to?'

In embedded questions, the final particle cannot occur and clause-initial *kooni* 'if' must be used instead:

(157) na-mɛ-ur-y-a kooni a-fik-a Dar-es-Salaam
 SM.1sg.PAST-ask-CAUS-FV if SM.1-arrive-FV Dar-es-Salaam
 ‘I asked him/her if s/he had ever been to Dar-es-Salaam’

Mina (Afro-Asiatic, Cameroon):

Mina has a final question particle *vù* in main clauses:

(158) há línè vù
 2SG Hina.SG Q
 ‘Are you a Hina man?’ (Frajzyngier 1996: 217)

In embedded questions, however, the particle is not present and an initial complementiser *mé-nà* appears (Frajzyngier notes that the first element of the complementiser also appears in *wh*-questions, and this complementiser is exclusively interrogative in function):

(159) á-dèb-á-k sí mé-nà sè-sèn mina
 3SG-ask-OBJ-1SG COMP COMP 1SG-KNOW Mina
 ‘They asked me if I know Mina.’ (Frajzyngier 1996: 218)

Margi (Afro-Asiatic, Nigeria):

Margi frequently omits the final question particle *yà* and introduces questions with initial *táďá* ‘perhaps’:

(160) kè g àjájú ŋkwà gènyì táďá nàj àyí bzér kù
 ask PREP daughter 2SG COMP like boy DEM
 ‘...ask your daughter whether she like [sic] this boy...’
 (Hoffman 1963: 101, cited in Frajzyngier 1996: 219)

It is possible for both the final particle and the clause-initial interrogative complementiser to co-occur. In this case, Frajzyngier (1996) argues that the final particle has the whole sentence in its scope (i.e., it is a main clause particle, and not within the embedded question), while the initial interrogative complementiser scopes over just the complement clause:

(161) ásènè gè táđ áshílír já yà?
 know you COMP come he Q
 'Do you know whether he has come?'

(Hoffman 1963: 101, cited in Frajzyngier 1996: 219)

Zaar (Afro-Asiatic, Nigeria):

Similarly, in Zaar embedded questions, the usual clause-final question particle is absent and the clause-initial complementiser *kó* occurs:

(162) á cet dèn kó má yel ñá wàs
 3SG ask 1SG Q 1SG see son 3SG
 'He asked me whether I saw his son.' (Frajzyngier 1996: 217)

Other Chadic languages are also likely to pattern like Mina, Margi and Zaar and disallow the usual clause-final particle in embedded questions. However, not all do; Mupun and Lele are included in the next section, as languages that allow the particle to occur within an embedded question but require another subordinating element. Frajzyngier (1996) gives examples of this in Giziga, but there are no examples with verb-object order in the embedded clause. In (163), there is no clause-final interrogative marker, and the interrogative complementiser *dà* occurs initially (from Giziga, an Afro-Asiatic language of Cameroon):

(163) 'í sèn-á dà médlèn tá
 1SG try-3SG if good NEG
 'I am trying (to find out) whether it is good or bad.'

(Lukas 1970: 79, cited in Frajzyngier 1996: 217)

Final particles in VO languages (VO...Q): The exceptions that prove the rule

In this sub-section, languages are discussed which are VO with a final polar question particle and appear to allow the question particle to appear in embedded clauses, but require some other condition to be met in order for the

resulting sentence to be grammatical. First, a language that requires its final particle to move to initial position in embedded questions:

Yosondúa Mixtec (Oto-Manguéan, Mexico):

In Yosondúa Mixtec, a language with VSO order, there are many sentence markers, both initial and final. YNQs are formed with the optional particle *nú* or *núh* sentence-finally (Farris 1992: 35-36):

(164) ni Nnaa nú
COM COM.quake Q
'Was there an earthquake?'

(165) káhnū ĩ nú
big.SG it.AML Q
'Is it (the animal) big?'

It is also possible to place *shí* 'or' initially (1992: 36):

(166) shí kīhīn rá
or POT.go you:FAM
'Are you going?'

Adding *sáá* 'then' (a temporal adverb) sentence-finally indicates a tag question:

(167) ndíshyā rá nú sáá
correct you:FAM Q then
'You are right, aren't you?'

Indirect questions are formed by placing the subordinating conjunction *nú* 'if' clause-initially, and there is no final interrogative *nú*.

(168) kīhīn ná ndéhé nú tu nīhi ná īso
POT.go I.RES POT.look if NEG POT.get I.RES rabbit
'I'll go see if I can't get a rabbit'

Yosondúa Mixtec is therefore an example of a language that allows the particle to mark embedded questions, but not if it remains in final position; it must be clause-initial.

The next four languages discussed have an alternative solution, namely that the particle may appear, but an initial complementiser must also be present in embedded questions.

Estonian (Uralic, Estonia):

Estonian has a final question particle *või/vä* ‘or’ and an initial particle *kas*. The final particle *või/vä* can signify a main clause question, but it cannot be used alone in an embedded question (apart from in some spoken language, to quote directly). In indirect questions, an initial question marker *kas* must always be present (as is a complementiser *et*), and the final particle is optional:

(169) *ma küsisin, ta tuli või/vä
 I ask.1SG.PAST she come.3SG.PAST Q

(170) ma küsisin, et kas ta tuli või/vä
 I ask. 1SG.PAST that Q she come. 3SG.PAST Q
 ‘I asked if she came’ (Anne Tamm, p.c.)

Lagwan (Afro-Asiatic, Cameroon):

Philip (2012: 92) shows that Lagwan has a final question particle in main clauses:

(171) g-a mma ì gha ða?
 2SG-PERF leave her.ACC house Q
 ‘Did you leave it at home?’

She notes that it also occurs in embedded questions, but the example in (172) shows that the element *ki* is also required, which she glosses as a ‘linker’. In her terms, this is a semantically vacuous element which serves only to subordinate the clause: namely, a complementiser (Philip 2012: 93):

- (172) ndalu ngwa fine, ki b̩le=*a* shi a
 1SG.PROG look.at outside LNK man=LNK.M some 3SG.M.PERF
 s-o gha da.
 enter-VENT house Q
 ‘I’m looking outside, (to see) whether someone has entered the house.’

Mupun (Afro-Asiatic, Nigeria):

In Mupun, an SVO language, YNQs are marked with a final particle (*o*, *e*, *a*, or *ri*).

–*e* is the particle used for neutral questions (Frajzyngier 1993: 360):

- (173) wu naa mun-e
 3M see 3PL-Q
 ‘Did he see us?’²⁸

- (174) a man nalep-e
 2M know Nalep-Q
 ‘Do you (M.) know Nalep?’

- (175) war də dəm n-lu fua-e
 3F PAST go PREP-house 2M-Q
 ‘Did she go to your (M.) place?’

–*a* is used where there is a positive assumption and is identical to the copula. –*o* signifies surprise on the part of the questioner.

Embedded questions must have the complementiser *két* (or *nə ket* or *ko ket*)

(Frajzyngier 1993: 364):

- (176) n-tal pə wur a nə ket gwar kat kə nalep-e
 1SG-ask PREP 3M COP COMP COMP 3M meet PREP Nalep-Q
 ‘I asked him whether he met Nalep.’

- (177) mo tal pə an nə ko ket n-man war-a
 3PL ask PREP 1SG COMP COMP 1SG-know 3F-Q
 ‘They asked me whether I know her.’

Although (176) and (177) have the final question morphemes –*e* and –*a* respectively, the final question marker appears to be optional in embedded

²⁸ This gloss is as in the source. It is not clear if it should be translated as ‘us’ or ‘them’.

questions, as (178) is grammatical with no final particle (Frajzyngier 1993: 383):

(178) n-tal pə wur ko ket wur kə kes makaranta
 1SG-ask PREP 3M COMP COMP 3M PERF finish school
 'I asked him whether he has finished school.'

Lele (Afro-Asiatic, Chad):

Both YNQs and *wh*-Qs have the same obligatory particle *gà* sentence-finally and penultimate raised tone (Frajzyngier 2001: 277-278):

(179) dì dí kàre gà
 eat 3M sauce Q
 'Did he eat the sauce?'

(180) kiya hab kùlbá ke-y gà
 Kiya find cow GEN-3M Q
 'Did Kiya find his cow?'

According to Frajzyngier (2001: 377), *tòn* 'ask' can take interrogative complements, as direct or indirect speech. Indirect questions have an obligatory complementiser *na*, and direct questions have it optionally. However, most of the examples he provides are direct questions, and all are *wh*-questions:

(181) kùnà-y kayo se tòn-iy na gi jè gìrè
 uncle-3M squirrel INCEPT ask-3M HYP 2M IMPF run.VN
 mina mání gà
 where like.that Q
 'His uncle Squirrel asked him, where are you running like that?'

He does give an example of what seems to be a genuine indirect question, but also with a *wh*-word (Frajzyngier 2001: 379):

(182) ŋ tòn-iy na gol-di nè wéi gà
 1SG ask-3M HYP see-3M COP who Q
 'I asked him who he saw.'

East Dangla (Afro-Asiatic, Chad):

East Dangla embedded questions contain a clause-final interrogative particle *gà*, but also an initial complementiser that consists of a pronoun and *-s* suffix, *ɲà-s*:

- (183) *ɲà* *ìndid-in-tè* *ɲà-s* *no* *ìban-gì-ty* *kàawti* *kédé-èt* *ga*
3SG asked-1SG 3SG-COMP 1SG know-IMPF-3SG.F wordREL X-DEM Q
'They asked me if I knew the language of X' ('language of such-and-such a place').

(Frajzyngier 1996: 221)

Babungo (Niger-Congo, Cameroon):

In Babungo, YNQs have the particle *mū* finally, which may be followed only by the focus marker (Schaub 1985: 8):

- (184) *Làmbí* *táa* *ɲì* *mū?*
Lambi in house Q
'Is Lambi in the house?'

- (185) *à* *yàa* *náysé* *tí* *ɲwé* *fán* *ɲké* *nó* *dù'* *mū*
you P3 tell-IMPF to him as it P4 sit-PFQ
'Did you tell him how it was?'

If an affirmative answer is expected, *mē* is used instead of *mū*. This is apparently a type of tag question, as *mē* is also the particle used with negative clauses (Schaub 1985: 8):

- (186) *ɲwé* *yì-jwí* *mē?*
he PFV-come Q
'Has he come?' (Expected answer = yes)

The questions Schuh classes as tags also employ the particle *mū* (Schaub 1985: 9):

- (187) *sí* *gó* *shó,* *mū* *lēe?*
we.DUAL go thereQ EMPH
'We shall go there, shall we?'

Alternative questions have the particle in each clause. It appears from (188) that the second occurrence is clause-initial (Schaub 1985: 9):

- (188) à gígwía tī kē mū, mū à títəə
 you cut.PROG tree this Q Q you dig.PROG
 'Do you cut the tree or dig it?'

The example of an indirect question in (189) contains the particle, but also *lāa*, glossed as 'that', which appears to be a subordinating complementiser. No information is given on whether either or both are obligatory:

- (189) ηwə bítə tí Lám-bí lāa ηwə yè ηwín wī
 he ask.PFV to Lambi that he.ANAPH see.PFV child his
 mū
 Q
 'He asked Lambi whether he has seen his child.'

Supyire (Niger-Congo, Mali):

Supyire is included in this section although it is not always VO. Supyire copula sentences have the order Subject – Copula – Predicate Nominal/Locative/Dative, and the language is post-positional (Carlson 1990: 410):

- (190) u nyε bagé e
 she be house.DEF in
 'She's in the house'

- (191) ku nyε mīl á
 it be me to
 'It's mine' (lit. 'It is to me')

In non-copula sentences, elements such as indirect objects and predicate nominals follow the verb, as they do the copula, but direct objects precede the transitive verb (Carlson 1990: 411):

- (192) u a kàrè sigé e
 she PERF go bush.DEF to
 'She went to the bush.'

(193) u màha suro shwòhò
 she HAB mush cook
 'She cooks mush.'

Carlson (1990: 321) lists several clause final markers found in Supyire:

(194) *la, bé* YNQ
mé negation
mà negative Q
yε constituent Q
ké locative Q
dé, sá, kè exclamation (loans from Bambara)
yò, yòò politeness, attenuation, listing

Co-ordinators and subordinators may also be clause-final, clause-initial, or both in some cases.

Carlson (1990: 889) states that YNQs can be formed with one of a number of particles. The most common is *la*, which is derived from *làa* 'or':

(195) u sí m̀-̀pà la?
 she FUT FP-come Q
 'Will she come?' (Carlson 1990: 889)

(196) k̀c̀wuun lá?
 monkey Q
 '(Did I hear you say) a monkey?' (Carlson 1990: 896)

However, *wá* can also be used to indicate questions. It is a borrowing from Bambara, in which language it is the most common question marker (Carlson 1990: 889):

(197) pi na ma wá?
 they PROG come.IMPF Q
 'Are they coming?'

gè/kè, also borrowings from Bambara, mean 'of course' and 'for sure', respectively. For some speakers, in Supyire they can also be question particles, presumably as a kind of tag (Carlson 1990: 890):

(198) mu sí ò-pà nùmpañakè?
 you FUT FP-come tomorrow Q
 'Are you coming tomorrow?'

The particle *bé* is used in *wh*-Qs, but without a *wh*-word it too can mark a YNQ.

Furthermore, there are two clause-initial Q-particles that are related: *tàhà*, the most common, has variants *tàhá* and *jàhá*; and *tá* is a shorter form. It too has a variant, *ká* (Carlson 1990: 891):

(199) tàhà mu supyíbíí pì na nyε cyàge kè e?
 Q your people.DEF IND PROG be place.DEF INDEF in
 'Are some of your people someplace (else)?'

In negative YNQs the usual question marker *la* is replaced with *mà*. Negative questions are 'almost always rhetorical' (Carlson 1990: 635), and biased towards a positive response.

According to Carlson, indirect YNQs, for some speakers, 'preserve the older, alternative form of the question marker (*làa* 'or') instead of using the shortened form employed in direct yes/no questions (*la*)' (Carlson 1990: 768):

(200) kà uru nàñi sì kuru òké cyàge
 and this.EMPH man.DEF NARR that.EMPH that.DEM place.def

 shyènrè jwò m̀ì nyíí ná, maá m̀ì yíge nà
 speech say my eye at and.NARR me ask that

 uru ù sà m̀ì yàha mobííge e làa
 he.EMPH he.SUBJUNC go me leave truck.DEF in or

'Then that man told me about that place (lit. said speech of that place to me) and asked me if he should go take (lit. leave) me in the truck.'

However, note that in (200) the question is introduced by the complementiser *na*. (201) shows another embedded question, also introduced by *na*, and with no final question particle. The particle thus appears to be optional (Carlson 1990: 768):

(201) kà u ù m-pá mì yíbé na uru
 and she NARR IP-come me ask that she (EMPH)

ù mì lwóhe sògò làa uru ù
 she.SUBJUNC my water.DEF pour or she (EMPH) she.SUBJUNC

sá jìyìni kan
 go food.DEF give

‘She came and asked me if she should pour my (bath) water or go give the food.’

The languages discussed so far in this section provide data in support of the claim that VO languages generally do not allow a final question particle to mark an embedded question. To add further evidence, there are some languages for which information directly bearing on this issue is not available, but it can tentatively be suggested that they also support the hypothesis.

Engenni (Niger-Congo, Nigeria):

The ‘general question marker’ is sentence-final *à*, which may optionally occur with question intonation. For emphasis, the particle may occur in every clause in the sentence, as in (204) (Thomas 1978: 57):

(202) bhu nà syiène à?
 you INC hear Q
 ‘Are you listening?’

(203) mí wo ku wo ga bhò ka ànya mè à?
 I not.say give you SP you SEQ horse my Q
 ‘Didn’t I tell you that you are my horse?’

(204) mí wo kye bhà à òdùmunàbhuagu ka ànya mè
 I not.say give you Q wolf SEQ horse my

à na bhá tọ avuramu tọ kyê à?
 Q that you take woman take give Q

‘Didn’t I tell you that the wolf to whom you gave the woman is my horse?’

There is also an alternative question marker *sàmù*, which occurs finally in the first clause. If there is only one clause, it indicates that the second alternative is the negative alternative 'or not'. The final marker *a* is optional in alternative questions (Thomas 1978: 57-8):

(205) ọ tọu kpai ânàmù sàmù ọ tọu kpai âfèni
 he will.take feed animals Q he will.take feed birds
 à?
 Q
 'Will he use it to feed the animals or the birds?'

(206) olo ì na nà ì yà sàmù
 friend her the INC again come Q
 'Is her friend coming again or not?'

This is a question-specific marker rather than the disjunction used in declarative alternatives, which are marked in the final clause with *alàgba* 'in case', *ómonenià* 'otherwise' or *ómomo* 'or' (lit. 'It is not not'). The last two have the same intonation as negatives (Thomas 1978: 53):

(207) o sì yi i moṣi mè ómomo o. sì ge. yà
 he will come see me or he will write come
 'He will come to see me, or he will write.'

(208) tọu ânô ómomo bhù. kịdhe oḅho
 take this or you leave hand
 'Take this one or leave it.'

For questions indicating doubt or disbelief the particle *e* can be used (Thomas 1978: 58):

(209) ga bhū fye mè e?
 SP you exceed me Q
 '(He said) you thought you had beaten me, did you? (you haven't!)

Embedded questions are not discussed in detail. The example given is direct speech, but it seems not to require a particle, although it must be remembered that the question particle is optional in main clause questions (Thomas 1978: 58):

(210) edei nà bhine omini èi ga bhụ dhùmò?
 man the ask daughter his SP you will-marry
 'The man asked his daughter, "Will you marry (him)?"'

Fyem (Niger-Congo, Nigeria):

Fyem (SVO) has final question and negative particles, but an initial embedded YNQ subordinator. YNQs are formed with a final low-tone particle *-ya* (after a vowel) or *-a* (after a consonant) (Nettle 1998: 50):

(211) táá b́é-ya
 3PL.PERF come-Q
 'Did they come?'

(212) taa won aré-n-a
 3S.PERF wash clothes-DET-Q
 'Did she wash the clothes?'

To question a particular element, the questioned element takes focus and the particle remains in sentence-final position (Nettle 1998: 50):

(213) méyí taa won aré-n-a
 her.FOC 3S.PERF wash clothes-DET-Q
 'Was it her who washed the clothes?'

(214) ti ŕépdá taméí ní b́ol-í-ya
 2S.PERF sell sheep.FOC or goat-FOC-Q
 'Was it a sheep or a goat which you sold?'

Negation is also formed with a sentence-final particle, *h́éi* (Nettle 1998: 48):

(215) handó á dibin h́éi
 something 3S.IMPF inside NEG
 'There isn't anything inside.'

There is also an initial negative particle, *ba*, borrowed from Hausa. Sentences in which the whole proposition is negated are grammatical with or without it, but sentences in which only one element is negated require the particle (Nettle 1998: 49). The final negative particle also appears to be required:

(220) m-má-kí díí ke
 1SG.PROCL-PROG-go market Q
 'Am I going to market?'

(221) o-tó-né o-rú ke
 1PL.PROCL-FUT-be.able FUT-come Q
 'Can we come?'

No information is given regarding embedded questions. However, the conditional subordinator 'if' appears clause-initially. One can speculate that if it also introduced complement questions, it would presumably also come initially (Kari: 2000: 49):

(222) abá tó-tú kómu ɔljá a-lówu
 they FUT-come if rain FACT NEG-fall
 'They will come if it does not rain.'

Pwo Karen (Sino-Tibetan, China/Burma):

The same can be said for Pwo Karen (SVO):

YNQs have the sentence-final particle *ɤa*. (the dots and dashes indicate tones)

(Kato 2003: 640):

(223) nə- mə- thaiN_ ɤa.
 2SG IRR return Q
 'Are you going back?'

Wh-questions have a different sentence-final particle, *lɛ*. (Kato 2003: 640):

(224) ʔəjo_ (mwɛ=) chənɔ: lɛ.
 this be what Q
 'What is this?'

'If' appears clause-initially in conditional clauses, and the same speculation as we made for Ogbronuagum can be made for Pwo Karen.

- (225) ʔəwe. ʔe_ lə- ʔaN: mɪ_ ba: nɔ:, jə_ mə- ʔaN:
 3SG if NEG eat rice NEG that 1SG IRR eat
 'If he doesn't eat the rice, I will eat.' (Kato 2003: 640)

However, although many subordinators occur clause-initially in Pwo Karen, some adverbial subordinators may be clause-final. In addition, the adverbial clause is usually placed before the main clause, as in (225).

Tetun (Austronesian, East Timor):

In Tetun (Tetum) the marker of a YNQ is the negation of the clause, which can be the full negated clause, *ka lale* 'or not' or *lale* 'no, not'. Alternatively, intonation alone may mark the utterance as a question (Van Klinken 1999: 211-2):

- (226) ...at sei sukat nia lai: nia na'in ká na'in ha'i?
 IRR still measure 3S first 3S noble or noble not
 '(I) would like to test him first: is he a noble, or isn't he a noble?'

- (227) n-ák "Bele? Ita ruas sukat malu bele ká lale?".
 3S-say can 1PL two measure each.other can or no

n-ák "Bele".
 3S-say can

'(He) said "Can (we)? Can we two test each other, or not?". (She) said
 "(We) can".'

- (228) ó m-akara lale?
 2S 2S-like no
 'Do you like (him or) not?'

- (229) ó la bá sekola ká?
 2S not go school or
 (Said to child playing:) 'Didn't you go to school?'

- (230) n-ó ha'i husu?
 3-exist not request
 'Aren't there any questions?' (Said when it appeared that there were none)

Again, a question subordinator would be likely to be initial, as are all conjunctions and subordinators in Tetun (Hull 1999: 12):

(231) *Se imi ba*
[No gloss]
'if you go'

Once again, it must be stressed that these remarks regarding Ogbroonuagum, Pwo Karen and Tetun are speculative and further investigation is required to verify or contradict them.

The languages discussed in this section are all VO with final question particles, and all of them fail to allow the question particle to appear in embedded questions. Many of the published grammars give scant information on the topic, but virtually all of the VO...Q languages I looked at fall into this category. However, there are possibly two languages that are exceptions to the generalisation in allowing precisely this construction. These are discussed in the next section.

Final particles in VO languages (VO...Q): Languages which are exceptions to the generalisation

This section gives details of two languages that appear to be exceptions to the generalisation made earlier, namely that final particles in VO languages are not permitted to appear in embedded questions.

Thai (Tai-Kadai, Thailand):

YNQs in Thai are marked with one of the following final particles, with certain restrictions on their use in various types of question (Iwasaki & Ingkaphirom 2005: 279):

(232) *mǎy*
rǎu-plàaw
rǎu-yaŋ
rǎu

In fact, there are around 25 yes/no question particles that may be used in Thai, but they are combined particles including either *mǎy* ‘not’ or *rǎu* ‘or’. These two are considered to be the ‘basic’ question particles in Thai (Somphob Yaisomanang, 2012).

(233) yàak cà khuy tǔo máy
 want NCM talk continue Q
 ‘Do you want to continue talking?’ (Iwasaki & Ingkaphirom 2005: 280)

(234) kháw pen fɛɛn khun-àphíchâat rǔ-plàaw
 3 COP girlfriend TL-Apichat Q
 ‘Is she Mr. Apichat’s girlfriend?’ (Iwasaki & Ingkaphirom 2005: 283)

There are also tags (Iwasaki & Ingkaphirom 2005: 287):

(235) tèe khǎŋ-thíi-léew kin sǐi-khǎaw dii khên chây-máy
 but last.time eat colour.green good ascend/ASP Q
 ‘But the last time, you took the green (medicine), and you got better, right?’

YNQs with particles or tag questions can be embedded under verbs like *rúu* ‘know’ and *khaw-cay* ‘understand’ (Iwasaki & Ingkaphirom 2005: 288-9):

(236) mây rúu mǎankan khun pen kaphó rǔ-plàaw
 NEG know same 2 COP ulcer Q
 ‘(The doctor said,) “I don’t know if you’ve got a peptic ulcer or not”.’

(237) mây rúu wâa looŋbaan cà pít rǔ-plàaw
 NEG know COMP hospital CM close Q
 ‘I didn’t know whether the hospital would be closed.’

In (238) *mây sâap wâa* literally means ‘I don’t know that...’, but means roughly ‘I am wondering’ here (Iwasaki & Ingkaphirom 2005: 289):

(238) mây sâap wâa mii khay pùay khay taay máy khá
 NEG know say/COMP have who sick who die Q SLP
 ‘I wonder if you had anyone sick or a death in the family.’

Chrau (Austro-Asiatic, Vietnam):

YNQs in Chrau have rising intonation, and also an optional question particle sentence-finally. The question particles are *hâng*, *dǎng*, *ha* and *hôm*. In rhetorical questions *ha* is used, meaning something like ‘is that so?’. It indicates surprise or ‘belligerence’ (Thomas 1971: 181):

(239) mai ji hà?
[No gloss]
So you are sick?

(240) mai sa piêng hà?
[No gloss]
I see you are eating?

(241) mai êq ôp hà?
[No gloss]
So you refuse to work, eh?

Hôm is used to enquire whether an action has occurred yet:

(242) mai sa piêng hôm?
[No gloss]
Have you eaten rice yet? (greeting).

Thomas notes that *hang* and *dǎng* ‘appear to be interchangeable’, although *dǎng* is ‘perhaps the more forceful’ (1971: 180). It is used for emphasis in questions. In negatives *dǎng* also functions as a negative reinforcer, and it is the indirect question marker (Thomas 1971: 100):

(243) mai sên nễh gễh dǎng
[No gloss]
‘You see if he has it or not.’

These two languages, Thai and Chrau, require further explanation. For Chrau, one point to note is that given the emphatic character of *dǎng*, and the fact that it is also the negative particle, it may not be a question particle as such. The particle in Thai, however, is indisputably the standard way to mark yes/no questions. It appears to be a genuine counter-example (in fact, the only clear-cut

counter-example) to the generalisation argued for in this section, and as such is discussed at length later in this thesis.

2.4. Conclusion

This chapter has shown that there is an asymmetry in the behaviour of question particles. Although data is limited, there appears to be a prohibition on the possibility of final particles in VO languages marking embedded questions (or a very strong tendency). From the graphs below this can be seen quite clearly. Figure 2 shows the use of question particles in embedded questions in these languages, and illustrates the fact that it is very restricted:

Figure 2. Occurrence of final polar question particles in embedded questions in VO languages (number of genera).²⁹

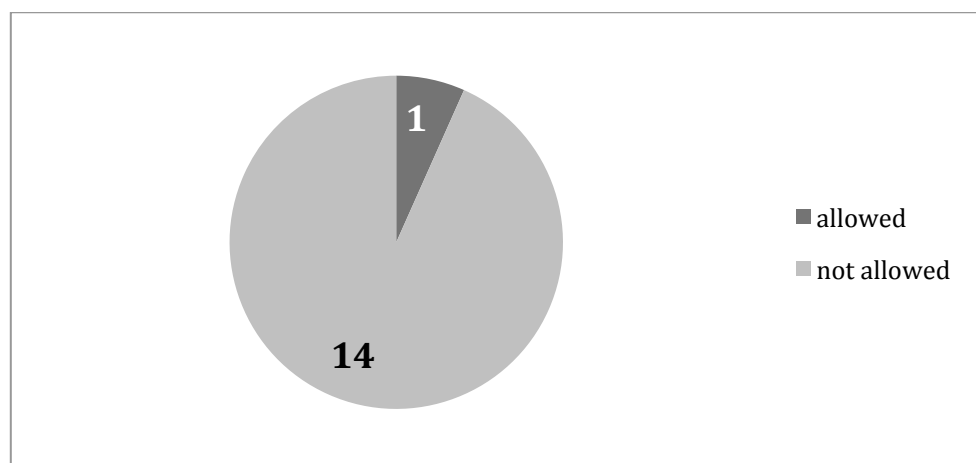


Figure 3 shows the same for the other types of question particle, which does occur in embedded questions in the majority of languages examined here:

²⁹ Note that Chrau is not included in this graph. If it is taken to allow an embedded question particle, the number increases from one to two.

Figure 3. Occurrence of polar question particles in embedded questions in OV languages and VO languages with initial particles (number of genera).

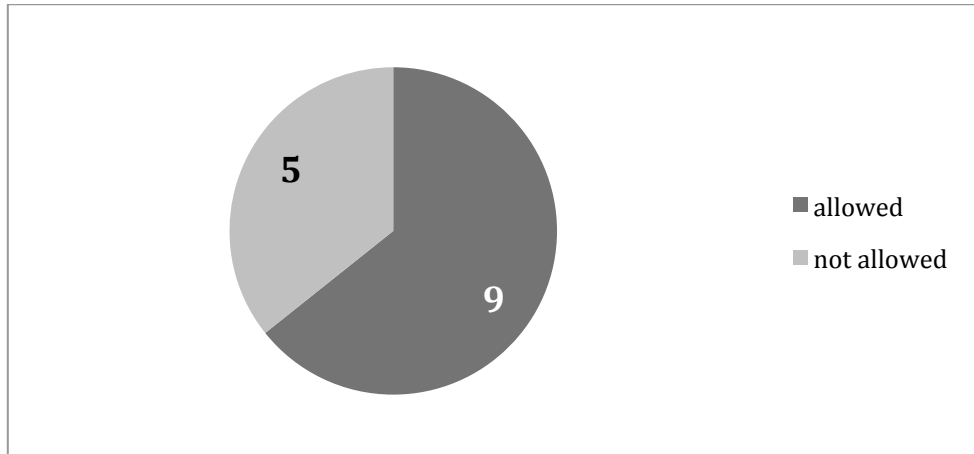


Table 7 shows the figures for each condition:

Table 7. Number of genera allowing question particles in embedded questions.

	Allowed	Not allowed
VO...Q	1 (or 2)	14
Other	9	5

It must be noted that total numbers are very low. However, there is a clear difference between the two types of particle. This section has provided evidence that, barring the counter-example of Thai (and possibly also Chrau) which is discussed in Chapter 7, there is evidence that final question particles in VO languages are not permitted to appear in embedded questions, whereas there is no such restriction on other question particles. Some initial particles are also not found in embedded clauses but this does not affect the statement that there is an asymmetry in the data.

This chapter has provided empirical word order evidence that VO...Q is common, and that it differs from other word orders in not permitting the final particle to mark embedded questions. In the next chapter, it is shown that this word order is also problematic for the Final-Over-Final Constraint, which is otherwise strongly supported. These two facts taken together give a strong motivation for

explaining the data presented in this chapter, and a proposal that explains the asymmetry discussed here is defended in Chapter 6.

Chapter 3. VO...Q is a FOFC Violation

This dissertation seeks to explain the linguistic asymmetry described in the previous chapter, namely that final polar question particles occur in VO languages far more commonly than they are expected to, given word order generalisations. The asymmetry is a theory-external, empirical fact and interesting in its own right: why should particles behave differently from other syntactic elements, in such a widespread way? A further problem arises if we try to map the word order onto syntactic structure, however: it appears to be a violation of a constraint that is otherwise well-supported, the Final-Over-Final Constraint (FOFC; Biberauer, Holmberg & Roberts 2007; Biberauer, Holmberg & Roberts 2008; Biberauer, Holmberg & Roberts 2012; Biberauer, Newton & Sheehan 2008; Biberauer and Sheehan 2012; Sheehan 2009 i.a.). This chapter describes FOFC and shows that it is well-motivated, as well as illustrating the problem posed by the class of polar question particles that present an apparent exception to FOFC.

Although in Chapter 1 I described FOFC as a constraint on word order, it is in fact emphatically a hierarchical constraint, appealing to the notions of headedness, extended projections and feature specification in its explanation. Nevertheless, hierarchical structure must be linearised in order to be produced, and forbidden structures very often result in the absence of particular word orders. It was in order to explain these absences that FOFC was originally formulated (Holmberg 2000).

Crucial in explaining the presence of very many final polar question particles in VO languages is the following consideration: the constraint is a constraint over the possible hierarchical structure of language, and as such word orders are permitted that may appear to violate the constraint; as long as they do not actually do so, they do not fall within the remit of FOFC. Other operations may take place in a derivation that obscure the original structure, leaving an utterance with an apparently FOFC-violating structure. If the structure derived by those operations does not in fact violate FOFC, the linear string may

nevertheless be identical to one in which the constraint is ignored. For example, Biberauer (2010) and Biberauer & Walkden (2010) point out that ‘231’ verb clusters are found in several varieties of Germanic, where 231 indicates that the highest verb in the cluster is final in linear order:

(244) *Afrikaans (Indo-European, South Africa):*

...dat hy die medisyn kon₂ drink₃ het₁
 that he the medicine could.INF drink.INF have
 ‘... that he could drink the medicine.’ (Biberauer 2010: 8, ex.18)

This word order violates FOFC because the highest verb, *het*, is head-final and that which it immediately dominates, *kon*, is head-initial. However, Biberauer (2010: 13) shows that certain ‘projection peculiarities’ indicate that the auxiliaries involved do not project and are not part of the same projection line as the lower verbs. This means that FOFC as defined in (245) below cannot apply, where (245b) is the requirement that the elements be part of the same extended projection. Linear orders that superficially violate FOFC may not in fact violate the hierarchical constraint, and an explanation of question particles of this type is suggested in §3.2.2 and expanded upon in Chapter 6.

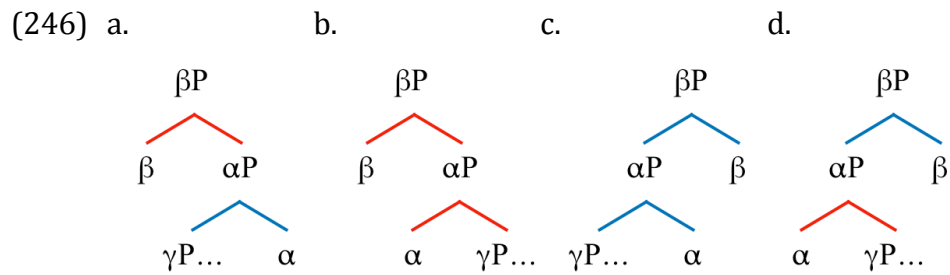
FOFC is defined as in (245) (Biberauer, Holmberg & Roberts 2012: 35):

(245) * $[\beta P [\alpha P \alpha \gamma P] \beta]$
 Where

- a) α is a complement of β
- b) α and β have the same value of $[\pm V]$

If βP is a head-final phrase and βP immediately dominates αP , then αP cannot be head-initial. This applies only if αP and βP share the same value of $[\pm V]$: that is, they are both verbal or both nominal elements. This definition is expanded and justified in section 3.2.1. The construction that is ruled out by FOFC is that in (246d):³⁰

³⁰ Note that trees are shown for clarity with base-generated head-final phrases. This should not be taken as an indication of the analysis of such phrases; I assume that head-final structures are derived by movement in line with the LCA.



(246a) and (b) are both ‘harmonic’: they are consistently head-initial (a) or head-final (b). This is the preferred option, found in the majority of the world’s languages. (246c) and (d) are ‘disharmonic’: they contain a mixture of head-initial and head-final phrases. However, FOFC states that while (246c) is permitted and found in a sizeable minority of constructions throughout the world’s languages, (246d) is not found.

This chapter proceeds as follows: first, data are presented to demonstrate that FOFC is a robust generalisation that holds across a wide range of contexts. Biberauer, Holmberg & Roberts (2012) show that it is valid in morphology as well as syntax, and in diachronic as well as synchronic terms. Different language types are subject to the constraint, and it holds for different domains within a given language. Biberauer, Holmberg & Roberts’s (2012) formal analysis of the constraint, based on independently-motivated syntactic principles, is given in section 3.2, as well as some possible explanations of the data. Finally, alternative explanations for the distribution of question particles are discussed in section 3.3.

3.1. Empirical evidence for FOFC

Evidence for FOFC comes in three main forms: typologically, some word orders are unattested or vanishingly rare; languages with variable word order consistently ban the FOFC-violating order; and language change appears to occur in the direction that conforms to FOFC.

3.1.1. *Unattested word orders*

**[V O]Aux*

Some word orders are simply not found among the languages of the world, or are extremely rare compared to other ordering combinations of the same words. To take Biberauer, Holmberg & Roberts's most well-known example, the order of verb, object and auxiliary verb displays just this characteristic.³¹ The three elements can be ordered in several ways: the verb may precede or follow its complement (object), and the auxiliary may precede or follow its VP complement, giving the six logically possible orders shown in (247):

- (247) AuxVO
AuxOV
*VOAux
VAuxO
OAuxV
OVAux

Of these six orders, five are attested in various languages. Biberauer, Holmberg & Roberts use Germanic varieties to exemplify:

OVAux: head-final in AuxP and VP, found in German, Dutch, Afrikaans, Yiddish, German, Dutch/Flemish and Afrikaans dialects, Old English and Old Norse (Biberauer, Holmberg & Roberts 2012: 6).

AuxVO: head-initial in AuxP and VP, found in modern English, Old English, Dutch and various North Germanic varieties (Biberauer, Holmberg & Roberts 2012: 6).

AuxOV: 'verb projection raising', with head-initial AuxP over head-final VP, or 'inverse FOFC', found in West Flemish, Zürich German, Old English, Middle Dutch, Old High German, Old Norse, and non-standard varieties of many Germanic languages (Biberauer, Holmberg & Roberts 2012: 6–7).

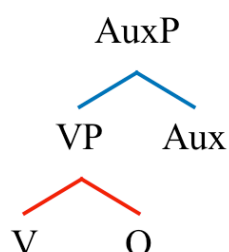
³¹ I follow Biberauer, Holmberg & Roberts in using the term 'auxiliary' and the abbreviation AuxP, as the facts cover a number of different auxiliary-like elements, although notably only those which are inflected. Elements such as aspect particles which are uninflectable seem to have the same resistance to FOFC as question particles.

OAuxV: ‘verb raising’, found in Dutch, Old English, Afrikaans, and non-standard West Germanic varieties (Biberauer, Holmberg & Roberts 2012: 7–8).

VAuxO: ‘object extraposition’, found in Dutch, Old English, Old Norse and German (where the extraposed element is a PP or CP) (Biberauer, Holmberg & Roberts 2012: 8).

Biberauer, Holmberg & Roberts note that some of these orders can be argued to be derived in different ways, but none of the derivations results in a violation of FOFC. These five orders are all well-attested (VAuxO is less common, but still found in some varieties). However, one of the six orders of these three elements, marked with an asterisk in (247), is not found in any of the varieties of Germanic (or, it is predicted, in any language). This is the VOAux order representing the FOFC-violating structure, where a head-final AuxP dominates a head-initial VP:

(248) *



Biberauer, Holmberg & Roberts note that the gap is found in such unrelated varieties as Finnish, Latin, Basque and Northern Saami. Similarly, VOAux is not found in Kaaps, a variety of Afrikaans strongly influenced by contact with English, showing that FOFC still applies in contact situations, and it is lacking in Italian Sign Language, indicating that it applies in the signed modality as well as spoken³² (Biberauer, Holmberg & Roberts 2012).

³² Sign languages provide other problems for the analysis of questions: for instance, sign languages appear to have rightwards *wh*-movement, unlike spoken languages. This issue is left aside for the present.

***[C TP]V**

Sheehan (2012) and Biberauer & Sheehan (2012) show that there is also a FOFC gap in the placement of embedded CPs. Many diverse OV languages, which would be expected to have preverbal CP complements, have obligatory postverbal ('extraposed') CPs where the CP is head-initial. This is the FOFC-violating order in (249), in which a head-final VP immediately dominates a head-initial CP:

(249) *[_{VP} [_{CP} C TP] V]

This obligatory extraposition is found in German, Persian, Mangarrayi, Iraqw, Neo-Aramaic, Sorbian, Anywa and Pări (Sheehan 2012: 8). Dryer (2008) notes that of 31 OV languages, only two do not have either [[TP C] V] or [V [C TP]], the two orders permitted according to FOFC.³³ An example illustrating the extraposition phenomenon is given from German in (250) and from Persian in (251):

(250) ...weil er gesagt hat [dass Schnaps gut schmeckt]
because he said has that schnapps good tastes
'...because he said that schnapps tastes good.'
(Büring & Hartmann 1997: 32, cited in Biberauer & Sheehan 2012)

(251) u goft [ke qaza xoshmaze ast]
3SG say.PAST.3SG that food good.taste be
'He said that the food tastes good.' (Yalda Kazemi Najafabadi, p.c.)

The usual complement position in German/Persian is preverbal, but the presence of the initial complementiser *dass/ke* in the complement CP requires that the CP be extraposed in order to avoid a FOFC-violation between the head-final VP and the head-initial CP it dominates. This *[C TP] V order is another typological gap in the possible word order combinations. FOFC therefore holds across clauses (this requires a modification of the notion of Extended Projection,

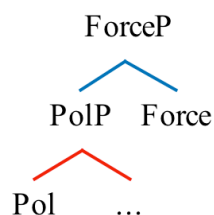
³³ These two languages are Khoekhoe (Khoisan, Namibia), which has the inverse-FOFC order [V [TP C]], and Harar Oromo (Afro-Asiatic, Ethiopia), which has [[C TP] V].

discussed in section 3.2.1). Although the inverse FOFC order ([V [TP C]], or a head-final CP complement of a head-initial VP) is also unattested, this too is a FOFC effect. Biberauer, Holmberg & Roberts (2012) argue that as a VO language cannot have final complementisers, as discussed above, any language that has head-final Cs would be OV and the inverse FOFC configuration would not arise. However, there is nothing in FOFC to prevent a language from having VO in main clauses and an initial complementiser, giving the [V CP] order, and OV in sub-clauses, with final C, giving [V [TP C]] or inverse FOFC. This would entail that C in main clauses is initial while the C in sub-clauses is final, but that is by no means impossible. Something similar seems to be true of Yosondua Mixtec (cf. exx. (167)-(168) in Chapter 2), which displays the opposite ordering facts: it has a question particle in final position in main clauses but initial position in sub-clauses. It may be that it is simply vanishingly rare to have consistently head-initial main clauses and consistently head-final sub-clauses.

***[Q TP]C**

Biberauer, Newton & Sheehan (2009b), following Davison (2007), note that the FOFC gap is evident in the allowed combinations of complementiser and polarity marker (i.e. question particle). Among the Indo-Aryan languages, many have both such elements and they may be initial or final. However, where the polarity marker is initial, the complementiser may not be final. This is a FOFC gap if the polarity head is lower than the complementiser, as is generally suggested: for instance, Rizzi (2001) places complementisers in Force and question heads in IntP, below ForceP. (252) shows the disallowed structure for these heads:

(252) *_{[ForceP [PolP Pol [...]] Force]}



Biberauer, Newton & Sheehan illustrate with examples from Hindi-Urdu and Marathi. Hindi-Urdu has an initial question particle (termed ‘polarity marker’ in Biberauer, Newton & Sheehan (2009b) and glossed as POL), but final complementisers comparable to those found in closely-related languages are not grammatical:

(253) *kyaa* aap wahaaN aa-be-Ngii?
 POL you there go-FUT-2PL
 ‘Are you going there?’ (Davison 2007:182)

(254) *use [[*vee aa rahee haiN*] *yah/ kah-kar*] maalum hai
 3SG-DAT 3PL come PROG are this/ say-PRT known is
 ‘He/she knows [that they are coming].’
 (Davison 2007: 178, cited in Biberauer, Newton & Sheehan 2009b: 702)

Marathi differs from Hindi-Urdu in having a final question particle/polarity head, and it allows both initial and final complementisers:

(255) [[to kal parat aalaa *kaa(y)*]
 he yesterday back come.PAST.3M.SG POL

mhaaNun/asa] raam malaa witSaarat hotaa
 QUOT/such Ram I.DAT ask-PROG be.PAST.3M.SG

‘Ram was asking me [whether/if he came back yesterday].’

(256) raam maalaa witSaarat hotaa [ki to kal parat
 Ram I.DAT ask.PROG be.PAST.3M.SG that he yesterday

 aalaa *kaa(y)*
 back come.PAST.3M.SG POL

‘Ram was asking me [whether/if he came back yesterday].’

(Davison 2007: 184, attributed to R. Pandharipande, cited in Biberauer, Newton & Sheehan 2009b: 702)

Again, the structure not found in any of these languages (a final complementiser immediately dominating an initial question particle) is the one that FOFC prohibits, and Biberauer, Sheehan & Newton (2010) cite Davison (2007), who

shows that this pattern is unattested in the South Asian area. Biberauer, Sheehan & Newton (2010) further argue that the pattern extends to all languages using data from WALS:

Table 8. Genera (languages, families) with initial/final C and initial/final Pol.

(Adapted from Biberauer, Sheehan & Newton 2010: 26, who refer to data from Dryer 2005c, 2005d)³⁴

	Initial C	Final C
Initial Pol	35 (72, 13)	3 (4, 3)
Final Pol	40 (74, 16)	33 (45, 20)

Although there are languages listed from three genera with the FOFC-violating order (Tacana and Ese Ejja (Tacanan), Gavião (Tupi) and Resígaro (Arawakan)), Biberauer, Sheehan & Newton (2010) note that these four languages also have clausal nominalisation, which means that FOFC does not apply. It is only relevant when the two heads are both either verbal or non-verbal, as discussed in section 3.2 below, and complementisers are taken by Biberauer, Sheehan & Newton to be verbal.

Empirical data show, therefore, that there are cross-linguistic gaps that fit with the structure ruled out by FOFC across a wide range of categories.³⁵ In the next section, it is shown that these gaps also occur within a single language if that language allows variable word order.

3.1.2. Gaps in variable word order languages

Many languages have variable word order, allowing several combinations. However, these languages do not exhibit all logically possible word orders, instead lacking just the order that represents the FOFC-violating structure. Finnish is one such language.

³⁴ Page numbers for Biberauer, Sheehan & Newton (2010) throughout refer to the version available at [http://research.ncl.ac.uk/linearization/Biberauer%20Newton%20Sheehan%20CCG%20paper%20with%20trees\[1\].pdf](http://research.ncl.ac.uk/linearization/Biberauer%20Newton%20Sheehan%20CCG%20paper%20with%20trees[1].pdf)

³⁵ See Myler (2009) for arguments that FOFC also applies to morphological processes.

As well as prohibiting the VOAux order ruled out by FOFC, Holmberg (2000) and Biberauer, Holmberg & Roberts (2012) note that Finnish displays FOFC-compliance in the nominal domain. Finnish generally has postpositions, but some, such as *yli* ‘across’ can be pre- or post-positional (Biberauer, Holmberg & Roberts 2012: 21):

(257) *yli* *rajan*
 across border

(258) *rajan* *yli*
 border across
 ‘Across the border’

Furthermore, if a noun has a PP complement or adjunct, it is post-nominal (Biberauer, Holmberg & Roberts 2012: 20):

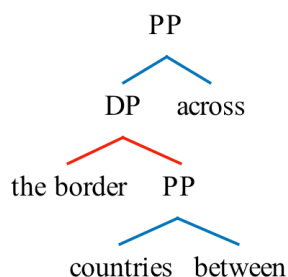
(259) *raja* *maitten* *välillä*
 border countries between
 ‘the/a border between the countries’

The noun within a PP may also have a PP complement or adjunct, as in (260):

(260) [_{PP} across [_{DP} the border [_{PP} between countries]]]

Combining the fact that Finnish has postpositions with the fact that PP complements and adjuncts follow the noun, the expected order would be as in (261):

(261) [_{PP} [_{DP} the border [_{PP} countries between]] across]



However, this is the structure ruled out by FOFC (where PP is head-final and DP is head-initial, and the higher PP immediately dominates the DP), and in fact those adpositions that vary between being pre- and post-positions must be prepositional in such configurations (Biberauer, Holmberg & Roberts 2012: 21):

(262) yli [rajan [maitten välillä]
 across border countries between
 ‘across the border between the countries’

(263) *[rajan maitten välillä] yli
 border countries between across

Finnish and Basque both provide further evidence for the *VOAux gap discussed above: they have variable order of object and verb, and verb and auxiliary, but as in Finnish PPs, they do not permit just the order that represents the structure that FOFC describes. As briefly described in Chapter 1, Biberauer, Holmberg & Roberts (2012) cite Haddican (2004), who notes that in Basque the default word order is OV, but VO is also permitted. The auxiliary follows the VP in affirmative contexts but precedes it in negative contexts. Therefore, both AuxP and VP can be either head-initial or head-final. However, while both OV and VO are freely available in negative contexts, in which the AuxP is head-initial, only OV is permitted in affirmatives, which have a head-final AuxP. Once again, the two harmonic structures and the inverse-FOFC structure are found, but the FOFC-violating structure is not. The data are repeated here for convenience (Haddican 2004: 116):

(264) Jon-ek ez dio Miren-i egia esan [Aux [O V]]
 Jon-ERG not AUX Miren-DAT truth say-PERF
 ‘Jon has not told Miren the truth.’

(265) Jon-ek ez dio esan Miren-i egia [Aux [V O]]
 Jon-ERG not AUX say-PERF Miren-DAT truth
 ‘Jon has not told Miren the truth.’

(266) Jon-ek Miren-i egia esan dio [[O V] Aux]
 Jon-ERG Miren-DAT truth say-PERF AUX
 ‘Jon has told Miren the truth.’

(267) *Jon-ek esan Miren-i egia dio *[[V O] Aux]
 Jon- ERG say-PERF Miren-DAT truth AUX

Language facts such as those described here for Basque and Finnish supplement the discovery of cross-linguistic gaps. Word orders that are consistently absent from languages are indicative of the generalisation described by FOFC. When a language could have the FOFC-violating order but avoids it, this is significant and shows that there is a genuine syntactic asymmetry. The next section provides further, diachronic, evidence for FOFC.

3.1.3. *Language change*

FOFC is a synchronic constraint, but its effects can also be observed diachronically. As a syntactic universal, it is expected to be in effect continuously and in all forms of a language, past as well as present (there is no reason to think that anything has caused FOFC to come into existence recently; if it is part of UG it should be invariant). Specifically, any change that occurs in a language should not violate the constraint at any point during the change. With respect to FOFC, this entails that word order change must proceed in a particular direction: change from head-final to head-initial must begin with the highest head, and change from head-initial to head-final must begin with the lowest head. A consistently head-final language can only change to full or partial head-initiality beginning with the CP becoming head-initial. If any lower head changed first, there would be a FOFC-violation where that head is immediately dominated by a higher phrase that has remained head-final:

(268) [[[O V] T] C] → [C [[O V] T]] → [C [T [O V]]] → [C [T [V O]]]
 (Biberauer, Newton & Sheehan 2009b: 711)

(269) [[[O V] T] C] → *[[[V O] T] C] (violation between V and T)

(270) [[[O V] T] C] → *[[[T [O V]] C] (violation between T and C)

Conversely, a language that is consistently head-initial would first of all see the VP become head-final. If any higher head changed first, there would be a FOFC-violation where that head dominates a phrase that remains head-initial:

(271) [C [T [V O]]] → [C [T [O V]]] → [C [[O V] T]] → [[[O V] T] C]
 (Biberauer, Newton & Sheehan 2009b: 711)

(272) [C [T [V O]]] → *[[T [V O]] C] (violation between T and C)

(273) [C [T [V O]]] → *[C [[V O] T]] (violation between V and T)

This strong prediction on the direction of word-order change is supported by what evidence Biberauer, Newton & Sheehan (2009b) have been able to find, as detailed in the next section.

Top-down change (from head-final to head-initial)

Biberauer, Newton & Sheehan (2009b) examine the history of Germanic, which was originally head-final, meaning that the change towards head-initial structure (and to virtually full head-initiality in the case of English) should have begun in CP and progressed downwards. This is true of English, Yiddish and Icelandic (Biberauer, Newton & Sheehan 2009b: 715).

The earliest attested forms of Germanic already have head-initial CPs, which can occur with both head-initial and head-final TPs and VPs. This conforms to FOFC in the sense that FOFC does not constrain head-initial phrases. Below the level of CP, Biberauer, Newton & Sheehan note that a head-initial TP is similarly unconstrained, but a head-final TP can only occur with a head-final VP (as already noted above, in relation to the *VOAux gap). Furthermore, variation between initial and final headedness continued in the VP until Late Middle English, while TP became head-initial by the early Middle English period (and CP, as noted above, was head-initial even in Old English).

Latin, too, was a largely OV language that had head-initial CPs even in the earliest attested forms. TP was (as far as it is plausible to say, from the evidence of the very few auxiliaries found in the language) variable but largely head-final. In modern Romance languages such as French, the TP and VP are both head-initial, and Biberauer, Newton & Sheehan argue that the change occurred in the order predicted by FOFC (that is, TP became head-initial first, followed by VP). They cite Bauer (1995: 106), who claims that the change from Latin to French proceeded as in (274)–(276), with the auxiliary (which developed from lexical ‘have’) first becoming initial, and then the verb following suit later on:

(274) epistulam scriptam habeo / je possède une lettre
letter.ACC written.ACC have.1SG I possess a letter
 écrite
 written
 ‘I possess a written letter.’

(275) habeo epistulam scriptam / j’ai une lettre écrite
have.1SG letter.ACC written.ACC I-have a letter written

(276) j’ai écrite une lettre
I-have written a letter
 ‘I wrote a letter.’

This evidence is lacking in detail, hindered by the fact that Latin had almost no auxiliary verbs with which to discern the head placement in TP. In the examples above, the verb *habeo* is undergoing grammaticalisation from a verb of possession to the perfect auxiliary, which further confounds the issue. However, there is no evidence here to refute FOFC.³⁶

Bottom-up change (from head-initial to head-final)

Biberauer, Newton & Sheehan (2009b) find evidence that Ethiopian Semitic has changed in the other direction, from head-initial to head-final, and it too has changed according to the prediction made by FOFC. The earliest attested

³⁶ See also Ledgeway (2012) on the change from Latin to Romance.

Ethiopian Semitic language is Ge'ez, which is now extinct, and it was 'predominantly [and typologically] head-initial', with VSO unmarked word order (2009b: 718). All of the modern Ethiopian Semitic languages are head-final, with SOV word order. Biberauer, Newton & Sheehan examine the modern varieties and argue that they are at different stages of change, with some (Tigre and Tigrinya) allowing both head-initial and head-final CPs, some (Amharic) with complementisers prefixed to the final verb, and some (Harari) with clause-final complementisers. Biberauer, Newton & Sheehan argue that this is evidence for change along FOFC-prescribed pathways because the VP and TP are already fixed in head-final order and variation occurs only in CP, and because the variety that has had most contact with the influential variety of Cushitic (Harari) has become fixed in the CP as well, indicating a pathway of change along which the languages are at different stages.

As well as word order change, FOFC restricts the borrowings of languages. It is predicted that an element cannot be borrowed into a language if it would lead to a FOFC violation in that language. This is illustrated with examples from Turkish, a strongly OV language. Biberauer, Newton & Sheehan (2009) note that, although generally complementisers are head-final in Turkish, some dialects have borrowed an initial *ki* from Persian. The examples in (277)–(279) show that complement clauses are preverbal if they lack an initial complementiser, but must be extraposed (postverbal) when they contain the initial complementiser:

(277) (ben) [siz-in Ankara-ya git-tiğ-iniz]-i duy-du-m
 I you-GEN Ankara-DAT go-NOM-POSS-2PL-ACC hear-PAST-1SG
 'I heard that you went to Ankara.'

(278) biz [sen-Ø Ankara-ya git-ti-n] san-dı-k
 we you-NOM Ankara-DAT go-PAST-2SG consider-PAST-1PL
 'We consider you to have gone to Ankara.'

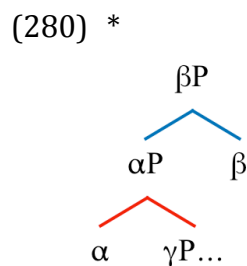
(Özsoy 2001: 216–17, cited in Sheehan 2012: 9)

- (279) anla-dı-m [ki onun bir derdi
understand-PAST-1SG that 3SG.GEN one problem.POSS.3SG
var]
exists
'I realised that he had a problem.'
(Haig 2001: 201, cited in Sheehan 2012: 9)

In this case, although the initial complementiser was borrowed, its introduction has altered the position of the elements with which it appears according to the constraint set out in FOFC.

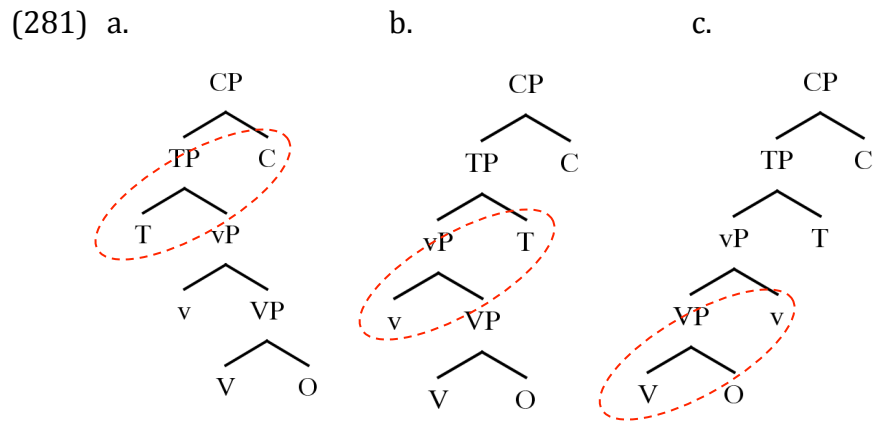
3.1.4. VO...C, question particles and the apparent FOFC-violation

This section has shown that there is a wide range of evidence that there is a linguistic asymmetry in the distribution of initial and final phrases which can be expressed as FOFC, or $*[\beta_P [\alpha_P \alpha \gamma_P] \beta]$:



Not all of the evidence for this asymmetry has been discussed in this section: for instance, Julien (2002) gives evidence for a cross-linguistic lack of $*[[Asp V] T]$. There is one further FOFC gap not discussed above, which is the most important with respect to this thesis: the lack of final complementisers in VO languages. FOFC means that a final complementiser in C^0 (or, on a split CP analysis, a final head within the CP domain such as $Force^0$, or Pol^0 as assumed by Biberauer, Newton & Sheehan above) cannot occur with a head-initial phrase as its complement. This has implications for the whole clause, as there is a trickle-down effect: even if FOFC is respected between the CP and TP, a head-final CP means that every phrase below it, even those not immediately dominated by it,

must be head-final. If any phrase in the structure is head-initial, there is a FOFC-violation between that phrase and the head-final phrase above it:



(281a) shows a head-final CP with a head-initial TP, so FOFC is immediately violated between these two phrases. In (b), there is no FOFC-violation between CP and TP, which are both head-final, but vP is head-initial and a FOFC-violation occurs between it and TP. In (c), the violation is between vP and VP, the former of which is head-final and the latter head-initial.

This means that final complementisers do not occur in VO languages, an observation made by Hawkins (1990) and Dryer (1992), among others. We do, however, find all of the other possible word order combinations: final complementisers can freely occur in OV languages (the harmonic head-final structure), and initial complementisers are readily found in VO languages (the harmonic head-initial structure). Initial complementisers in OV languages (the inverse FOFC order) are also found, meaning that only the FOFC-violating order is lacking cross-linguistically:

(282) *Japanese, OV with final complementiser:*

Bill-ga [CP [TP Mary-ga John-ni sono hon-o watasita] to]
 Bill-NOM Mary-NOM John-DAT that book-ACC handed that
 itta (koto)
 said (fact)

‘Bill said that Mary handed that book to John’

(Fukui & Saito 1998:443, cited in Biberauer, Holmberg & Roberts 2012:

16)

(283) *English, VO with initial complementiser:*
I know *that* you stole my plans for world domination.

(284) *Latin, OV with initial complementiser:*
Ubii Caesarem orant [_{CP} *ut* sibi parcat]
Ubii-NOM Caesar-ACC beg-3PL-PRES C selves-DAT spare-3SG-SUBJ.PRES
'The Ubii beg Caesar to spare them'
(Caesar, *Commentarii de bello Gallico*. Cited in Vincent 1987: 66)

This also means that if, as is generally assumed (and see Chapter 4 for discussion), question particles are heads in the CP, they also should not occur in VO languages as this would be precisely the violation of FOFC shown in (281). As shown in the previous chapter, there is no such restriction and question particles constitute the major class of counterexamples to FOFC.

In the next section, the theoretical explanations for FOFC put forward by Biberauer, Holmberg & Roberts are discussed, followed by a discussion of how question particles might be dealt with in a FOFC-compliant way. The alternative explanations given by other authors to explain the same data are discussed in section 3.3.

3.2. Biberauer, Holmberg & Roberts (2012)'s FOFC

Because FOFC constrains head-final phrases, Biberauer, Holmberg & Roberts (2012) argue that head-finality is more marked than head-initial order. This links FOFC to the Linear Correspondence Axiom (LCA, Kayne 1994), which implies that head-final order is more marked because it requires movement to derive it, whereas head-initial order can be derived without movement.

As described in Chapter 1, the LCA is linked to antisymmetry. Kayne (1994) argues that word order is directly linked to asymmetric c-command relations, with the dominance relations between pairs of non-terminal elements corresponding to the linear order of the set of terminals dominated by those non-terminal elements:

(285) Let X, Y be nonterminals and x, y terminals such that X dominates x and Y dominates y. Then if X asymmetrically c-commands Y, x precedes y.
(Kayne 1994: 33)

It follows that all syntax is head-initial, with the order Specifier > Head > Complement, and head-finality is derived through roll-up movement of a complement to a position where it c-commands the head.

If head-final order requires complement movement, then final heads must have a feature that triggers this movement, and Biberauer, Holmberg & Roberts claim that FOFC results from this movement feature spreading from a lexical head upwards. FOFC violations occur if a head does not have the movement feature and therefore precedes its complement, and the head above it does have the feature and therefore follows its complement. Languages can be disharmonic, as we have seen, because the feature may stop spreading upwards, but the movement trigger must not be reintroduced into the derivation (or 'skip' a head) once it has stopped spreading (cf. §3.2.1). This is evident in the ways in which the facts regarding language change show that changes in word order must proceed in a certain direction, as was illustrated in section 3.1.3, and that change to head-finality (having the movement trigger) must begin at the bottom of the tree.

Assuming the LCA, FOFC is a result of three syntactic conditions for Biberauer, Holmberg & Roberts (2012: 54):

- (286) *Syntactic conditions for FOFC:*
- a. Head-finality is a consequence of the movement-trigger \wedge being paired with the categorial feature $[\pm V]$, which enters the derivation with the head of the Extended Projection.
 - b. The movement-trigger \wedge can be 'inherited' with $[\pm V]$ from head to head along the spine of the Extended Projection, subject to parametric variation.
 - c. C-selection relations are subject to Relativised Minimality.

These conditions are explained and illustrated in the next section.

3.2.1. Syntactic conditions resulting in FOFC

The movement-triggering linearisation feature \wedge

Biberauer, Holmberg & Roberts use the diacritic \wedge to indicate the movement feature. This feature is ‘purely formal’ (2012: 50) and lacks both semantic and phonological properties. As such, it is not a feature that needs to be interpreted, unlike φ -features, and cannot be valued. Although here we are talking about a diacritic that causes a complement to move to a position c-commanding the head, it is the same movement feature that triggers all syntactic movement, with the difference in interpretation being how the feature enters the derivation. A-movement results if it is associated with uninterpretable φ -features of a Probe (for instance, movement of the subject DP to the specifier of T), and A'-movement if it is associated with a phase head's Edge feature (such as movement to CP) (2012: 51). However, if the \wedge is associated with a head's categorial feature [$\pm V$], it triggers comp-to-spec movement (the movement that derives head-final order).

The verbal feature [$\pm V$]

The spreading of \wedge , and therefore head-final order, from lower heads to higher ones is due to the fact that [$\pm V$] enters the derivation with the lexical head of an extended projection. The lexical head has a value of [$\pm V$], which higher heads can inherit. If \wedge is associated with [$\pm V$], it is inherited with it. Biberauer, Holmberg & Roberts use ‘inherit’ to mean ‘copies [$\pm V$] or [$\pm V\wedge$] through c-selection’ (2012: 54).

The Extended Projection

The notion of ‘extended projection’ has been usefully applied to certain problems not otherwise readily explainable. Grimshaw (2000) gives three vital ideas in the development of the concept of extended projections:

(287)

- a. Minor syntactic categories (e.g. complementiser, determiner) are X^0 level categories and head their own projections.
- b. Syntactic categories can be split into lexical and functional categories.
- c. Lexical categories occur within functional categories.

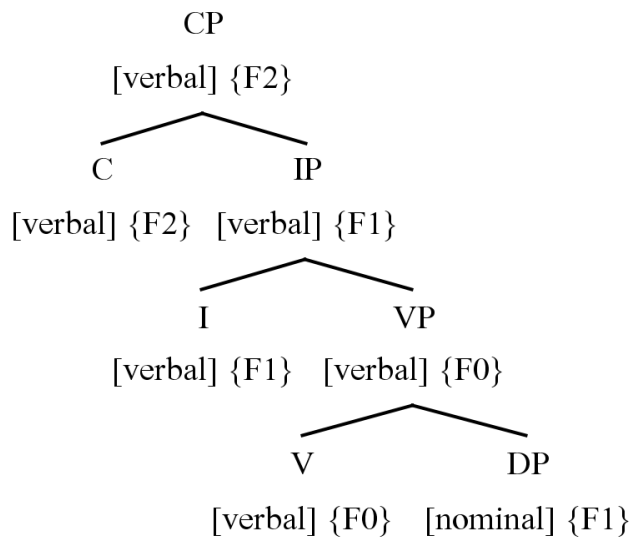
From these three facts coupled with the X-bar structure of phrases (every phrase has the same internal structure), Grimshaw explores the possible combinations of categories: if any phrase is the maximal projection of a head, and any head may take a complement, what restricts the possible combinations of phrases?

Grimshaw (2000) supposes that categories have a categorial feature, with N, D and P being [nominal] (or [-V], for Biberauer, Holmberg & Roberts 2012) and V, I and C being [verbal] ([+V], for Biberauer, Holmberg & Roberts). In addition, independently from the categorial information, a head has a functional feature [F] with a value from 0 upwards. Lexical heads are F0 (i.e. N/V), and each successively higher functional head is F1 (D/I) and F2 (P/C). Thus heads can be distinguished in two dimensions: their categorial status, and whether they are lexical or functional. Grimshaw redefines the standard notion of projection as 'perfect projection', which requires that both these sets of values are shared within a projection:

(288) X is a perfect head of YP, and YP is a perfect projection of X iff: X is a head of YP and the [F] value of YP is the same as the [F] value of X.
(Grimshaw 2000: 117)

An extended projection, however, only requires that categorial features be shared. Therefore (289) represents an extended projection, where the verbal heads C, I and V comprise the extended projection of V, but V's complement DP is excluded (based on Grimshaw 2000):

(289)



An extended projection forms between a functional head and its complement, but not between a lexical head and its complement. In (289) an extended projection is formed between the functional head C and its IP complement and between I and its VP complement, all of which share the categorial feature [verbal]. The lexical head V and its DP complement, which have different categorial features, do not form an extended projection. As well as their differing categorial features, the DP has a higher {F} value than V: V is the lowest (lexical) head in its EP and is assigned {F0}, but D is a higher (functional) head than N in its own EP, and is assigned {F1}. To form an extended projection, the {F} value should increase on each successively higher head in the projection and as soon as the {F} value of the next highest head is lower, as with the {F0} value for V, the extended projection ends.

As well as preventing the formation of an extended projection between V and DP, which is independently ruled out by the mismatch of category features, this means that V is prevented from forming an extended projection with a CP complement, which would otherwise be possible given that they are both [verbal]. A CP complement to V forms a [verbal] extended projection with verbal heads down to its own, lower, lexical V head. This lower V is {F0}, and higher heads are labelled with increasingly high {F} values. If the CP in (289) was a complement clause to a higher V, its {F2} value would be higher than the higher

V's {F0} value (as a lexical head) and the two heads could not form an extended projection. For Biberauer, Holmberg & Roberts the definition of extended projection only requires that all the heads have the same value for [$\pm V$], so that an extended projection can cross into a higher clause. Even though the higher verb has its own inherent [+V] feature, it is only necessary that they match. For Grimshaw, the fact that the higher V has a higher value of {F} than the C head in its complement prevents this possibility.

The notion of extended projection also explains a major class of exceptions to FOFC in its most basic formulation: a head-final phrase cannot immediately dominate a head-initial phrase. There exist examples of head-final VPs with an object DP or complement PP that is head-initial:

(290) Johann hat [[einen Mann] gesehen]
 John has a man seen
 'John has seen a man.'

(291) Johann ist [[nach Berlin] gefahren]
 John is to Berlin gone
 'John has gone to Berlin.'

(Biberauer, Holmberg & Roberts 2012: 33)

In both (290) and (291), the V is final in the VP, and its complement precedes it. In (290) the complement is a DP with an initial D *einen* and in (291) the complement is a PP with initial P *nach*. These therefore represent a final phrase immediately dominating an initial phrase. However, the (b) clause in the formulation of FOFC in (245) (' α and β have the same value of [$\pm V$ ']') means that FOFC applies only within an extended projection. Therefore, Biberauer, Holmberg & Roberts (2012) adopt the idea as defined in (292):

(292) *Extended Projection:*

Π is the extended projection of L if it is the maximal sub-sequence of the spine of L, such that L is an element of Π , and if α is an element of Π , α and L have the same value for [$\pm V$].

(Based on Biberauer, Holmberg & Roberts 2012: 52, their (70))

The spine is any sequence of nodes comprising a lexical head and any projection that dominates it (recursively), and any head that is a sister of such a projection.

If the movement feature $\hat{}$ enters the derivation associated with the feature $[\pm V]$ on the lexical head and is inherited along with $[\pm V]$ upwards along the spine, it follows that the constraint only applies within an extended projection. Within the verbal extended projection, V is of course $[+V]$. v is subcategorised for $[+V]$, and once merged with VP inherits the $[+V]$ feature, and if $\hat{}$ is associated with it, it may inherit $[+V\hat{}]$. A head can inherit $[+V\hat{}]$ including the movement feature, or just $[+V]$ on its own, but not $\hat{}$ on its own as it is not a categorial feature. Likewise, T inherits either $[+V]$ or $[+V\hat{}]$ and finally C (or to be precise each head in the split CP) does the same.

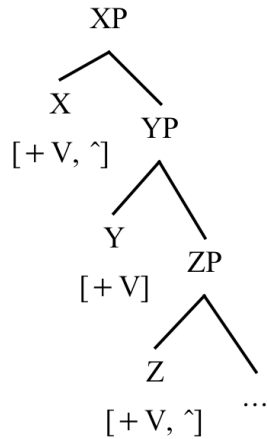
However, a lexical head that is $[-V]$ begins a new extended projection, because it does not match the $[+V]$ feature. Taking the examples in (290)–(291), the DP and PP *einen Mann* and *nach Berlin* are extended projections, with each head up to the D and P inheriting the feature $[-V]$ from the lexical N . FOFC holds between heads in these extended projections (which are head-initial in any case). The next head, V , is a lexical head and so has its own $[+V]$ feature, which does not match that of the DP/PP . FOFC does not apply between the extended projections, so (290)–(291) are not FOFC violations.

Relativised Minimality

The requirement that all heads below any given functional head with $\hat{}$ within an extended projection also have $\hat{}$ is attributed by Biberauer, Holmberg & Roberts (2012) to Relativised Minimality (Rizzi 2001), or the requirement that syntactic relations hold locally. No relation can take place between two heads if a third head intervenes (c-commands the lower head but not the higher head). This means that a head can only inherit $\hat{}$ from the next head below it, not from a lower head with $\hat{}$. The impossible structure is in (293), in which Z has $\hat{}$ but Y does not. X can enter into a relation with Y , and so it is not permitted to enter

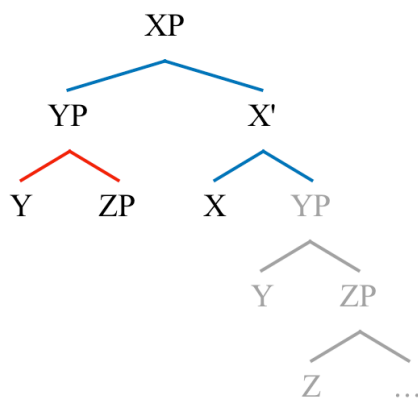
into a relation with, and inherit $\hat{}$ from, Z (Biberauer, Holmberg & Roberts 2012: 53):

(293) *



After movement takes place, the derivation of (293) is as in (294), with moved material greyed out. The complement of ZP moves to Spec,ZP, YP's complement does not move as Y does not have $\hat{}$, and finally XP's complement YP moves to Spec,XP. X thus follows its complement YP, in which the head Y precedes its complement ZP. The structure is that which is disallowed according to FOFC:

(294) *



(Based on Biberauer, Holmberg & Roberts 2012: 53, their (72))

This formulation of FOFC I take as a working hypothesis to be true. Question particles, as noted, form a significant exception to the constraint, and either they

must be shown not to fall under it for some principled reason or the constraint must be modified, if it is to be retained.

3.2.2. *Explaining question particles under FOFC*

In this section, I discuss whether question particles can be accounted for in a way that is compatible with FOFC as defined by Biberauer, Holmberg & Roberts (2012). It should be noted that it is not only question particles that do not seem to conform to FOFC; other types of ‘particle’ behave similarly. Negative particles, aspect/tense particles and discourse particles all violate FOFC in many languages:

(295) *Buru (Austronesian, Indonesia):*

Sira hapu lafa-t la yako langina moo
3PL.ACT tie food-NOM for 1SG.BEN earlier not
‘They didn’t tie up trailfood for me earlier.’ (Reesink 2002: 245, from
Grimes 1991: 232)

(296) *Bagirmi (Nilo-Saharan, Chad):*

bis sa ja ga
dog eat meat PERF
‘The dog has eaten the meat.’ (Stevenson 1969)

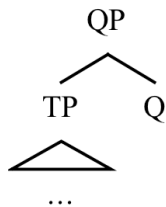
(297) *Cantonese (Sino-Tibetan, China):*

keoi heoi zo syuguk lo1
s/he go ASP bookshop SFP
‘It is obvious that s/he went to the bookshop.’ (Law 2002: 376)

While a unified explanation for these apparent FOFC-violations might be desirable, it is not necessarily to be expected. As has often been noted, ‘particle’ can be something of a ‘dumping ground’ term with diverse and unrelated elements lumped together under the label just because they do not fit into any other category. This is a label of convenience rather than an obviously coherent syntactic category, analogous to the label ‘tree’ in biology: trees did not all evolve in one single event but rather several times, and beyond sharing some characteristics like being tall woody plants, it is difficult to define the category of ‘trees’ (Paula Rudall, p.c.).

FOFC means that we do not expect final particles to occur in VO languages, and yet they do. The question is then how such structures are derived. The apparently simplest way to derive [TP Q] is if particles in languages like Mandarin are base-generated in head-final position:

(298)



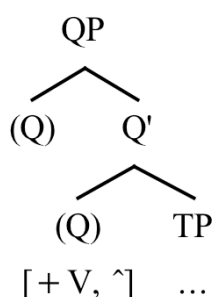
This structure is not tenable on an antisymmetric account of syntax, however, whereby linear order is determined by c-command relations: if c-command relates to precedence, there is no way to derive a head-final linear order from the structure in (298), as Q asymmetrically c-commands T and therefore precedes T. The possibility of base-generated final heads was independently ruled out even before FOFC provided another reason to expect that they do not occur in VO contexts. Another explanation must be sought.

Question particles, then, are an apparent exception to FOFC in that they appear in a word order that indicates that a head-final phrase immediately dominates a head-initial phrase in the same extended projection. They are *true* exceptions only if this is the correct structure. Recall that a superficially FOFC-violating word order may be derived by other means than comp-to-spec movement, and they are only exceptions if they reflect a strict head-complement relation. Specifically, if any of the statements in (299) are true, question particles do not provide true counter-evidence to FOFC:

- (299)
- a. The question particle is not a head (Q) or the specifier of a null head;
 - b. Q does not have the movement diacritic \wedge which requires its complement to move to its specifier;
 - c. Q is not a high head (in the split CP, or at least higher than the head-initial phrase it is supposed to violate FOFC with);
 - d. Q does not have the categorial feature [+V].

In other words, the structure must be as in (300), with Q either the head or in the specifier of a null head (Q is shown here for convenience, but heads such as Int or Typ have been proposed. It does not affect the analysis at this point):

(300)



If any of the statements in (299) are true, FOFC does not apply, and these possibilities are discussed in this section. If, for instance, question particles are not heads, FOFC does not apply as it is a constraint on heads. This would also be the case if question particles were shown to be deficient heads that fail to project, as FOFC applies to the projections of heads. If, however, the particle is in Spec,QP, FOFC does rule it out because the null head Q would violate FOFC. If Q is a head but is lower than the head without $\hat{\quad}$ (which is in the head-initial phrase), then FOFC is not violated as the head-final phrase does not dominate the head-initial phrase. If Q does not have the movement diacritic, the phrase is not head-final as defined above, and FOFC is not violated as the spreading of $\hat{\quad}$ has not 'skipped' a head. The suggestion that clause movement takes place for another reason is discussed. Finally, if Q is not [+V], FOFC is not violated as the QP is not in the same extended projection as the head-initial VP (or vP, TP or other head-initial verbal projection). Lastly, a suggestion which combines the idea that the particle might be low with the idea that it might be [-V] is put forward.

The question particle is not a head

If question particles were not heads, the lack of FOFC effects found would be readily explained, as FOFC is a constraint on heads. It might then be suggested

that question particles are either specifiers or adjuncts, to the extent that these are different notions: they are regarded by Kayne (1994) as identical, but by Chomsky (1995) as distinct, through a stipulative rule.

Kayne (2000) notes the contrast between the control facts regarding the indirect question markers *whether* and *if* in English and argues that *if* is a C⁰ element and *whether* is a specifier. The difference lies in their ability to appear in control contexts with PRO in non-finite embedded clauses:

(301) He doesn't know whether to go to the movies.

(302) *He doesn't know if to go to the movies.

(Kayne 2000: 74)

Kayne takes *whether* to be a *wh*-phrase, following Katz and Postal (1964) and Larson (1985) in analysing it as a combination of a *wh*-element and *either*. (301) is therefore comparable with (303), and (304) with (305) (Kayne 2000: 75):

(303) He doesn't know when to go to the movies.

(304) Whether they give him a seat or not, he'll be happy.

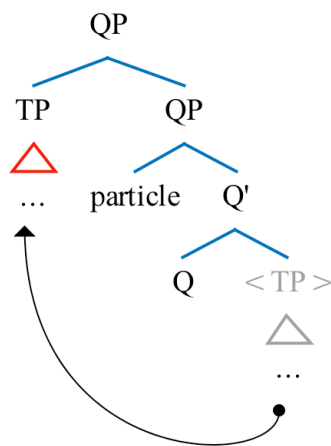
(305) Wherever they put him, he'll be happy.

According to Kayne (2000), the failure of *if* to co-occur with controlled PRO is due to a lexical complementiser being a governor for PRO (which in GB-theory, based on Chomsky 1981 and assumed by Kayne, must be ungoverned), while a specifier is not. The same control facts for *if* pertain for French and Italian *si* and *se* (and dialects thereof). These languages lack a counterpart to *whether* because they also lack *either*, and constructions such as (301) are absent in these languages. The suggestion, then, would be that question particles, or at least those that violate FOFC, are specifiers like *whether* rather than heads like *if*. The implication is that they should also be *wh*-elements, and this is not obviously the case for any of the final question particles in the sample; particles derived from *wh*-words are initial in all of the languages studied (see Chapter 2; Bencini 2003).

Secondly, the particles should be able to occur with PRO, like *whether*, but this is untestable if they do not appear in embedded clauses.

If the elements are specifiers, the system must allow multiple specifiers to accommodate both the particle and the moved complement of the head (to give the head-final structure):

(306)



Multiple specifiers are disallowed in Kayne's (1994) theory, but otherwise generally accepted: Rezac (2002) claims that this is the right structure for multiple *wh* languages (A'-movement) and double object constructions (A-movement), for instance. Adger et al (1999), summarising Chomsky's (1995) position, show that multiple specifiers are not ruled out as a consequence of the theory, as a specifier is simply a non-projecting term merged with a projecting term (which must be complex; a non-projecting term merged with a simplex projecting term is a complement). There is nothing to prevent the resultant complex term merging with another complex term, leading to multiple specifiers. Multiple complements, on the other hand, are impossible because once one complement is merged, the item is by definition no longer simplex.

Rezac (2002) notes that the Multiple Specifier Theorem must hold to enable the 'tucking-in' (Richards 1997) that is required of multiple specifiers (i.e. the c-command relations of Moved specifiers must be preserved). This states that if two phrases αP and βP are specifiers of a head X, αP can only c-command βP

under certain conditions: either the two phrases are introduced as specifiers by Move from a position in which αP c-commands βP , or αP is Merged as a specifier and βP introduced by an operation of Move.³⁷ The second condition holds for question particles if they are base-merged as Spec,XP, and the complement of XP is merged as a higher specifier, as in (306) above. This entails that the moved particle in the lower specifier position (introduced by Move) should c-command the TP in the higher specifier position (introduced by Merge). The scope facts are correct (the particle scopes over TP), but to derive the correct word order requires a reinterpretation of the linearisation principles presented previously in this thesis. Under these assumptions, if the particle asymmetrically c-commands TP, it precedes it.

Munaro & Poletto (2005) argue that the particles found in the Northern Italian dialects are heads, not specifiers, because they cannot be emphasised and they cannot be used in isolation. Furthermore, they are originally either pronouns (*ti* and *lu*) or adverbs (*mo* and *po*). Munaro & Poletto claim therefore that they are the result of a grammaticalisation process, which leads to elements becoming the realisation of functional heads rather than specifiers.

Further to these considerations, as noted above, this is still a FOFC-violating structure for VO languages: if the particle in Spec,QP is final, the null head Q of which it is a specifier must require its complement to move to a second specifier position above the particle's position. This gives a derivation in which the head-initial TP (lacking \wedge) is the complement of a head-final QP (with \wedge), the ruled-out structure in (294) above. Therefore, whether the particle is a head or a specifier of QP, a Q head has the movement diacritic when its complement does not in the VO...Q cases discussed in this thesis.

³⁷ *The Multiple Specifier Theorem (MST)* (Rezac 2002: 19):

'Given aP , bP , XP such that occurrences aP_1 and bP_1 are of the structural description [Spec, XP], aP_1 c-commands bP_1 iff both aP_1 and bP_1 are introduced into [Spec, XP] by Move of occurrences aP_2 and bP_2 and aP_2 c-commands bP_2 , or aP_1 is introduced by Merge and bP_1 by Move.
Condition: aP_1 and bP_1 both match the same feature class F on X^0 .'

If question particles are not heads or specifiers of a null head Q, then the most likely alternative is that they are adjuncts. As noted, Kayne (1994) conflates specifiers and adjuncts as instances of the same process, so the difference becomes a matter of whether the particle is in the specifier of (adjoined to) a null QP, as just discussed, or adjoined to another XP, such as CP. The former is not possible in conjunction with FOFC. However, even if the latter is the case, the same objection holds: as Kayne (1994) does not permit rightward specifiers (adjunction), the structure cannot be derived, because it would mean that whatever head the particle is adjoined to must have $\hat{}$ and trigger movement of its (non- $\hat{}$ -bearing) complement to a position above the question particle.

Furthermore, if right-adjunction is permissible another problem arises regarding the order of multiple particles. The proposition is that the particle is right-adjointed to an XP, which we can call CP for convenience (it makes no difference which XP it is, as long as it is the highest XP). By extension, all final particles may be presumed to be adjuncts in languages such as Chinese, which has several sentence-final particles. This leads to the expectation that such particles will be able to occur in relatively free order as adverbials can in the English examples (307)-(308) (although cf. Rezac's Multiple Specifier Theorem, above), but this is not the case, as (309)-(311) show:

(307) I work hard at the university every day.

(308) I work hard every day at the university.

(309) *Mandarin:*

zhè yǒu rénjiā Wáng Yùxiáng gè pì shì ne ma/*ma ne
 this have the-person Wang Yuxiang CL fart matter Q Q
 'This has damned nothing to do with Wang Yuxiang.'

(Li 2006: 61, taken from the Chinese Corpus Retriever for Language Teaching and Research)

(310) *Cantonese:*

keoi5 maai5 lau2 laa3 me1?/ me1 laa3
 he buy flat PRT Q Q PRT

'He bought a flat already?' (Tang 2002, exx. 6-7, cited in Kuong 2008: 727)

- (311) *Pagotto (Italian dialect)*:
 quando eli rivadi, po, ti/ *ti po?
 when are-they arrived PO TI TI PO
 ‘When have they arrived?’ (Munaro & Poletto 2005: 260, slightly adapted)

As Paul (2011) notes, this indicates that the particles are in fact associated with functional projections and that each is selected by, and selects for, a particular projection. She contrasts this with English ‘particles’ like *right* and *OK*, which are ‘probably adverbs, i.e. XPs, not heads, and do not need to respect a rigid order’ (Paul 2011: 15).

One way around this problem might be to assume something along the lines of Cinque’s adverb hierarchy. Cinque (1999) derives the fixed order of adverbs by proposing a very fine-grained hierarchy of functional projections, each of which hosts an adverb in the specifier position. The specifier of each projection is a standard leftward specifier. We then see the same problem once again: any projection with a leftward specifier that requires its complement to move to a higher specifier is in contravention of FOFC. Furthermore, although this analysis derives (correctly) the fact that languages with several final particles display a fixed order of particles (a similar situation to that which originally motivated Cinque’s account), some of the particles are mutually exclusive:

- (312) *Cantonese*:
 *keoi5 lei4 me1 mo4/ mo4 me1?
 he comeQ Q Q Q
 ‘He is coming?’

- (313) *keoi5 lei4 maa3me1/ me1 maa3?
 he comeQ Q Q Q
 ‘He is coming?’

- (314) *keoi5 lei4 maa3mo4/ mo4 maa3?
 he comeQ Q Q Q
 ‘He is coming?’

(Kuong 2008: 718-9)

This is unexpected if each is hosted in its own projection, as it indicates that they should be located in the same position.

Paul (2011) also points out that question particles are almost never phrasal and cannot be internally modified, indicating that they should indeed be considered to be heads.³⁸ If this is the case and question particles are X^0 , they are capable of violating FOFC, and an analysis which wishes to maintain the constraint must explain their position in some other way. The next three sections discuss proposals that assume this to be the case.

The question particle is low in the structure

As noted, there is a serious problem for FOFC if Q is taken to be a head in the CP, the analysis generally assumed (and discussed further in Chapter 4). One potential solution that allows us to retain the idea that the particle is a head but also keep FOFC is that the particle is actually lower than it looks. However, in order to establish the correct scope facts (the particle takes scope over the whole sentence), another, unpronounced question marker must also be posited. A similar idea has been suggested to deal with the bipartite negation found in many languages.³⁹ One such proposal is Biberauer's (2008) analysis of the Afrikaans double *nie* structure, which behaves in interesting ways in that both instances of *nie* must usually be present (315), but in some contexts only one can occur (316) (Biberauer 2008: 104):

(315) Ek ken nie daardie man nie
 I know not that man not
 'I don't know that man.'

(316) Hy verstaan dit nog nie (*nie)
 he understand it still not not
 'He still doesn't understand it.'

³⁸ French is a notable exception to this statement, with a particle *est-ce que* that is not only transparently a phrase (literally 'is it that') but that can be modified: Paul (2011: 4) notes that *n'est-ce pas que* is a grammatical negative version. While it may be that there are simply two particles, a positive and a negative one, it is possible that the French particle is not a true question particle. This is briefly taken up in Chapter 5, but I otherwise leave this question aside for now.

³⁹ The languages are clustered especially in central and southern Africa and Papua New Guinea, also areas with a high concentration of VO...Q languages. However, nothing should be read into this: these two areas, particularly Papua New Guinea, have so many languages that there is almost always a cluster there for any feature, and the specific languages listed overlap very little.

Biberauer’s argument is that the first negation actually begins lower in the structure, as an adverbial negative element (the ‘true’ negation). If this *nie* is omitted, the sentence changes in meaning (loses its negative reading) or becomes ungrammatical. The second *nie* is a Polarity head which attracts the CP to its specifier so that the negation contained within CP can check its unvalued negation feature (via clausal pied-piping). If this second *nie* is omitted, the sentence merely sounds somewhat incomplete: Biberauer notes that Afrikaans headlines often omits it, as do non-native speakers. Similarly, the first *nie* can be coordinated, stressed and made emphatic, whereas the second cannot. Evidence that the second *nie* is outside TP comes from the fact that in sluicing constructions, which are typically argued to involve TP-deletion, *nie* remains (Biberauer 2008: 115):⁴⁰

- (317) Ek weet iemand ken die antwoord, maar ek weet
 I know someone know the answer but I know
 nie wie [die antwoord ken] *nie*
 not who the answer know not
 ‘I know someone knows the answer, but I don’t know who.’

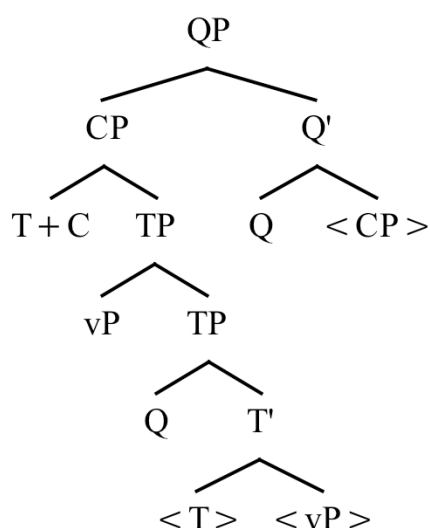
The sentences in which only one *nie* is present are argued to be derived via PF deletion of the second *nie*, the one in Pol⁰, when it immediately follows the first *nie* in a single prosodic phrase. Thus the instances in which only one *nie* appears are instances of the lower, adverbial, ‘true’ negation appearing finally in the CP which moves to Spec,PolP.

Adopting this analysis for the question particles discussed here means that the particle we see is equivalent to this low adverbial negation: it is somewhere low in the clause, and everything else moves past it, leaving it clause-final. Then the CP moves to Spec,QP, whose head has an unvalued Q feature, which is valued by the lower Q within the clause. The higher Q, the one in QP, is not pronounced, being deleted at PF. To end up with a configuration in which both Q elements are

⁴⁰ In fact, Biberauer (p.c.) points out that the second *nie* in (317) is main-clause *nie*₂ which would not be affected by embedded-clause sluicing. Nevertheless, the headlines and restructuring data cited in Biberauer (2008) provide evidence for her argument.

adjacent we must assume that T has the movement diacritic \wedge . This causes vP to move to the Spec,TP position above Q, which I assume is adjoined to TP because of its scope over the whole TP. T-to-C movement must also take place, giving the structure in (318):

(318)



However, note that to avoid violating FOFC, the lower heads v and V must both have \wedge , and to give the correct word order VO there must be further movement of the verb past its moved object.

Whereas Biberauer convincingly argues that the lower *nie* is the true negation, it is not so clear that the same analysis can be applied to the question marker. Unlike *nie*, it tends not to be stressable or coordinatable, but it is not clear what a coordinated question particle would actually coordinate with, or what the resulting structure would mean. The former restriction is probably due to the fact that functional words in general cannot bear word stress. The lack of the other, higher, particle does not result in the lack of a question interpretation (comparable to Biberauer's negative sentences), indicating that it is the one that remains that gives the question meaning, as expected. In both Mandarin and Thai, the question particle remains in sluicing constructions (Hofa Wu/Somphob Yaisomanang, p.c.), in parallel with the Afrikaans example (317) above, but given

that both instances of *nie* remain in (317), this does not provide us with any more information about which of two question elements is deleted.

Biberauer's analysis cannot be imported wholesale, because in the negation construction it is the norm to have two instances of *nie*. There is only a single one under the specific conditions she describes (the second one is deleted when they are adjacent, although there are certain restrictions on this). This amounts to saying that in VO...Q languages, the question particle is always final in the CP, which is difficult to maintain if we are also saying that it is not a high final head (all other elements must move out of the VP/TP). However, this analysis has parallels with the argument that is put forward later in this thesis, namely that polarity is crucially involved in polar questions, and that some question particles are negative elements.

Munaro & Poletto (2005: 259) make a case against the idea that Italian sentential particles are low heads. They discount the suggestion that they are in VP, as they have no argument status (having previously established that they are functional heads). They argue that they cannot be merged low in the TP because there is no reason for PPs to move out of the VP, as they would have to do to leave the particle in final position (DPs might scramble to get case). Furthermore, the particles encode pragmatic functions, which are associated with the left periphery rather than the aspectual and modal functions of the TP. They also argue that not being able to appear in embedded questions is much more a property of CP elements than TP elements, which are not sensitive to this distinction.

Q does not have the movement diacritic ^

If Q is a head in the split CP, as is generally assumed, then in order to derive the correct word order with the particle clause-finally, it should have the movement diacritic ^ that requires its complement to move to its specifier (and its complement should not have the diacritic), according to Biberauer, Holmberg &

Roberts (2012). The question particle is base-generated in a functional projection within CP, asymmetrically c-commanding the TP:

(319) [_{CP} Q [_{TP} ...]]

This structure is not prohibited by FOFC because a head-initial phrase may dominate a head-final or head-initial phrase with no restriction. However, to derive the clause-final particle order, clause movement must take place, moving the TP to a position c-commanding the question particle:

(320) [_{CP} [_{TP}...] [_{C'} Q [_{TP}...]]

This means that, for this analysis to be correct, Q must have the movement diacritic \wedge . In order to respect FOFC, all heads below Q and within the same extended projection must also have \wedge (the language must be consistently head-final, at least where the heads are [+V]); if any head in the extended projection lacks it, a FOFC-violation occurs. According to the theory of FOFC set out above, the structure in (320) is simply not allowed where any head in the TP is head-initial (lacks \wedge).

However, if Q does not have the movement diacritic \wedge , then it is not in violation of FOFC because FOFC simply prohibits a higher head from having \wedge when a lower one in the same EP does not have it. Nevertheless, in order to be correctly linearised there must still be movement of (at least) the TP to a position in which it asymmetrically c-commands the particle. This movement must be motivated by some feature other than \wedge , and a good candidate is Topic or Focus movement, both of which place a topicalised or focussed constituent in a specifier within CP.

Julien (2001) argues that this is the right analysis for Turkish final question particles. She assumes the polar question marker is generated in Focus. The question particle in Turkish focuses and questions the constituent that it follows. In neutral questions, the whole TP is questioned and it moves to Spec FocP, leaving a clause-final question marker as in (321). If a specific argument is

questioned, that argument alone moves, as in (322), with the direct object in a topic position above Focus (Julien 2001: 22, from Kornfilt 1997: 5, 191):

(321) Ahmet sinema-ya git-ti mi?
Ahmet cinema-DAT go-PAST Q
'Did Ahmet go to the cinema?'

(322) Kitab-ı HASAN mı Ali-ye ver-di?
Book-ACC Hasan Q Ali-DAT give-PAST
'Did HASAN give the book to Ali?'

Julien's analysis is that the movement is triggered by strong features, in this case [FOCUS]. This is how she explains the fact that the question particle is not always final, as it would be if the movement was repeated comp-to-spec 'roll-up' movement.

Turkish is an OV language, with consistent head-final order. It is one of the 90% of OV languages that conform to Greenberg's universals, which state that in an OV language all heads are expected to have their complement to the left (Julien 2001). The object should precede the main verb and inflected auxiliaries should follow it. A higher verb should follow a lower one. Julien designates this majority of OV languages as 'head-final': they are consistently head-final in TP. Head-final languages, she argues, derive their surface order through repeated comp-to-spec movement triggered by 'c-features' ('category features': a head has to check that its complement is the right category). A head can check its c-feature by attracting the head of the complement to its specifier, attracting the whole complement to the specifier, or by attracting just the categorial feature of the complement (following Holmberg 2000).

Normally, c-features do not trigger movement if there are strong features such as V-features present, as c-features are 'relatively weak' (Julien 2001: 21) and do not normally cause movement to take place. A language that has strong head features or strong argument features will never have movement triggered by c-features; they are checked covertly, as a side effect of the head/argument movement. However, a language that lacks strong features has no other way for a

head to check its c-feature, and c-features trigger movement as a last resort. Thus consistent head-final order is found only in languages without strong features in the TP.

Julien notes that head-final languages may still be head-initial in CP. This, she argues, is because C heads often do have strong features, such as topic and focus features, which override the c-features. This explains the ability of the Q in Foc⁰ to attract the whole TP or only a questioned constituent, according to whether the whole TP is questioned, as in (321), or only one constituent, such as the subject question in (322). The TP is therefore head-final due to roll-up movement of comp-to-spec triggered by c-features, but the CP is head-final for independent reasons, namely that the Focus head possesses a strong focus feature which attracts the TP to its specifier. If the focus does not attract TP but instead some other constituent, as in (322), the verb (and the remnant of the TP) remains below the question particle.

This also means that head-final languages may have initial complementisers.

Julien gives Oromo as an example:

- (323) *Oromo (Afro-Asiatic, Ethiopia):*
 joollée [akka i-tt hin-séenne] d'ólk-i
 children that it-to NEG-enter prevent-IMP
 'Prevent the children from entering it.'
 (Owens 1985: 146, cited in Julien 2001: 31)

Furthermore, some head-final languages have preverbal negation (as does Oromo, above) where V-Neg would be expected if complements consistently move to specifiers:

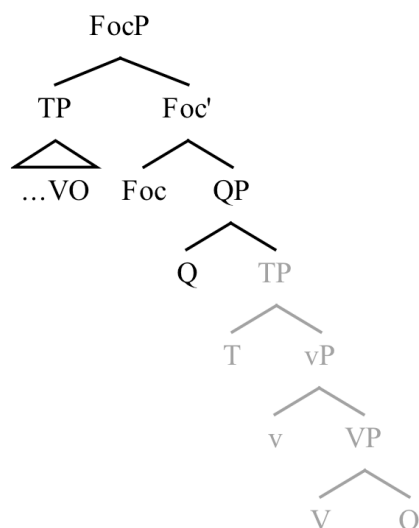
- (324) *Hindi (Indo-European, India):*
 Raam roṭii nahiiṅ khaa-taa
 Ram bread NEG eat-PRES.MASC.SG
 'Ram does not eat bread.' (Mahajan 1989: 225, cited in Julien 2001: 29)

However, Julien assumes that Neg has strong operator features, which attract the target of negation to the SpecNegP rather than Neg's complement. As with the CP

heads involved with processes like questions, the complement may be attracted to the specifier, but it is for independent reasons and not the roll-up movement triggered by c-features seen in the TP.

Clause movement of the TP to a higher specifier is thus motivated to explain the word order found in Turkish polar questions, and there is nothing in Julien's analysis to prevent the same movement, triggered by the same operator features, occurring in SVO languages. This is because the movement is independent of movement taking place within the TP. The movement she proposes for Turkish is also compatible with FOFC, as it involves a harmonically head-final structure. Each head in the extended projection has comp-to-spec movement and the complement of Q is also head-final. It does also predict that the apparently FOFC-violating structure should occur, as is the case: a head-initial language may attract the TP to a higher specifier for focus or other strong feature reasons, which gives the FOFC construction, assuming that the question particle is lower than Focus. This is permitted under FOFC, as it is not movement triggered by $\hat{}$, but it requires the assumption that Foc is higher than Q, generally not thought to be the case.

(325)



Lee (2005, 2008) also proposes that sentence-final question particles can be the result of clause movement. She discusses the case of San Lucas Quiaviní Zapotec

(SLQZ), a VSO language of the Oto-Manguean family spoken in Oaxaca in Mexico. The language is consistently head-initial with possessed nouns preceding possessors, modifiers and relative clauses, for instance, and prepositions rather than postpositions (Lee 2005). However, there are a few exceptions to this head-initial ordering, namely the ‘sentence-final clause-typing particles’ (Lee 2005: 91–2):

(326) *YNQ particle:*
 b-da’uh Gye’eihlly gueht èee?
 PERF-eat Mike tortilla Q
 ‘Did Mike eat tortillas?’

(327) *Echo Q particle:*
 g-auw-a’ làaa?
 IRR-eat-1s Q
 ‘I should eat?’

(328) *Quotative particle:*
 b-gàa’ah wbwààa’n nneh
 PERF-be.caught thief QUOT
 ‘It’s said the thief was caught.’

Lee argues that these particles are not exceptions but actually represent head-initial structures. They appear sentence-finally because the TP moves past them to a higher specifier.

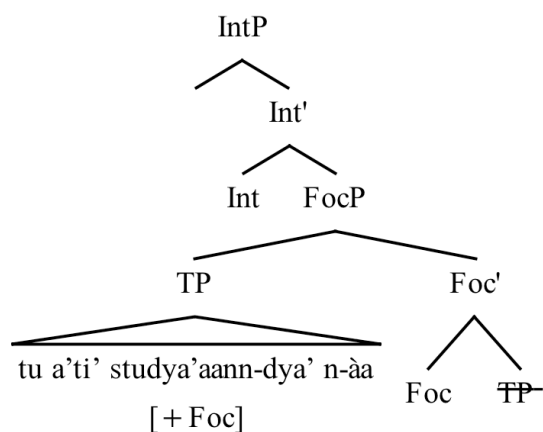
Lee (2008) shows that the syntax of SLQZ questions provides evidence for a separate IntP, located above FocP (as argued for by Rizzi 2001). Principal among the evidence is that focus movement and *wh*-movement have different characteristics and are thus different phenomena involving different projections. The two types of movement apparently target the same preverbal (sentence-initial) position and may not co-occur. They are also both ruled out in broadly the same set of contexts. However, in some contexts, notably negation with *a’ti’*, *wh*-movement is allowed but focus movement is not (Lee 2008: 167):

(329) *Gye’eihlly a’ti’ studya’aann-dya’ n-àa
 MIKE NEG student-dya’ NEUT-be
 ‘MIKE isn’t a student.’

(330) tu a'ti' studya'aann-dya' n-àa?
 who NEG student-dya' NEUT-be
 'Who isn't a student?'

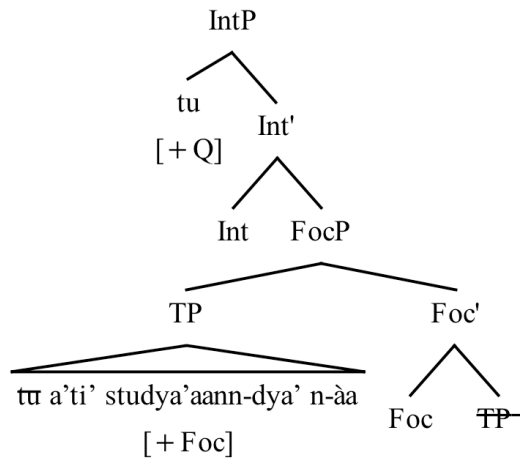
Lee claims that *wh*-constituents have the features [+Q] and [+Foc], whereas focussed constituents have only [+Foc]. A (constituent containing a) *wh*-word moves through Focus to have its feature checked, and then moves on to IntP to check [+Q]. The trace remains in Focus, blocking focus fronting from taking place. Likewise, focus fronting blocks *wh*-movement because Focus is filled and the *wh*-constituent cannot check its [+Foc] feature. Therefore in a *wh*-question, the TP moves first to Spec,FocP:

(331)



The *wh*-phrase contained within the TP has its [+Foc] feature checked there. The *wh*-phrase then moves on to Spec,IntP, where its [+Q] feature is checked:

(332)



Lee (2008) argues that YNQs with sentence-final question particles also involve clause movement to a position above IntP. SLQZ has three question particles: two are initial, *laàa* and *uu*, and one is final, *èee*. *Uu* is the most restricted in use, and cannot occur with preverbal topics or focussed constituents, preverbal predicate nominal, negative questions, or irrealis-marked future verbs. *Laàa* cannot be used with preverbal topics, but in all of the other contexts mentioned above it is allowed. *Èee* is acceptable in all of these contexts. As well as these syntactic conditions, each particle indicates a specific type of question. *Uu* is used when the speaker expects or hopes for a positive answer to the question, *laàa* when the question concerns new information, and *èee* when the question is about presupposed or old information.

The crucial differences between *laàa* and *èee* are the information structure (new vs. old information) and their position in the clause (initial vs. final). Lee (2008) argues that these two difference are directly related, in that the different position in the clause is a result of the information structure of the question. She argues that both are generated in Int⁰. The TP in *èee* questions then raises to Spec,TopP, above IntP, the position for left-dislocated topics. Anything in this position is interpreted as old or presupposed information, and the TP in *èee* questions is old or presupposed information. This is supported by the fact that the only things that can precede an initial question particle or *wh*-word (both in IntP) are left-dislocated topics and vocatives. *Laàa* disallows topics, but due to a semantic

conflict rather than for a syntactic reason: *laàa* is used to question new information, whereas topics are by definition old information.

Lee (2005) argues that clause movement is independently required to explain the syntax of clauses with definite aspect-marked verbs. Definite aspect is used with future tense verbs to indicate the speaker's certainty of an event taking place. It cannot occur with negation or focus-fronting, but is allowed with *wh*-fronting, so Lee takes this to indicate that the definite-marked verbal constituent is in a position somewhere above negation and as high as Focus, but not as high as ForceP. She suggests that focus and definite marking compete for the same position. The fact that definite-marked verbs can occur with *wh*-movement is explained if the TP with a definite-marked verb and a *wh*-constituent moves to Focus, and the *wh*-phrase moves out to IntP (to check its [+Q] feature), allowing both to occur. She also rejects an analysis in which the particle is head-final for a number of reasons, including the fact that *wh*-words, focus, topics and quantified phrases all move to the left edge of the clause. There is thus evidence to indicate that clause-fronting takes place in SLQZ questions with sentence-final particles.

Simpson & Wu (2002a,b) cite phonological evidence that clause-fronting also takes place in certain Taiwanese constructions. Taiwanese, like SLQZ, is head-initial (in VP, PP, IP and AspP complements appear to the right of their head, and in DPs with demonstrative determiners). Again like SLQZ, certain clause-typing particles may appear sentence-finally. One such particle is the recently-emerged sentence-final particle, *kong*:

(333) *Taiwanese (Sino-Tibetan, Taiwan)*:

A-hui	liau-chun	A-sin si	tai-pak	lang	<i>kong</i>
Ahui	thought	Asin is	Taipei	person	PRT

'Ahui thought that Asin is from Taipei.' (Simpson & Wu 2002b: 68)

Kong in (333) is a verb meaning 'say', but is undergoing grammaticalisation as a complementiser. It is common for verbs equivalent to 'say' to grammaticalise as complementisers, especially when it commonly follows another verb of saying:

- (334) A-hui siongkong A-sin m lai
 A-hui thinkKONG A-sin NEG come
 'A-hui thought that A-sin was not coming.' (Simpson & Wu 2002b: 77)

There is some evidence that this is happening here: the homophonous verbal form is able to take aspectual suffixes, while the complementiser *kong* cannot (Simpson & Wu 2002b: 77). However, as well as occurring in the expected clause-initial position, it can occur clause-finally, as in (333). It is rather unusual for the position of the element to change in the process of grammaticalisation. Additionally, Simpson and Wu (2002b) note that in the many SVO languages in Southeast Asia and West Africa that have a similar complementiser grammaticalised from a verb 'say', the complementiser always precedes the clausal complement, just as the verb it derives from does. The permissible final position of the complementiser *kong* is thus unexpected both in terms of the word order of Taiwanese and cross-linguistically comparable grammaticalisation processes.

Simpson and Wu argue that there is reason to believe that Taiwanese sentence-final particles are not in fact part of a head-final structure. Other C elements occur initially, for instance *na-si* 'if', which indicates that the CP is rather head-initial:

- (335) na-si A-sin m lai...
 if A-sin NEG come...
 'If A-sin is not coming...' (Simpson & Wu 2002b: 71)

Furthermore, they note that the final question particle, *bo*, occurs in complementary distribution with an initial/second position question particle *gam*:

- (336) A-sin u khiau *bo*?
 A-sin AUX clever Q
 'Is A-sin clever?'

- (337) A-sin *gam* u lai (**bo*)?
 A-sin Q AUX come Q
 'Did A-sin come?' (Simpson & Wu 2002b: 71)

This fact suggests that the two particles occupy the same structural position, and there is no reason to argue that this position is final. Although Simpson & Wu discuss *kong*, these data imply that they would extend their analysis to all clause-final particles in Taiwanese. In term of FOFC, the argument must be the same if both are regarded as underlyingly initial C-related elements.

Phonological data regarding the particle *kong* add weight to the argument that it is initial and TP-movement occurs. Simpson and Wu (2002a) give (338) as the appropriate structure:

- (338) [_{CP} [_{TP} A₇-sin₁ m₃ lai₅]_i kong₁ t_i]
 A-sin not come_{PRT}
 ‘A-sin isn’t coming, I’m telling you!’ (Simpson & Wu 2002a: 298)

Simpson and Wu argue their point on the strength of the tone sandhi patterns found in these structures. Tone sandhi (TS) is the phenomenon whereby the ‘citation tone’ (the tone that is lexically listed) of a syllable changes according to regular rules when it precedes a tone-bearing syllable in its TS domain. The tone of a syllable always undergoes the same change, so that a tone 1 syllable always changes to a tone 7 syllable when it precedes a syllable bearing a tone of any kind (within the same TS domain), rather than changing according to the specific tone of the following syllable (Simpson & Wu 2002b). They define TS domains based on the tone changes observed, noting that a head and its complement are in the same TS domain, but a head and its specifier are not. Adjuncts constitute complete TS domains. We therefore see tone changes as in (339), where the • indicates that a syllable undergoes TS. The final syllable of the specifier, *A-sin*, does not change, but the complement of the verb triggers change on the verb. The final syllable does not undergo TS, because it can never occur on the final syllable of a sentence as the sentence ends the TS domain.

- (339) A•-sin u• lng• chhing• kho
 A-sin have two thousand dollar
 ‘A-sin has two thousand dollars.’ (2002b: 74)

The final complementiser *kong* in (340) would not be expected to undergo TS because it is clause-final. (340) is therefore inconsistent with normal TS rules:

(340) goa siong• i m• lai kong•
 I think he NEG comeKONG
 'I think he is not coming' (Simpson & Wu 2002b: 8)

However, if the TP has raised from the complement of *kong* to a higher position, the TS facts observed are consistent with the TS domains of the underlying structure. The specifiers *goa* and *i* remain unchanged, the TP complement of *kong* triggers change on the C head, and the final syllable *lai* does not undergo TS:

(341) [[goa] siong• [kong• [[i] m• lai]]]
 I think KONG he NEG come
 'I think he is not coming.'

Simpson and Wu (2002b) offer two possible explanations for the movement of the TP. It may be that the particle, in the process of grammaticalisation, has become more like a clitic and therefore requires a phonological element to its left, as is the case for other clitics in Taiwanese (and other varieties of Chinese). The TP moves in order to provide this phonological support. Their second possibility is the same as the one offered by Lee for SLQZ, namely that the proposition in sentences with *kong* is a topic and thus moves to sentence-initial topic position. The particle is an emphatic particle, giving a meaning something like the English 'I'm telling you!' (Simpson & Wu 2002b: 85), emphasising a proposition that the hearer has shown signs of doubting. The proposition encoded in the TP is therefore one that both speaker and hearer are familiar with, although the hearer is less sure of its truth, and it is old information or a topic. Placing the particle *kong* in final position also has the effect of focussing it. Simpson and Wu prefer this explanation as it accounts for the topic interpretation of this type of sentence.

Implications

The analyses discussed in this section provide arguments that clause movement takes place to derive the particle-final structures seen in these head-initial

languages (SLQZ and Taiwanese), as well as the head-final language Turkish. The authors provide convincing evidence from the information structure of the sentences involved (Julien 2001; Simpson & Wu 2002a,b; Lee 2005, 2008). Simpson and Wu (2002b) also argue that there is phonological support from the unexpected TS alternations that take place in constructions with *kong*.⁴¹ Lee (2005, 2008) notes that the syntactic facts indicate that her argument is on the right lines, and Julien (2001) provides good syntactic motivation for the movement. The argument is also attractive because it provides a reason for the movement: it is triggered by the information structure of the question. For Taiwanese and SLQZ, the particle is used to question topics, and in Turkish the questioned element is focussed. It is generally assumed that *wh*-elements move to Spec,FocP, and the Turkish data (and similar data from other languages) show that constituents other than the TP can be focussed and questioned.

Nevertheless, I do not adopt this proposal for the particles considered in this thesis. It may well be the correct analysis for the languages discussed in this section, but some problems remain. If the movement was to Spec,TopP (i.e. topicalisation), then only old information should be questioned with such particles. Lee (2005, 2008) shows that this is the case for SLQZ, and Simpson & Wu mention it is also true for the Taiwanese complementiser *kong*, but it is by no means the case for all of the languages with final question particles. Movement to Spec,FocusP is much more likely, but Rizzi (2001) shows that the position of the question particle in Italian, at least, is above Focus.

A prediction that is made if Focus drives the movement is that smaller constituents than the clause should be questionable, as in Turkish. In fact, this appears to be possible in Thai:

(342) ma-mûaŋrǎu/mǎy thîl thim chôp
 mango Q/Q that Tim like
 'It is mango that Tim likes?' (Somphob Yaisomanang, p.c.)

⁴¹ An extension of this analysis would predict that the Taiwanese final question particle *bo* has the same tone sandhi pattern, and thus the same syntactic derivation. I have been unable to determine whether this is the case.

However, note that the particle *mǎy* (which is the standard particle used in polar questions) in (342) is very colloquial, and marginal or ungrammatical for some speakers (Somphob Yaisomanang, p.c.), and *rǎu* is preferred. *Mǎy* is ungrammatical in fragment questions such as the echo questions in (343)-(345), indicating that (342) may be such a fragment and not a focus construction:

(343) *hâa* *bàat rǎu*
 five baht Q/ or
 'Five baht?'

(344) *yiin* *rǎu*
 jeans Q/ or
 'Jeans (, did you say)?'

(345) *khâaŋ* *bâan* *rǎu*
 beside house Q/ or
 'Beside the house (, did you say)?'

(Somphob Yaisomanang, p.c.)

There is also a complementiser (or relative pronoun) *thii* as in the English equivalent, which is a cleft construction.

If the movement of the clause is focus fronting, the fact that the FOFV-violating particles do not appear in embedded questions is left unexplained, as the same fronting operation should presumably occur in such contexts. While fronting in embedded clauses receives varying grammaticality judgements, and there are differences between factive and non-factive verbs and other variables (Breul 2004), it is generally regarded to be possible for at least some speakers:

(346) Sally plans for Gary to marry her, and he vows that marry her he will.
 (Breul 2004: 207, citing Hooper & Thompson 1973)

(347) John believes (that) this book, Mary read.

(348) John regrets that this book, Mary read.

(Breul 2004: 211)

The examples in (347) and (348) can receive a focus interpretation as well as topicalisation (at least in my dialect), indicating that FocP is present in embedded clauses. Added to this is the obvious fact that *wh*-fronting takes place in embedded questions, and *wh*-movement is taken to be to Spec,FocP.

The question particle is syncategorematic

An idea put forward by Biberauer, Holmberg & Roberts (2010) is that the FOFC-violating particles are syncategorematic. Syncategorematic elements are those which have no meaning taken in isolation, only in the way in which they combine other elements. Biberauer, Holmberg & Roberts define this term as in (349) (Biberauer, Holmberg & Roberts 2010: 82):

- (349) An element is syncategorematic if
- a) It is categorially distinct from the rest of the Extended Projection (EP),
and
 - b) It neither selects a member of the EP nor is selected by one.

Biberauer, Holmberg & Roberts (2010: 82) argue that because a syncategorematic element is not part of the EP, by virtue of its being categorially distinct, it can have its own movement diacritic or not, with no FOFC consequences. Because it does not enter into c-selection relations it will not occupy a fixed position, and it must have an LF interpretation as it is neither a probe nor a goal, and so will need to have all its features inherently valued. Biberauer, Holmberg & Roberts (2010) consider question particles to be just this type of element: they argue that they are not verbal, but appear in the clausal spine, and that they do not select the clause nor are selected by it.⁴² However, question particles generally do occupy a fixed position in the clause, and as Li (2006), Paul (2011) and others note, they must select (and project) in order to occur in a rigid sequence. Indeed, Biberauer & Sheehan (2012) show that question particles are subject to FOFC in a downwards direction: that is, they cannot be the lower member of a pair of heads in which the higher is final and

⁴² In their (2012) paper, Biberauer, Holmberg & Roberts assume question particles, along with other C elements, to be verbal.

the lower initial. Finally, as Biberauer, Holmberg & Roberts (2010: 82–3) argue, if the particle is not c-selected it should not be able to appear in embedded questions, as embedded clauses must be selected. However, this implies that only the FOFC-violating particles are syncategorematic. Philip (2012: 116–17) points out that many question particles can in fact appear in embedded contexts, and this was also shown in Chapter 2. These particles must be considered not to be syncategorematic, and a difference between the two types of particle is created which was not there before. However, one point in favour of this explanation is that it offers a reason for some non-FOFC-violating particles not to appear in embedded clauses (as was demonstrated in Chapter 2): Biberauer, Holmberg & Roberts (2010) say that syncategorematic elements *may* superficially violate FOFC, with the implication that they do not have to, leading to the expectation that some will not violate FOFC. Therefore, some of the non-FOFC-violating particles may be syncategorematic, and for that reason cannot be selected and cannot mark embedded questions.

The question particle is the disjunction

The potential explanations discussed in this section so far each have their advantages, but none accounts perfectly for the data presented in the previous chapter. In this section I briefly outline a further proposal which combines some of the features of these accounts but solves the problem in a very different way. Building upon work by Aldridge (2011), I propose that the question particle is actually the disjunctive marker in at least those languages which violate FOFC.⁴³ This idea draws partly on observations made by Jayaseelan (2008: 1), who notes that the question particle and the disjunction are identical in Malayalam (Dravidian, India), and proposes that there is an explicit relation (although his argument is not that the two are the same element; see Chapter 6 for full discussion of his claim):

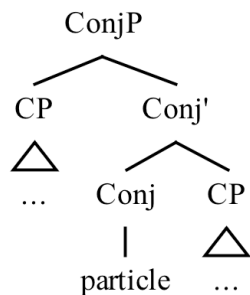
⁴³ In fact, I suggest that the analysis can be extended to the origin of question particles in some other languages. In Chapter 7 I argue that the final question particle in two OV languages, Turkish and Japanese, has a similar origin but has since become reanalysed as a ‘true’ question particle.

(350) John-oo Bill-oo Peter-oo wantu
 John-DISJ Bill-DISJ Peter-DISJ came
 'John or Bill or Peter came.'

(351) Mary wantu-oo ?
 Mary came-Q
 'Did Mary come?'

Following Aldridge (2011), I argue that the question particle is not merely related to the disjunction, but is actually an instance of the disjunction. This fact is partially obscured by the fact that the second clause is deleted (and in Chinese, historical sound changes have resulted in the non-homophony of the two elements). This is an explanation that avoids a FOFC violation by virtue of the head being initial, rather than final. The deletion of the second clause (in the complement of the disjunction phrase) leaves the disjunction marker stranded at the end of the utterance, following the first disjunct clause in Spec,ConjP.⁴⁴

(352)



It also means that the head is acategorial, like other conjunctions/disjunctions, and as such not part of the same extended projection as V (as its categorial feature does not match V's). In this sense, it is related to the idea that the particle is syncategorematic. It allows the particle to appear in embedded questions, provided that it is not the selected element. Biberauer, Holmberg & Roberts's syncategorematic account predicts that such a particle should never occur in embedded clauses, because embedded questions are c-selected and therefore need to be headed by a selectable question marker. If it is disjunction, it is not the selectable head, although it may appear in embedded clauses independently.

⁴⁴ I show CPs here, but it need not be CPs that are conjoined: Yaisomanang (2012) argues for a conjunction of PolPs, as discussed in Chapter 6.

The particle is, on this analysis, a head, as discussed in Chapter 6. The CP is in its specifier, which gives a reason for the head having a fixed position with respect to the CP. It also explains why the particle is not phrasal, and cannot be internally modified (i.e. its sub-components cannot undergo syntactic operations), as these are not properties of heads. The particle is actually high in the projection, in fact the very highest head taking two CPs as specifier and complement, but it does not violate FOFC due to its preceding its elided complement. Not appealing to a bipartite analysis explains why only one particle is generally found in a question, and avoids having to derive its position above CP (as indicated by scope and deletion facts).

The head does not, therefore, have the movement diacritic $\hat{\quad}$, and as a result its complement stays in situ. This allows an alternative explanation for the tone sandhi facts described by Simpson & Wu (2002b): *kong* undergoes TS because it is not the final element, but the initial element within the TS domain of Conj^0 and its complement. The word immediately preceding it does not, because it is the final element in its TS domain, Spec,ConjP . An explanation in terms of disjunction also avoids the spell-out issues associated with Simpson & Wu's analysis. It also means that the fact that the question particle is higher than Focus is easily accounted for, as Focus is within the CP in the specifier of the particle.

This proposal is consistent with the analysis of FOFC in Biberauer, Holmberg & Roberts (2012), and allows for final question particles to be apparently FOFC-violating but actually FOFC-compliant. In Chapters 6 and 7, the analysis is presented in detail and then applied to a particular language to show how it works in practice. In Chapters 4 and 5, the syntax of true questions is considered and an analysis defended. Before attending to these matters, however, in the remainder of this chapter other theories that offer explanations for the FOFC data are presented, and their relative merits assessed.

3.3. Alternative explanations for the question particle distribution

In the previous section I introduced a potential analysis of the final question particles in VO languages that is consistent with FOFC and allows us to retain it as a universal generalisation. However, there is the possibility that these question particles are a genuine counter-example to FOFC, and it cannot be considered a universal. One of Biberauer, Holmberg & Roberts's (2012) aims is to demonstrate a syntactic universal. Word order universals of the Greenbergian type are very often strong tendencies, with some exceptions. Hierarchical universals, on the other hand, are argued to be true universals (Whitman 2008), and as such should have no counter-examples. FOFC holds true, as we have seen, in very many contexts, and it would be unfortunate if it was shown not to hold for question particles. If, however, we allow that question particles are genuine exceptions, then the question arises of why FOFC holds so strongly everywhere else. Why is it such a strong tendency, in other words? There are other explanations for FOFC that have been advanced, including a processing explanation (Hawkins 2004, to appear) and an Optimality Theoretic explanation (Philip 2012), as well as a syntactic explanation which broadly follows Biberauer, Holmberg & Roberts but argues that FOFC follows from a strong version of the LCA (Sheehan 2010, 2012). These alternative explanations are considered in this section.

3.3.1. A processing account

Hawkins (2004, to appear) argues that a grammatical principle is not necessarily required to explain the lack of certain word orders, and puts forward the idea that processing efficiency principles can explain the facts more accurately. On this view, there is no prohibition on any complement moving into the specifier of its head; rather, the asymmetry comes about as a consequence of other cognitive pressures. One major reason for thinking that this might be the case is that the inverse-FOFC disharmonic order is also very rare. (353) exemplifies with V taking a PP complement, such as *went to the movies*, in which the two harmonic

orders together make up 365 of 389 languages, or 94% (Hawkins to appear: 2, using data from Hawkins 1994: 257, provided from Dryer's 1992 sample):

- (353) a. $VP[V_{PP}[P NP]] = 161$ (41%) b. $VP[PP[NP P] V] = 204$ (52%)
 c. $VP[V_{PP}[NP P]] = 18$ (5%) d. $VP[PP[P NP] V] = 6$ (2%)

Hawkins presents a number of processing principles to explain the fact that harmonic orders are preferred and disharmonic ones (of both types) dispreferred. The two most important of these principles are Minimise Domains and Maximise On-line Processing. Minimise Domains essentially seeks to minimise the distance between two linguistic elements whose syntactic properties enter into a dependency or combination relation (Hawkins to appear: 5). It means that the distance between two heads should be as small as possible, and this is achieved when languages are consistently head-initial or consistently head-final:

(354) $[_{CP} C [_{TP} T [_{VP} V \dots]]]$

(355) $[_{CP} [_{TP} [_{VP} \dots V] T] C]$

Any disharmony places other elements between heads and creates greater distance, as in (356), in which a head-final TP occurs with a head-initial CP and the two are separated by the VP:

(356) $[_{CP} C [_{TP} [_{VP} V \dots] T]]$

For Hawkins, the more complex the structure intervening, the rarer the construction should be. A simple DP between V and T is preferred over a more complex one, for instance, and CPs intervening should be rarest of all. This is true of one combination of elements for which both disharmonic orders are unattested: an NP with a CP complement (to appear: 7, citing Lehmann 1984). Neither a head-final NP with head-initial CP nor a head-initial NP with a head-final CP is found. As Hawkins points out, FOFC does not rule out this structure as NP is [-V] and CP is [+V]. Similarly, a head-initial VP with head-final CP complement is unattested, and this is not ruled out by FOFC because it involves a

head-initial phrase dominating a head-final phrase (to appear: 10).⁴⁵ A preference for simpler intervening phrases also offers a reason for the fact that FOFC does not hold between V and a DP or PP complement. Biberauer, Holmberg & Roberts have to explain this with their appeal to categorial distinctness, but for Hawkins DPs and PPs are lighter than CPs and as such are expected to occur in more FOFC-violating constructions. However, his theory then fails to predict that there is a tendency to harmony even with DPs (articles are verb patterners), as Sheehan (2010) notes.

Maximise On-line Processing is the principle that any properties should be assigned to a head as soon as they can be (to appear: 5). Therefore, as soon as a head X is processed, a 'Mother Node' should be 'constructed' (XP should be projected) or it should be attached to a Mother Node (enter into a selection relation, for instance). This, too, leads to a strong preference for harmonic orders as in disharmonic orders there is a delay between processing a phrase and assigning it as mother/daughter to another phrase. The two disharmonic orders go against both Maximise Online Processing and Minimise Domains, and so (Hawkins argues) are both dispreferred, although not ruled out completely.

Biberauer, Holmberg & Roberts (2012) argue against Hawkins's processing account. They note that the data he uses to exemplify the fact that the inverse FOFC order is attested often involve different EPs (as the notion of EP is not relevant to his theory), and they predict that FOFC will not apply in these cases. Although the inverse FOFC order, according to his data, is attested in an average of 15.9% of genera and the FOFC order at average 10.6%, the only apparently FOFC-violating combination he gives that is within a single EP is not attested at all. They argue that this is crucial: although the inverse FOFC order is admittedly rare, the FOFC order is non-existent in the relevant cases involving a single EP. In other cases, they note, the inverse FOFC order (e.g. [C [VP T]]) is not at all rare and may be found as often as the harmonic orders ([[VP T] C], in this case). They also argue that FOFC-compliant disharmonic orders involving lower heads are

⁴⁵ As noted before, Biberauer, Holmberg & Roberts (2012) argue that *[V[OVC]] is indirectly ruled out because a VO language cannot have final Cs, but it is possible if the main clause is head-initial and the embedded clause head-final.

likely to be rarer than higher ones, as higher heads are more likely to be initial (because head-finality spreads upwards through an EP).

3.3.2. *An Optimality Theoretic approach*

Philip (2012) gives an optimality theoretic account of the FOFC data, arguing (based on similar data to that used by Hawkins) that FOFC is too strong in disallowing some structures that do occur, and too weak in not ruling out some that do not. However, as discussed below, Biberauer, Holmberg & Roberts (2012) show that the non-occurring orders are in fact ruled out by FOFC, and furthermore her theory does not predict the high number of VO...Q languages, other than noting that final Q is preferred independently of syntax: as Greenberg (1966: 80) notes, intonation is 'reckon[ed]... from the end' in questions.

Philip argues that the crucial difference in linearisation patterns is in whether the heads involved are 'linkers': purely functional heads with no semantic content, like English *that*. She argues that where a linker is involved, only harmonic orders arise, and where the element is not a linker but a head with some semantic content (such as negation), both disharmonic orders are found (including the FOFC-violation), but are dispreferred. This pattern occurs because the following three violable harmony constraints operate on linkers:

(357) *Head-Proximate Filter*

The highest head in the extended projection of a Dependent must be linearly contiguous with the Head it is subordinate to.

Final-Clause

A clausal Dependent must follow the Head it is subordinate to.

Head Uniformity

A functional head must match the lexical head of its extended projection in the direction of headedness.

(Philip 2012: 72)

Philip claims that these constraints are ranked, with the Head-Proximate Filter taking precedence over the other two where there is conflict. She argues that this

ranking is universal, because it is based on ease of processing. She demonstrates the constraints' effect with the distribution of complementisers heading clausal complements to verbs. In VO languages, the constraints interact to ensure that one order is preferred, which obeys all three constraints. In OV languages, one of the two lower-ranked constraints must be violated, so either order that obeys the Head-Proximate Filter and violates one of them is possible:

(358) *VO languages:*

	Head-Proximate	Final Clause	Head Uniformity
V[CVO]			
*[VOC]V		*! ⁴⁶	*!
*[CVO]V	*!	*	
*V[VOC]	*!		*

(359) *OV languages:*

	Head-Proximate	Final Clause	Head Uniformity
[OVC]V		*	
V[COV]			*
*V[OVC]	*!		
*[COV]V	*!	*	*

(Based on Philip 2012: 76-77)

These constraints may be overridden by ordering rules relating to a lexical head's semantic features (or syntactic features referring to semantics), such as Neg-Initial or Neg-Final. If this type of rule overrides the harmony constraints, disharmony may arise. Disharmony is still dispreferred, because (to use the example of negation, as Philip does) the orders Neg[OV] and [VO]Neg can only be optimal when Neg-Initial/Neg-Final dominates both Head-Uniformity and Neg-Final/Neg-Initial. Any other ranking, Philip shows, leads to an optimal harmonic order. The same applies to question particles, which, as operators, have syntactic features related to the semantics and therefore are subject to such ordering constraints as Q-initial or Q-final.

Biberauer, Holmberg & Roberts (2012) counter Philip's claim and show that the facts can be derived by FOFC. In the case of complementisers heading clausal

⁴⁶ *! indicates that a constraint is fatally violated and the word order it relates to will not be produced. * indicates a non-fatal violation, and that constraint may be violated if required.

complements to V, Philip, like Hawkins, claims that FOFC fails to rule out the unattested inverse FOFC order [V [TP C]], where a head-final CP is the complement of a head-initial VP. This is the example discussed in e.g. fn.43. Biberauer, Holmberg & Roberts also point out that Philip's theory does not (but theirs does) predict the fact that [C [VP T]], the inverse FOFC order, is nearly as common as the harmonic orders (Biberauer, Holmberg & Roberts 2012: 45).

Philip notes herself (2012: 69) that the high proportion of final Qs in VO languages is not predicted, other than by the general preference for interrogative marking to be final. Presumably, she simply has to say that the constraint Q-Final is often highly ranked, but there is no obvious reason for this to be the case. She discusses negation, and shows that if the constraints Neg-Final and Neg-Initial are taken in conjunction with the Head Uniformity constraint (the other constraints she proposes in (357) are not relevant within a clause), harmonic structures are preferred over their disharmonic counterparts. In a VO language (or structure), if Neg-Final is ranked higher than Neg-Initial and Head-Uniformity, [[VO]Neg] will be optimal. However, if either of the other two constraints is ranked higher than Neg-Final, harmonic [Neg[VO]] is optimal (the lower two constraints are ranked equally so their relative order is immaterial):

(360)

	Neg-Final	Neg-Initial	Head-Uniformity
[[VO]Neg]		*	*
[Neg[VO]]	*!		

(361)

	Neg-Initial	Neg-Final	Head-Uniformity
[[VO]Neg]	*!		*
[Neg[VO]]		*	

(362)

	Head-Uniformity	Neg-Final	Neg-Initial
[[VO]Neg]	*!		*
[Neg[VO]]		*	

(Based on Philip 2012: 84)

Precisely the same pattern would hold for question particles, assuming that they are ordered by constraints Q-Final and Q-Initial. However, this is inconsistent with the facts. We have already seen that there is a disproportionately high number of final question particles in VO languages, and the same is true for negation, which Philip’s OT constraints cannot explain:

Table 9. Number of VO and OV languages with initial and final negation (Dryer 2011a, c).

	Initial Negation	Final Negation
VO	68	82
OV	11	49

The disharmonic order [Neg[OV]] is reasonably uncommon, with only 11 languages listed, but the other disharmonic order, [[VO]Neg], is the most common with 82 languages.

One further problem with Philip’s account is that it requires that head-final order be base-generated, as her constraints operate on base-generated orders. Part of her support for this position is the lack of CED effects exhibited by initial complements, a fact which Takita (2009) also uses to argue for base-generated final heads in languages such as Japanese. However, Sheehan (2010, 2012) demonstrates that this can be explained on her theory of a strict LCA, discussed in the next section, whereby CED effects occur as a result of spell-out when a structure is otherwise unlinearisable.

3.3.3. A PF-interface account

Sheehan (2010, 2012), in arguing for a strict version of the LCA and a copy theory of labelling for independent reasons, also derives the FOFC effects in a very elegant way. Sheehan (2012) formulates the ‘revised LCA’ in (363), in which linear order is determined by local c-selection and asymmetric c-command relations:

- (363) (i) If a category A c-selects a category B, then A precedes/follows B at PF.
(ii) If no order is specified between A and B by the sum of all precedence pairs defined by (i), then A precedes B at PF if A asymmetrically c-commands B.

(Sheehan 2012: 27)

Sheehan's (2012) definitions of c-command and the related notion of dominance are given in (364):

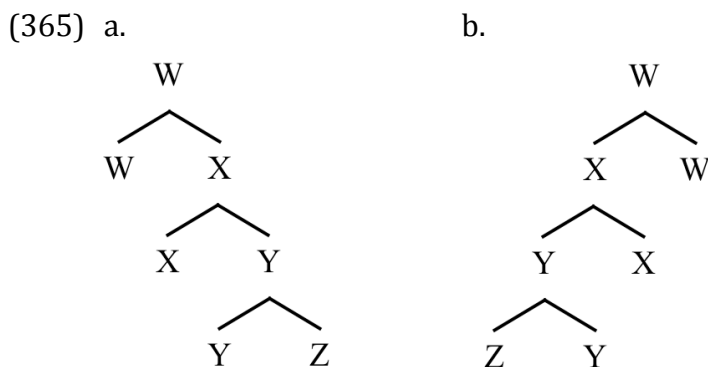
- (364) *C-command*: A c-commands B iff A and B are categories, $A \neq B$, A does not partially dominate B and any category which completely dominates A also completely dominates B.

Complete Dominance: A category X completely dominates a category Y iff $X \neq Y$ and the shortest path from every copy of Y to the root of the tree includes all non-terminal copies of X.

Partial Dominance: A category X partially dominates a category Y iff $X \neq Y$ and the shortest path from every copy of Y to the root of the tree includes a copy of X, but X does not completely dominate Y.

(Sheehan 2012: 24)

The result is that FOFC-violating orders cannot be derived. (365) shows that harmonic orders are unproblematic, with local c-selection relations giving the order $W > X > Y > Z$ when each category is set to precede the category it selects, and $Z > Y > X > W$ when each category is set to follow its selected category at PF:

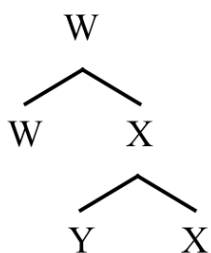


(Adapted from Sheehan 2012: 26-26)⁴⁷

⁴⁷ Sheehan (2012) indicates the parameter setting in (363i) with a subscript _P or _F on each category for 'precede' or 'follow'. This emphasises the fact that this is a linearisation parameter,

The ‘inverse-FOFC’ disharmonic order can also be linearised, although (363ii) is required to determine the order of pairs via asymmetric c-command. The disharmony is brought about by W being set to precede and X to follow the categories they select. Thus, W precedes X and Y also precedes X. There is no local selection relation between W and Y, but W asymmetrically c-commands Y, and therefore precedes it, giving the order $W > Y > X$:

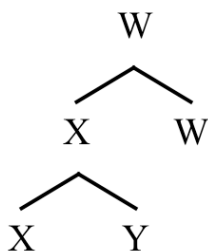
(366)



(Adapted from Sheehan 2012: 28-29)

Finally, the FOFC-violating configuration is shown in (367). Here, W is set to follow and X to precede their selected category (a head-final phrase dominating a head-initial phrase). X precedes both W and Y via selection, but W and Y are again not ordered with respect to each other. Once again, asymmetric c-command of W over Y gives the order $W > Y$, resulting in the total ordering $X > W > Y$, and not the $X > Y > W$ order that would constitute a FOFC-violation:

(367)

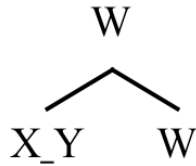


(Adapted from Sheehan 2012: 29)

and that the structural relations are identical in each case. However, I leave them out here and show the trees as ‘head-final’ and ‘head-initial’.

Sheehan argues that the only way that the order $X>Y>W$ can occur is when X and Y are spelt out, and merged in the derivation as an atomised unit:

(368)



An atomised phrase is not 'head-initial': its hierarchical structure is absent, and it enters into selection relations as a single unit. Such an element cannot be probed, and therefore the only elements able to select an atomised complement are those without uninterpretable features to satisfy. Sheehan (2012) argues that particles are just such deficient categories.

Atomisation causes strong island effects. This is why it is possible to extract from the clause preceding a particle in head-final languages like Japanese and Turkish, but not head-initial languages like Chinese (as Takita 2009 shows). Sheehan's account differs from Biberauer, Holmberg & Roberts in claiming that the structure ruled out by FOFC is not forbidden, but is simply not linearised. FOFC, for Sheehan (2009: 119), comes 'for free'.

Sheehan's analysis has the added benefit of explaining, among other things, why Japanese and other harmonically head-final languages do not show CED effects, if their complements consistently precede heads as Sheehan (2012) argues: head-final phrases are linearisable without atomisation. Head-initial languages, however, do seem to trigger such effects when they have final elements: Takita (2009) demonstrates this for a number of Mandarin final particles (although not the question particles *ma* and *ne*). Takita (2009) argues that the fact that Japanese does not display CED effects shows that it cannot be derived from a head-initial structure (as per antisymmetry). However, these facts can be explained if we adopt Sheehan (2012)'s analysis. She shows that head-initial phrases cannot be linearised with respect to a following selecting head, and so

for FOFC effects in general. For question particles, however, another explanation is needed.

3.4. Conclusion

This chapter has introduced FOFC and shown that question particles are in violation of it when they occur finally in VO structures. The evidence for FOFC is abundant and convincing, and as such I consider it to be correct in its descriptive import. Question particles must then be explained in some way that allows them to appear in apparently FOFC-violating contexts.

Such explanations have been put forward in this chapter, both those suggested by a theory of FOFC as it is in Biberauer, Holmberg & Roberts (2012) and those posited by authors who reject FOFC as a universal constraint, preferring instead to explain it in processing terms. Problems have been highlighted with each, and in this thesis I adopt and defend the idea suggested at the end of §3.2.2, namely that these question particles are disjunctive elements. While not without its own problems (discussed in Chapter 6), it accounts for much of the data and many of the observations about these particles.

Before presenting the analysis of the anomalous question particles, the syntax of ‘normal’ questions, those in which the particle is assumed to be a genuine question particle, is discussed. In Chapter 4 previous work on the syntax of questions is introduced and those features relevant to this work identified. Chapter 5 asks what it means to say that question particles are ‘C elements’ and proposes a syntax of polar questions. Chapter 6 and 7 expand upon the disjunction idea briefly introduced here.

Chapter 4. The Syntax of Questions

The previous chapter showed that the VO...Q word order seen in Chapter 2 is problematic for FOFC if question particles are assumed to be C-elements, the analysis most commonly offered for the syntax of question particles. In this chapter I give a description of questions and discuss the various types of question and the different kinds of ways in which they may be formed cross-linguistically. An overview of the literature is provided which shows the various 'left-periphery' analyses.

Many authors distinguish between the terms 'question' and 'interrogative', using 'question' for a type of utterance classified by its meaning and 'interrogative' for a syntactic classification. I endorse the distinction and generally speaking follow this convention. As my focus is on syntax rather than the syntax/semantics interface, I do not follow it as rigorously as has been argued for by e.g. Baker (1970) and Huddleston (1994).

'Interrogative' is used to describe a sentence type; that is, a category of sentence that is characterised by its form and contrasts with other types, such as declarative or imperative. These three types are frequently given as the basic sentence types, perhaps in part because these are the three types found in English (sometimes exclamative is given as a fourth type). They are syntactically mutually exclusive, as noted by Huddleston (1994), König & Siemund (2007) and many others. A sentence cannot simultaneously be interrogative and declarative, for instance. This is clearest in languages in which any sentence must contain some typing morpheme. König & Siemund (2007) illustrate with examples from Greenlandic Eskimo:

(372) iga-voq
cook-dec.3sg
'He cooks.'

(373) iga-va
cook-int.3sg
'Does he cook?'

(374) iga-git/ guk
cook-imp.2sg/ -imp.2/3sg
'Cook (something)!/ Cook it!'

(König and Siemund, 2007: 277-278)

The sentences in (372)–(374) are incomplete without the clause-typing morphemes, and the morphemes cannot co-occur. There is, then, a syntactic clause type '(polar) interrogative', and there is a speech act 'question'. The two may coincide but do not necessarily do so.

4.1. Types of questions

Huddleston & Pullum (2002), following Huddleston (1994), identify a number of types of question based on their form and their function. They list three distinct formal types:

(375) *Polar (or yes/no question):*
Is it breathing?

(376) *Alternative:*
Is it alive or dead?

(377) *Variable (or wh-question):*
Why isn't it moving?

(Huddleston and Pullum, 2002: 867)

These define the answer set: polar questions require an answer from a restricted set indicating the truth or falsehood of the proposition questioned. Alternative questions require an answer from the set of alternatives given in the question itself, and there may be more than two alternatives given. Variable questions typically define an answer set that is restricted in terms of the *wh*-word used, with *who* defining a set consisting of people, *when* defining a set of times, and so on, and contextually restricted (to a greater or lesser extent) within that set.

They then identify three 'dimensions' or pairs of marked and unmarked questions. The unmarked type (the (a) examples in (378)–(380)) may take any

of the forms in (375)–(377). The marked type (the (b) examples) may have a different form, with a negative, *shall* (in English) or with the *wh*-word *in situ*:

- (378) a. Neutral: Have you read it? b. Biased: Haven't you read it yet?
- (379) a. Information: What time is it? b. Direction: Shall I put some music on?
- (380) a. Ordinary (non-echo): What's he going to do? b. Echo⁴⁸: He's going to what?

(Huddleston and Pullum, 2002: 867)

I do not discuss *wh*-questions (information questions), direction questions or echo questions in any detail, concentrating only on polar questions. I discuss biased questions where relevant, but focus on neutral polar questions.

In Chapter 5 I formalise a different typology based on Bailey, Holmberg, Krzek, Sheehan & Sulaiman (2010), which refers to function only, as in (381)–(386) (examples mine):

(381) *Open question* (Huddleston & Pullum's neutral question):
Is 'Blue Hawaii' a good film?

(382) *Speculative question*:
I wonder if we'll ever know the truth?

⁴⁸ Note that for Huddleston & Pullum, an echo question is one in which repetition or clarification of an element of a previously-asked declarative statement is requested (e.g. in (380b), the preceding utterance may have been *The Prime Minister is going to make people work till they're 70 years old*, where the echo question asks for repetition of the VP, perhaps in incredulity). Other types of echo question may be identified, where the question is repeated to check that it was correctly heard or in incredulity (i, a genuine example from a student studying animal communication), or where no part of the preceding statement is questioned and the echo question is merely a conversational device:

- i. Student: So can red deer speak?
Me: Can red deer speak?
- ii. A: You know, the Beatles once went round to Elvis Presley's house.
B: Did they?/They did?

(The second variant, *They did?*, is infelicitous for me but acceptable for many speakers. Thanks to Wim van der Wurff for pointing out this type of echo question to Anders Holmberg, p.c.)

(383) *Embedded (indirect) question:*
I asked my supervisor whether he liked my latest chapter.

(384) *Request:*
Can you pass me the bread?

(385) *Alternative question:*
Are you a man or a mouse?

(386) *Biased questions:*
Haven't you already had dinner? (expected answer: yes)
You don't speak French, do you? (expected answer: no)
You've been to New York before, haven't you? (expected answer: yes)

The types in (386) crucially depend on intonation for their meanings. *You don't speak French, do you?* can be interpreted as meaning 'I didn't think you spoke French, but some new evidence suggests that you do – is that actually the case?' or 'I don't think you speak French, but can you just confirm that that is the case?' or even 'It's a long shot, but do you by any chance speak French?' depending on the intonation with which the utterance is spoken.

The question in (381), the open or neutral polar question, is the canonical type with which this thesis is primarily concerned. In asking a question of this type, the questioner usually seeks some information that they do not already have and that they believe their interlocutor to have and be willing to provide.

The speculative question in (382) is typically formed with a construction such as *I wonder...* or *I ask myself...* The embedded question may take the form of a normal embedded question with *if* or *whether*, as in (382), or it may, in more informal contexts, have the form of a main clause question, as in (387):

(387) I wonder, would a gorilla get seasick?

The questioner does not possess the information that is questioned, but they do not expect their interlocutor to possess it or give an answer. This is evident in the fact that this type of question is frequently used in self-directed speech (talking to oneself), where you obviously cannot expect yourself to know the

answer to a question you have posed yourself. It is however possible that speculative questions can be used in situations where an answer is sought from the listener, and in this case it is a politeness strategy. What is explicitly encoded is that the listener is not expected to know the answer or provide it, but what is implicitly understood is that the listener should provide that information if they do indeed know it. Consider the contrast between the exchanges in (388) and (389), where (388) is perfectly normal but B's reply in (389) (a real-life example) was met with surprise:

(388) A: I wonder if we have to fill in a cover sheet for this assignment?
B: I think we do.

(389) A: I wonder what happened to Space [a 1990s band]?
B: The lead singer formed a band called The Drellas.

Likewise, rhetorical questions, which are left aside here, are those to which an answer is not sought, either because the answer is generally known or is trivial information, because the questioner knows that the listener knows the answer but wishes to draw their attention to it for some reason, or because the questioner is about to answer the question (as in a speech, for instance):

(390) Is the Pope Catholic? [information generally known]

(391) Are you or aren't you the leader of this project? [questioner knows that listener is the leader but wishes to point out that listener is not behaving like a leader]

(392) Is this the best course of action to follow? I believe it is, for these reasons... [questioner immediately answers own question]

Requests like that in (384) may in fact not be true questions at all. They do not seek information, but rather are 'disguised imperatives' – they request that the addressee do something. It is not the case that it may be true or false whether the addressee can pass the bread. The fact that an answer is not sought is evident from the fact that it is odd to provide an answer in response to a request. This can be seen in the following exchange:

(393) A: Can you pass the bread?
B: #Yes.

Interestingly, adding an NPI to a request frequently has the effect of making it into an information-seeking question. This is the case in Swedish (Anders Holmberg, p.c.):

(394) #kan du någonsin skicka salt-et?
can you ever send salt-the
'Are you ever able to pass the salt?'

In English, although it is possible to utter a request including *at all*, it does not have its NPI interpretation, being rather a hedging or politeness element. If it does have full NPI interpretation, the question becomes a true question:

(395) Can you pass the salt at all?

Alternative questions, as in (385), are those in which the possible answers are given in the form of the question. Huddleston (1994) notes that the three types of question (polar, alternative and variable, as in (375)–(377) above) constitute just two syntactic clause types, which he calls closed and open interrogatives. The former comprises polar and alternative questions, which are formed with subject-auxiliary inversion in main questions and *whether/if* in embedded questions; and the latter variable questions, which are formed with inversion (in main questions) and the addition of a *wh*-word. Polar questions and alternative questions are therefore closely related, and it is necessary to distinguish between them.

Polar questions, although implicitly asking the addressee to choose between the two polarity values for the questioned proposition, do not explicitly state the two answers. Alternative questions do, providing the two (or more) possible answers in the form of the question. It is possible to ask an alternative question in which the alternative answers are the same as the answers to a polar question, as in (396) (Huddleston 1994: 418):

(396) Are you ready, or not?

For Huddleston, the important factor in distinguishing types of question is not the answer to the question, which in this case fails to distinguish polar from alternative questions, but the way in which the answers are ‘derivable from the propositional content of the question’ (1994: 418). He further notes that there are differences in the environments in which they can occur: *doubt* can take a polar question complement but not alternative or variable, and the ‘concessive adjunct construction’ takes alternative and variable questions, but not polar questions (Huddleston 1994: 418–419):

(397) I doubt whether you are ready.
*I doubt whether it is a boy or a girl.
*I doubt where she is.

(398) *I’m marrying her whether you like her.
I’m marrying her whether you like her or hate her.
I’m marrying her whatever you feel about her.

‘Biased question’ is the term I use for any question where ‘the speaker is predisposed to accept one particular answer as the right one’ (Huddleston & Pullum 2002: 879). Huddleston & Pullum give three types of bias: epistemic (the speaker thinks or knows that one answer is correct), deontic (the speaker thinks one answer ought to be the right one), and desiderative (the speaker wants one answer to be right):

(399) Doesn’t she like it? (Negative epistemic bias)

(400) Aren’t you ashamed of yourselves? (Negative deontic bias)

(401) Can I have some more ice cream? (Positive desiderative bias)

(Huddleston & Pullum 2002: 879-880).

Biased questions may be syntactically marked with negation or a tag (cf. Katz & Postal 1964: 96-97):

(402) Won't she be angry?

(403) She'll be angry, won't she?

(404) She won't mind, will she?

In English, biased questions always feature a marked intonation contour. This allows for the interpretation of declarative questions (those not syntactically marked as interrogatives) as biased, either positively or negatively (neutral questions cannot be marked by intonation alone in English; see e.g. Hirst (1998), and Chapter 5 and the references cited there):

(405) They've finished? (positive bias)

(406) They haven't finished? (negative bias)

(Huddleston & Pullum 2002: 881)

Catell (1973) discusses matching polarity tags, as in (407), in which both the declarative portion of the sentence and the tag have positive polarity (Catell 1973: 615):

(407) This book is obscene, is it?

Lakoff (1969: 142) claims that these questions are sarcastic, which is certainly one possible interpretation, but Catell suggests that in fact the right characterisation of these tags is to say that 'the host clause is not put forward as the speaker's own point of view' (1973: 615). The speaker is citing an opinion and asking the listener if he holds this opinion. He exemplifies this with the following dialogue, in which a speaker responds felicitously to some information with a matching polarity tag (Catell 1973: 615):

(408) John: I have translated that Russian sentence for you. It means,
'Necessity is the mother of invention.'

Harry: It means, 'Necessity is the mother of invention', does it?

Harry gives the declarative part of the utterance as an opinion which is not his own, and asks John to confirm that it is his. In (409), however, Harry cannot

respond with a contrasting polarity tag, because it is interpreted to mean that the declarative is his own view, and he is apparently telling John something that John has just told him (Catell 1973: 615):

- (409) John: I have translated that Russian sentence for you. It means,
'Necessity is the mother of invention.'
#Harry: It means, 'Necessity is the mother of invention', doesn't it?

Furthermore, Catell (1973: 616) notes that matching polarity tags may be attached to interrogatives as well as declaratives, while contrasting polarity tags may not:

(410) Did John drink beer, did he?

(411) *Did John drink beer, didn't he?

Catell claims that this is because the contrasting polarity tag indicates that the preceding clause is the speaker's opinion (an assertion), and therefore it must be in the form of a declarative. A matching polarity tag does not have this requirement.

A form of biased question discussed in detail in Chapter 5 is the 'rising declarative'. This is, roughly, a question with the form of a declarative used to indicate surprise or disbelief or to confirm a belief:

- (412) A: We'll have to take on more responsibility now that I've fired everyone else.
B: You've fired all the staff? (Why would you do such a thing?/You've fired all of them, have you?)

This question type is discussed at length in the next chapter, where it is relevant for the justification of the syntax of questions argued for there.

A type of question that I do not dwell on here is the echo question. These are questions which do not seek an answer but rather seek to confirm the preceding utterance. They can follow declaratives or interrogatives and typically either

take the same form but have rising final intonation (to confirm or exclaim at the preceding utterance) or include a *wh*-word in situ (to question or exclaim at some part of the preceding utterance):

(413) I'm moving to Japan next month.
You're moving to Japan?
You're moving where (next month)?/Who's moving to Japan (next month)?/You're moving to Japan when?

(414) Has the window cleaner been this week?
Has the window cleaner been this week (...did you say)?
Has the who been this week?
Has the window cleaner what this week?
Has the window cleaner been when?

(415) What do you want for supper?
What do I want for supper (...did you say)?
What do I what for supper?
What do I want for what?

In addition, there are 'echo tags':

(416) I can't stand macaroni cheese.
Can't you?⁴⁹

Echo questions therefore have no specific syntactic form or function of their own.

4.1.1. Answers to questions

In this section, I turn briefly to the answers to polar questions. Questions can have a neutral question form, which in English is the word order of an affirmative declarative with inversion of the subject and auxiliary, as in (417). Other types of questions are biased in some way. As indicated above, biased questions presuppose the answer to the question asked, whether positive or negative. In English, these are syntactically marked with a negative question, as

⁴⁹ *You can't?* is also acceptable for many speakers.

in (418), where the expected answer is *yes*, or with a tag. The tag has the reverse polarity of the sentence to which it is appended, and the expected answer matches the polarity of that sentence (and thus has the opposite polarity to the tag), as in (419), where the expected answer is *yes*, and (420), where the expected answer is *no*:

(417) Was Genghis Khan an evil man?

(418) Wasn't Genghis Khan an evil man?

(419) Genghis Khan was an evil man, wasn't he?

(420) Genghis Khan wasn't an evil man, was he?

The bias accorded to tag questions (and possibly negative questions, although this is not as clear) appears to be universal, but the expected answer varies from language to language depending on the answer given to negative questions. In English, the answer given is consistent with the truth value of the proposition questioned: if the answer is that Genghis Khan was not an evil man, the answer is *no* to both (419) and (420), and conversely, if the answer is that Genghis Khan was evil, the answer to both questions is *yes*. In other languages, the answer is consistent with the polarity of the question: if Genghis Khan was evil, the answer to either question is equivalent to saying *Yes, that's correct (he was/wasn't an evil man)* or *No, that's incorrect (he was/wasn't an evil man)*.

Givón goes further than this and argues that affirmative questions in English have a bias towards a negative answer in the same way that negative questions are biased towards a positive answer, giving a gradation like that in (421):

(421) Strongest bias towards the negative

- a. John didn't eat the salami, did he?
- b. Did John eat the salami?
- c. Didn't John eat the salami?
- d. John did eat the salami, didn't he?

Strongest bias towards the positive

(Givón 2001: 292)

For Givón, this is due to the uncertainty the speaker has towards the fact of John's eating the salami: the speaker has reason to doubt that John ate the salami. However, it is easy enough to construct a context in which an affirmative (or rather, non-negative) question can be used when the speaker has a degree of suspicion that John may well have eaten the salami:

- (422) A: We're going to the market later and there's this stall there selling salami described as the hottest in the world. I'm a bit worried because you know what John's like...
B: [Later on, after A returns] Did John eat the salami?

B's question in (422) is fully consistent with an expectation that John did eat the salami, as well as that he did not, as is evident from the fact that either of the two tag questions is acceptable in the same context and gives the same bias.

Furthermore, the non-negative question may be used in contexts where the speaker has no idea of the answer. Givón's reasoning is presumably based on the fact that simply asking a question means that you do not know that the questioned proposition is true and therefore have uncertainty that it happened. However, it also means that the speaker does not know that the proposition is not true.

Van Rooÿ & Šafářová (2003) claim the opposite of Givón, and state that questions have a bias towards the alternative(s) expressed in the question: positive questions have a positive bias, negative questions have a negative bias, and alternative questions express neutrality. AnderBois (2011) shows that this is too strong an argument, with positive questions possible in neutral contexts as a sort of 'default' question, and with a negative bias if the negativity is marked in some way, such as with an NPI (Asher & Reese 2005).

Further evidence of the potential neutrality of positive questions is the fact that where the answer *yes* to (421a) above is highly marked (and *no* is unmarked), either answer *yes* or *no* to (421b) is unmarked. This is evident from the fact that *yes* alone, with neutral intonation, is infelicitous in answer to (421a) and

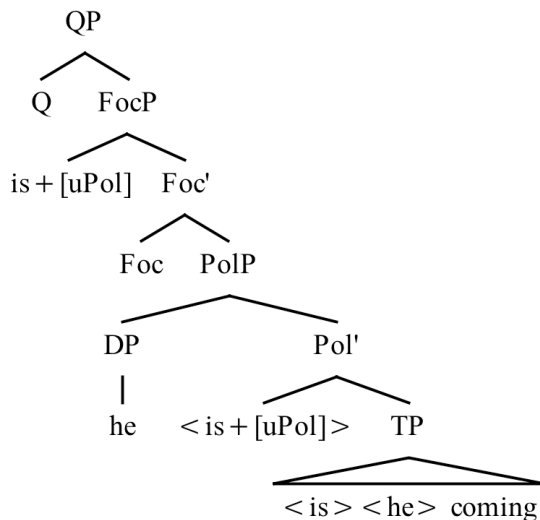
requires either a marked intonation or repetition of subject and auxiliary, whereas in (421b), *yes* may stand alone with neutral intonation as well as *no*:

(423) John didn't eat the salami, did he?
No/!Yes/Yes, he did.

(424) Did John eat the salami?
No/Yes

Holmberg (2007, 2012) explains the difference between (423) and (424) with an ellipsis account of the syntax of polar answer particles. He argues that such replies are full CPs with the affirmative or negative particle in FocP. There is an unvalued polarity variable in Pol (the highest head in the TP), which is probed by Q and attracted to Spec,FocP in questions as the questioned element (i.e. the question means 'tell me the value of the variable Pol') (Holmberg 2012: 57):⁵⁰

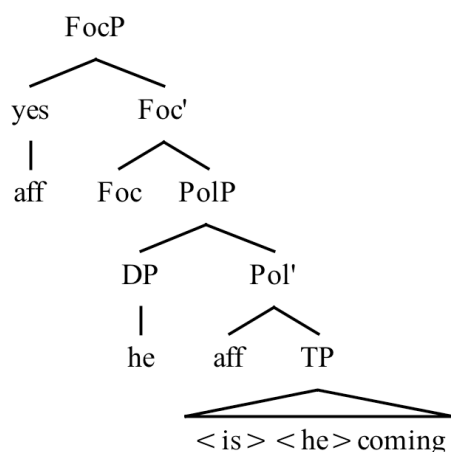
(425)



In answers, the affirmative or negative operator (*yes* or *no*) assigns a value to the unvalued Pol. The PolP is deleted when it is identical to the PolP of the question (Holmberg 2012: 58):

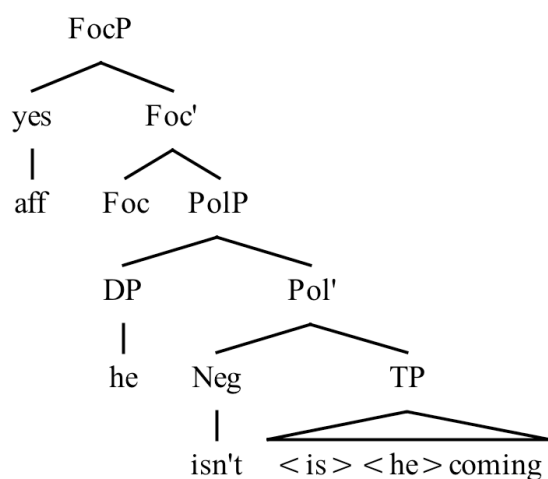
⁵⁰ Note that most theories do not permit a head to move to a Specifier position. However, some approaches (e.g. Bardeas 2008) argue for just such an operation as compatible with a Minimalist Theory which recognises heads and phrases in terms of their structure, rather than head or phrase positions. Thanks to Theresa Biberauer, p.c., for raising this point.

(426)



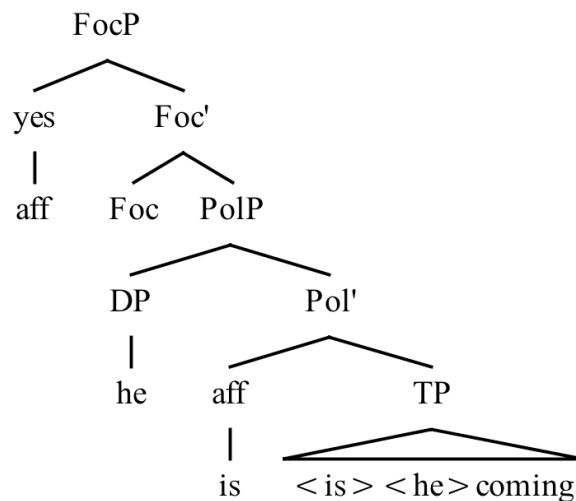
If PolP is not identical, it cannot be deleted, and this is the case in biased questions. In negative questions, Pol has a negative value and there is no variable for the affirmative operator to bind, and a simple *yes* answer is not grammatical (based on Holmberg 2012: 59):

(427)



However, if there is an unvalued variable that the operator can bind, the TP is identical and can be deleted, leaving the grammatical answer *Yes he is* (based on Holmberg 2012: 59):

(428)



4.2. Types of question formation

This section introduces the various ways in which polar questions can be formed cross-linguistically and gives some background information on particles, the most common single question-marking device.

Interrogative intonation is generally claimed to be present in the vast majority of languages. The normal question intonation is a final rising contour. Ultan (1978: 211), for example, says that 'intonation in yes/no questions typically consists of a rising or higher-pitched or -stressed terminal contour, always in prepositional languages and nearly always in postpositional' (although cf. Chapter 5: §2 on British English yes/no question intonation). Ultan slightly weakens this claim on p.213 of the same work, stating simply that 'many languages make use of a terminal rising contour to designate a yes/no question'.

Bolinger (1978) notes that 70% of languages in a 250-language sample have a rising final pitch in polar questions, and that the other 30% have a higher overall pitch. Hirst & Di Cristo (1998: 25) also note that high final pitch is 'by far the most commonly described characteristic of questions' and that most of the languages described in their volume use this pitch for yes/no questions

(although some do not, and for others the high pitch is on the final stressed syllable rather than being absolutely final).

However, rising intonation is not universal. Hirst & Di Cristo (1998) note that there is no final rising intonation reported for Danish, Finnish (see also Chapter 5), Hungarian, Bulgarian, Russian, Western Arabic or Brazilian Portuguese in their sample. These languages are distinguished from declaratives either by an overall higher pitch rather than a rise, or by lacking the lowering of pitch of declaratives (Danish/Vietnamese). In addition, the Gbe languages have final falling intonation on questions (Aboh 2010). In Gungbe, the question ‘particle’ is a final low tone, but in Fongbe there is a full question particle morpheme (Aboh 2010: 26-27):

(429) Kòfí xò mótò? [Gungbe]
Kofi buy car-Q
‘Did Kofi buy a car?’

(430) é dù nú à? [Fongbe]
3SG eat thing Q
‘Did he eat?’

Note also that these intonation patterns are specifically for polar questions; the intonation patterns for *wh*-questions, tag questions, echo questions and the like are typically quite different. In English, for example, *wh*-question intonation is described as falling, as in a declarative, rather than rising. Chapter 5 explores intonation in British English questions, including questions formed with intonation only, in greater detail.

Of those languages that have a specific polar interrogation intonation, it usually functions alongside one or more of the other (morphological or syntactic) types of question. However, some languages mark true syntactic questions solely with intonation. Interrogative intonation alone is the usual question form in 67 (138,

33)⁵¹ of the 289 (842, 122) genera surveyed in Dryer (2005e), including Maori (Austronesian, New Zealand) and Kikuyu (Niger-Congo, Kenya).

Where intonation is a secondary question-marking device, questions can be formed in a number of other ways cross-linguistically. The most common way of doing so is with a particle: 208 genera (520, 81) out of 289 (842, 122) are listed on the World Atlas of Language Structures (Dryer 2005e) as using this construction. The use of a question particle is exemplified in (431):

(431) *Polish (Indo-European, Poland):*

Czy Marta lubi koty?
Q Martha like.3SG cat.ACC.PL
'Does Martha like cats?' (Magdalena Sztencel, p.c.)

The second most common construction is the use of interrogative verbal morphology, which is employed by languages from 89 (155, 55) genera including Uzbek (Altaic, Uzbekistan/Afghanistan), Korean (Korean, Korea) and West Greenlandic (Eskimo-Aleut, Greenland). It must be noted, however, that these languages are overwhelmingly OV languages (73 (132, 45) compared to 15 (15, 13) VO) and it is difficult to distinguish between verbal morphology and a final question particle in OV languages. Dryer (2005e) defines interrogative verbal morphology as 'an affix that specifically signals that the utterance is a question' and gives the example in (432):

(432) *Tunica (isolate, Mississippi):*

lɔ'ta wi-wa'nǎ-n
run 2SG-want-Q
'Do you want to run?' (Haas 1940: 118)

Where possible, phonological information can be used to distinguish between independent words and affixes. Ginsburg (2009: 90) notes that in Japanese it is possible (if slightly odd) to pause before the question particle *ka*, but not before a suffix such as the present tense *-masu*:

⁵¹As in Chapter 2, numbers of genera are compared throughout in order to reduce bias from genetic and areal factors. The bracketed figures following number of genera refer to (languages, families).

(433) *iki-PAUSE-masu
go-PAUSE-PRES
'go'

(434) ?(anata-wa) ikimasu PAUSE ka
you-TOP go PAUSE Q
'Are you going?'

In Tamil, the clitic *-aa* is used to form a question, as in (435)–(437), and it can trigger the loss of the final vowel on the verb, as seen in (437) (Harold Thampoe, p.c.):

(435) a. vanthan
'he came'

b. vanthanaa
'did he come?'

(436) a. saapittal
'she ate'

b. saapittalaa
'did she eat?'

(437) a. oodiyathu
'it ran'

b. oodiyathaa
'did it run?'

-aa, which also means 'or', as in many of the other languages discussed in this thesis, is considered a clitic rather than an inflection because it can attach to other constituents than verbs. It tends to follow the verb because the verb is usually final in OV languages. Dryer does note that many final question particles can 'loosely cliticise' onto the verb, and any morpheme that attaches to the verb is counted as verbal morphology even though it may be better classified as a clitic in some cases. I have not been able to find examples from the few VO languages with interrogative verbal morphology. Some have prefixation, rather than suffixation, so that again it is hard to tell whether an affix, a clitic or a

particle is the device employed. In Salinan, for example, listed in Dryer (2005e) as having verbal morphology, the verbal stem is prefixed with the proclitic form of the pronominal subject to mark interrogativity. This can be seen in (438), where the morpheme *o-* is the pronominal prefix and signals a question:

(438) *Salinan (Salinan, Unites States):*
o-ki' heyo'
[no gloss]
'Is he going?' (Mason 1918: 43)

The use of a special word order, as in English, accounts for just six genera (12, 3) from Dryer's (2005e) sample. Other languages may have a mixture, or mark questions by virtue of the absence of a declarative morpheme, as in Zayse (Afro-Asiatic, Ethiopia). Most languages have more than one way of forming questions; thus French has word order, intonation and particle questions (though they have different pragmatic effects), and many languages also have the option of appending a declarative sentence with a tag question, like English *isn't it* or Russian *ne pravda* 'not true'. It can be difficult to distinguish between tags and question particles, as in the case of Thai, discussed in more detail in Chapter 7. Thai has several 'question particles', many of which (like *chây-măy*) are analysed as being tags. However, these 'tags' differ from those in English in that they can be used in embedded questions. One criterion is that tags frequently (and perhaps universally) signal a biased question. It is also possible that a tag might develop into a question particle, although this scenario is not explored in detail in this thesis.

4.2.1. Particles

Of those languages that use a particle to mark polar questions, the particle overwhelmingly appears in one of three sentence positions. Of the 194 (468, 77) genera with question particles in Dryer (2005c), 59 (118, 29) have initial particles as in (431), repeated here as (439), and (440):

(439) *Polish (Indo-European, Poland):*
Czy Marta lubi koty?
Q Martha like.3SG cat.ACC.PL
'Does Martha like cats?' (Magdalena Sztencel, p.c.)

(440) *Tzotzil (Mayan, Mexico):*
la k'ol Aa Teeko chjaay?
Q be youth Diego at.home
'Is Diego at home?' (Aissen 1987: 330)

Second position accounts for 32 (45, 22) genera, as in (441) and (442):⁵²

(441) *Latin (Indo-European, ancient):*
me-ne fugis?
1SG.ACC-Q flee.2SG
'Is it me you are running away from?' (Virgil, Aeneid 4.314)

(442) *Finnish (Uralic, Finland):*
sataa-ko ulkona?
rains-Q outside
'Is it raining?' (Anders Holmberg, p.c.)

Final position is the most common with 117 (273, 48) genera in Dryer's sample, as in (443) and (444):

(443) *Japanese (Japanese, Japan):*
Taroo-ga hon-o kaimasita ka?
Taroo-NOM book-ACC bought.POL Q
'Did Taro buy a book?' (Hagstrom 1999: 5)

(444) *Mupun (Afro-Asiatic, Nigeria):*
wu naa mun-e
3M see 3PL-Q
'Did he see us?'⁵³ (Frajzyngier 1993: 360)

⁵² There are in theory two kinds of second position particles: those that appear following the first constituent, and those that appear strictly following the first word. The difference between these two is then a difference between the syntax, which recognises constituents, and the phonology, which recognises words (Theresa Biberauer, p.c.). However, languages in which the particle follows the first word, like Latin, allow certain exceptions to the rule, indicating that it may not be a purely phonological process. I do not discuss this distinction in this thesis.

⁵³ This is the translation as given in the source. I have not been able to ascertain whether it should be 'us' or 'them'.

The remaining languages have particles in either of two of the above positions, usually initial and final, as in (445) (20 genera), or no fixed position, as in (446) (8 genera), where the particle serves to focus and question one constituent.

(445) *Hunde* (Niger-Congo, Democratic Republic of Congo):

(mbéni) ámukátsí mu-lómbe (hé)
 Q woman NC-lazy Q
 'Is the woman lazy?' (Kahombo 1992: 171, cited in Dryer 2005c)

(446) *Imbabura Quechua* (Quechuan, Ecuador):

wasi-man=chu ri-ju-ngui
 house-to= Q go-PROG-2
 'Are you going to the house?' (Cole 1982: 15, cited in Dryer 2005c)

In (445), one and only one of the particles must be present to mark the question, but it can be either the initial or final particle. In other languages, the two particles may be the same, whereas in *Hunde* they have different forms. The particle in (446) is attached to the PP, questioning that constituent. A neutral question has the particle attached to the verb.

This thesis discusses final question particles, particularly those that occur in VO languages, as illustrated in Chapter 2. In Chapter 7 it is explored whether the same analysis can be applied to particles in other positions and in OV languages.

Particle in wh-questions

Languages with question particles may also have a particle in *wh*-questions.

Japanese, for example, has the optional particle *ka* in both:

(447) ano heya wa kirei desu ka?
 that room^{TOP} clean be Q
 'Is that room clean?' (Hinds 1986: 9)

(448) Hideya-wa (*ka) nani-o (*ka) kaimashita (ka)?
 Hideya-TOP what-ACC bought Q
 'What did Hideya buy?' (Ginsburg 2008: 140)

However, there are ‘only... a few’ languages with an obligatory particle in *wh*-questions, all with bound question morphemes according to Givón (2001: 296). He cites Sadock & Zwicky’s (1985) examples from Greenlandic Eskimo, where the question particle is used in both polar and *wh*-questions:

(449) piniar-p-oq
hunt-ASP-INDIC
‘He is hunting.’

(450) piniar-p-a?
hunt-ASP-Q
‘Is he hunting?’

(451) kina piniar-p-a?
WH hunt-ASP-Q
‘Who is hunting?’

(Sadock & Zwicky 1985: 184, cited in Givón 2001: 296)

While it seems plausible that aspects of any analysis of polar questions might be transferable to *wh*-questions, there are good recent treatments of such particles (e.g. Cable 2010) and I do not discuss them in this work.

4.3. Syntax of questions

4.3.1. Evidence for a Q feature in interrogatives

One important issue is what it is that ‘makes’ a question. What is present in a clause to cause it to be interpreted as a question rather than an assertion or any other sentence type? The answer to this on most accounts is that some kind of question feature or morpheme ‘Q’ must be present in questions and absent in non-questions (e.g. Katz & Postal 1964, Baker 1970, Cheng 1991, Roberts 1993, Chomsky 1995).

Katz & Postal (1964) provide an early argument for Q, claiming that with no morpheme to bear the question meaning, there is no way to identify the sentence

questions, include both a Q morpheme and a *wh*-morpheme, the Q morpheme meaning ‘I request that you answer’ and the *wh*-morpheme indicating what is questioned. Both morphemes are always either present (in questions) or not present (in declaratives) on their account, however, making it hard to motivate two separate elements. In Chapter 5, I present an analysis that builds on Katz & Postal’s account, expressed in terms of Minimalist theory. The morpheme Q is taken to be an operator in the CP domain, which binds a polarity variable. The variable is often marked overtly with a particle (cf. Holmberg’s (2012) analysis). This provides some motivation for the two morphemes Katz & Postal postulate: Q requires an answer, and the variable is associated with and focuses what is questioned. In fact, the analysis in Chapter 5 argues that the variable is associated with a Polarity head which may be affirmative or negative, and as such is directly comparable with the ‘X’ that Katz & Postal analyse as ‘yes’ or ‘no’ in *I request that you answer ‘X I will go home’*.

For Katz & Postal, Q is not present in embedded questions, as they do not have the meaning ‘I request that you answer...’. They formulate movement rules which front a *wh*-phrase in *wh*-questions or invert the subject and auxiliary in all main clause questions. The rules apply only to those sentences with an initial Q, namely direct questions. There is a further rule which deletes a sentence adverbial where it dominates *wh* and is preceded by sentence-initial Q. In other words, it deletes *whether* in main clause questions but not in embedded questions, where the Q is not sentence-initial. Support for the movement rule and this main/embedded clause distinction comes from the distinction between (456), with no auxiliary fronting, and (457), with a fronted auxiliary and the main clause shifted to the end of the sentence:

(456) I wonder when John came home.

(457) When did John come home, I wonder?

(Katz & Postal 1964: 110)

However, Baker (1970) argues against this direct/indirect question distinction and argues that Q is present in all questions in English. He notes that Q cannot

mean 'I request that you answer' based on examples such as (458) (Baker 1970: 202):

(458) Did John get to school on time, I wonder?

The subject-verb inversion indicates that Q must be present in (458), but it does not have the illocutionary force of a question seeking an answer. Furthermore, there is a problem for those languages in which the same form is used for both main and embedded questions.

Baker argues that the presence of Q in all (English) questions, direct and indirect, accounts for the movement of *wh*-words and *if/whether* to initial position. He notes that Greenberg's (1966) data support this, with a tendency for languages to move *wh*-words to the same position as their question particles.⁵⁵ Then in English, *if* and *whether* are inserted as lexical realisations of Q, and likewise for particles or other question words in languages that have them. He hypothesises (1970: 207-8) that only languages which place their question particles in initial position can have a movement rule for questioned constituents (i.e. *wh*-phrases), and that the only movement possible for such languages is to initial position. Thus there can be no language with a final particle which also fronts *wh*-phrases, and there can be no movement of *wh*-phrases to final position, even if the question particle occurs there.

Baker also notes that if the moved constituent is regarded as 'replacing' Q, this explains why only one constituent can be moved, as in (459)-(461) (Baker 1970: 209):

(459) Who gave what to whom?

(460) *Who what gave to whom?

(461) *Who what to whom gave?

⁵⁵ Baker actually cites it as an absolute, that SOV languages all have final particles and do not 'regularly' front their *wh*-words. He also says there is no SVO language except possibly Yoruba (cf. Bamgbose 1966) which has final particles and initial *wh*-words.

Q is an operator, which binds particular phrases. Once a *wh*-phrase has moved to Q, no other phrase can also move to the same position (in his terms, Q ‘no longer appears in the tree’). Equally, a *wh*-word cannot co-occur with *if* or *whether* (Baker 1970: 211):

(462) *We’re not sure if who Bill saw.

Baker acknowledges that a language would be a counter-example to this analysis of Q if a) the same question particle is found initially in polar and *wh*-questions, as the particle should replace Q, thereby preventing it from attracting a *wh*-phrase, or b) *wh*-phrases move to a position adjacent to the particle and therefore do not replace it. Luiseño, exemplified in (469)-(471) is potentially a counter-example to a). I have not been able to find examples of languages as described in b). Bruening (2007) points out that there is no correlation between *wh*-in situ and question particles, as plenty of languages have both *wh*-movement and a question particle. However, he specifically discusses polar question particles, as he is testing the correlations proposed by Cheng (1991), which refer to polar question particles.

Ginsburg (2009) notes that the most direct evidence of a Q feature is the presence of an overt Q morpheme, as in languages with a question particle (where the particle serves only to transform a declarative into a neutral interrogative). He cites languages with a Q morpheme, such as Japanese, Korean, Yavapai and Luiseño, which types clauses as interrogative and appears in both polar and *wh*-questions. He takes this as evidence for a Q feature being present and contained within the Q morpheme. Examples are as in (463)-(471):

(463) *Japanese (Japanese, Japan):*
 kare-wa ie-ni kaerimashita.
 he-TOP home-DAT went
 ‘He went home.’

(464) kare-wa ie-ni kaerimashita ka?
 he- TOP home- DAT went Q
 ‘Did he go home?’

(465) kare-wa doko-ni ikimashita ka?
he- TOP where-DAT went Q
'Where did he go?' (Ginsburg 2009: 72)

(466) *Korean (Korean, Korea):*
Mary ka o ass ta
Mary NOM comePAST DECL
'Mary has come.'

(467) Mary ka o ass ni?
Mary NOM comePAST Q
'Has Mary come?'

(468) nwukwu i ni?
who be Q
'Who is it?' (Jang 1999: 849, 851, cited in Ginsburg 2009: 73)

(469) *Luiseño (Uto-Aztecan, California):*
Xwaan 'aamoq.
Juan hunting
'Juan is hunting.'

(470) Xwaan su 'aamoq?
Juan Q hunting
'Is Juan hunting?'

(471) hax su 'owo'aq?
who Q working
'who is working?' (Hyde 1971: 20, 23, cited in Ginsburg 2009: 74-5)

Note the important point that the Q morpheme is not simply the realisation of a Q feature; if it were, Ginsburg points out, a language would only be able to have one Q morpheme, or at most it could only have Q morphemes that all behave identically. Many languages in fact have a number of Q morphemes with differing syntactic and semantic behaviour. For example, Ginsburg cites Thai, which as we saw in Chapter 2 has a question particle *mǎy*. It is restricted syntactically, in that it cannot be used with a nominal predicate or a negative predicate, and it is restricted semantically in that it is used to question information that 'belongs exclusively to the addressee'. It is therefore commonly used to ask questions about emotions, desires and other personal matters.

(472) dii-cay máy?
glad Q
'Are/were you glad?'

(473) cèp máy?
hurt Q
'Does/did it hurt?'

(474) yaak cà khuy tò máy?
want NCM talk continue Q
'Do you want to continue talking?'

(Iwasaki & Ingkaphirom 2005: 280)

On the other hand, the particle *rú-plàaw* (which means 'or not') is used when the information sought is more public in nature, when the speaker wishes the addressee to make a choice, and with a nominal or negative predicate.

(475) mûa-waan pay kin khâaw kàp níramon rú-plàaw?
yesterday go eat rice with Niramom Q
'Did you go to have dinner with Niramom yesterday?'

(476) pay dûay-kan rú-plàaw?
go together Q
'Do you want to go with me, or not?'

(477) khâw pen fœn khun-àpíchâat rú-plàaw?
3 COP girlfriend TL-Apichat Q
'Is she Mr. Apichat's girlfriend?'

(478) mây sabaay rú-plàaw?
NEG comfortable Q
'You are not feeling well, right?'

(Iwasaki & Ingkaphirom 2005: 283)

In addition, there is a particle *rú-yaŋ* for perfect/anterior questions, and *rú* for questions about which the questioner has 'intense curiosity' (Iwasaki & Ingkaphirom 2005: 284-5). Ginsburg (2009) also discusses Japanese, which has a number of particles that differ with regard to whether they can appear in polar or *wh*-questions, whether they can appear in matrix or embedded questions, and their level of politeness. Ginsburg argues that because the various Q morphemes that can be found in a language differ in these syntactic and semantic ways, they

must be composed of unique sets of features. They all contain a Q feature but do not consist solely of it.⁵⁶

Variation in the use of question particles is also evident in Supyire (Niger-Congo, Mali). According to Carlson (1990), it has a Q particle *la*, which is the most common way of marking a question. It also has the Bambara loan *wá* and, for some speakers, *kè*, all of which can mark neutral yes/no questions. Furthermore, it has two clause-initial Q particles, both of which are heavily biased, *tàhà* and *tá* or *ká*.

(479) u sí m̀-pà la?
 she FUT FP-come Q
 'Will she come?'

(480) pi na ma wá?
 they PROG come.IMPV Q
 'Are they coming?'

(481) mu sí m̀-pà ǹmpanḡa k̀è?
 you FUT FP -come tomorrow Q
 'Are you coming tomorrow?'

(482) tàhà mu supyííbí p̀ì na nyɛ cyàgɛ k̀è e?
 Q your people.DEF IND PROG be place.DEF IN in
 'Are some of your people someplace (else)?'

(Carlson 1990: 889-891)

Tauya (Trans-New Guinea, Papua New Guinea) has different Q particles according to whether it is a noun or a verb that is questioned:

⁵⁶ The other features in the Q morpheme, for Ginsburg, are whether the morpheme is overt or covert [\pm overt] and whether it is an affix or a free morpheme [\pm affix]. These features taken together account for the variety of question-marking strategies found in the world's languages:

Table 1. Feature specification of question-marking devices, based on Ginsburg (2009: 84).

Features	Question-marking device
[+Q, +overt, +affix]	Pronounced affix
[+Q, +overt, -affix]	Pronounced free morpheme
[+Q, -overt, +affix]	Null affix (movement of a lexical item to C)
[+Q, -overt, -affix]	Null free morpheme (intonation)

(483) ?e fena?a-ra afe na-pi-yae?
 DEM woman-TOP mother 2S-GEN-Q
 'Is that woman your mother?' (Macdonald 1990: 163)

(484) ya-pe na-?isafe-a-nae?
 1S-BEN 2S-angry-3S-Q
 'Are you angry at me?' (Macdonald 1990: 210)

I assume that a Q element of some kind is required to 'type' an interrogative. The accounts discussed here raise certain questions. The issue of whether Q is present in all questions is addressed in detail in Chapter 5, with direct vs. indirect questions considered as well as different types of main-clause question. In the next section, the issue is discussed of where Q is located. Another matter considered here and in Chapter 5 is whether any other element is required in addition to Q.

4.3.2. *The syntactic position of Q*

Since at least Katz & Postal (1964), the assumption has been that question particles and the Q morpheme in general are located very high in the clause. CP is the projection associated with clause typing, and is the locus of complementisers and subordinating elements. In earlier works, this meant that question particles were usually analysed as C⁰, or occasionally Spec,CP for certain particles such as *whether* in English. Bach (1971), Bresnan (1972), Cheng (1991), Watanabe (1992), and Hagstrom (1998) all argue for C⁰ as the syntactic position for Q. Aoun & Li (1993) argue for a phrase 'XP' within IP, along the lines of Laka's ΣP. In this case XP seems to stand not for 'some phrase' but is intended as the name of a phrase which 'generates different types of sentences such as questions, indicatives, and suggestions' (1993: 232). This XP can have a combination of the features [±wh] and [±Q] to yield *wh*-questions, polar questions, declaratives and exclamatives with *wh*-words. In questions, a Q operator is generated in the specifier of this XP and it subsequently moves to Spec,CP.

In work that assumes a split CP, it is not always made specific what projection Q targets. Munaro & Poletto (2005), for instance, argue that the final particles in Italian dialects are located in heads in the CP. There are two positions, for two distinct types of particle: the first is lower and attracts either the clause or just a *wh*-item to its specifier, and the second is higher and always attracts the whole CP to its specifier. They do not give a name to these projections, instead ordering them relative to each other and the CP. The fact that they place them above CP indicates that they are the highest heads in the clause. Generally, analyses can be split into two groups: those that claim Q is the highest head, and those that place it just below the highest head.

Q is the highest head

Where the particle is considered to be the highest head in the clause, it is usually placed in Force⁰. Law (2002) and Kuong (2008) argue this for Cantonese, for instance. Kuong points out that there are certain restrictions on which particles can and cannot co-occur. The neutral question particle *maa3*, unlike its Mandarin cognate *ma*, is unable to occur in combination with *mei6* (analysed by Cheng et al (1996) as a negative question particle):

(485) *Si1 Hou6 lei4-zo2 mei6 maa3/me1?
 Si Hou come-PERF not-yet Q/Q
 ‘Has Si Hou come already?’ (Kuong 2008: 722)

It can, however, occur with a topic, and frequently does so. Kuong (2008) does not provide an example with *maa3*, as the two examples cited include the negative particle illustrated in (485) or aspect markers, which are also ungrammatical with the neutral question particle. However, another question particle *mo4* is illustrated:

(486) go1 zeong1 so1fa2 (aa3), lei5 maai5-zo2 lo3 mo4?
 that CL sofa PRT you buy-PERF PRT Q
 ‘That sofa, you have already bought [it]?’ (Kuong 2008: 725)

the illocutionary force marker *yo*, which he says strengthens the request in (490), appears on a declarative in (491):

(490) are-o mi-ro-yo
 that-ACC look-IMP-PRT
 ‘Hey, look at that!’

(491) are-o mi-ru-yo
 that-ACC look-DECL-PRT
 ‘I will look at that.’

Coniglio & Zegrean (2010) themselves, however, claim that illocutionary force and clause type are the two highest heads in the clause, and illocutionary force is above clause type, as for Endo (2012). They argue for the features [*uTyp*] and [*uIntent(tionality)*] on the illocutionary force head ILL. [*uTyp*] is valued through multiple Agree with the interpretable *Typ* features on the clause typing head CT, which has its own [*iTyp*], and the discourse particle. [*uIntent*] is valued just by the particle, which has both [*iTyp*] and [*iIntent*].

Following Hagstrom (1998), Cable (2008) offers a slightly different analysis for particles in *wh*-questions in *wh*-in-situ languages. He still places the relevant head high in the clause but also proposes that a QP is generated lower down in the tree, either selecting or adjoining a *wh*-phrase. He argues that a *wh*-word is c-commanded by a question particle, which is adjoined to the phrase containing the *wh*-word. An interrogative C head has an uninterpretable Q feature and probes for an interpretable instance of this feature, which it finds on the Q-particle. Agreement eliminates the uninterpretable feature and triggers movement of the particle to CP. He extends this analysis to languages with *wh*-movement, arguing that in these languages the interrogative head does not probe for and agree with a *wh*-feature on the *wh*-word. Instead, he claims that the process is almost exactly similar to that just described for *wh*-in-situ languages. The difference lies in that the Q-particle is not adjoined to the phrase containing the *wh*-word, but takes it as a complement and projects a QP. The C probes for an interpretable Q-feature and finds it on the QP, agreeing with it and triggering movement of the whole QP, including the *wh*-word.

Q is below Force

Those authors who do not consider the question particle to be the highest head in the clause tend to place it in some functional projection just below the highest head. Rizzi's analysis is perhaps the most well-known, and Ginsburg (2009) proposes a slightly modified version of his idea. As discussed in Chapter 1, Rizzi argues for a projection IntP below Force but above Focus as the locus of the question word *se* 'if' based on examples like (492)-(495):

(492) Mi domando se QUESTO gli volessero dire
me ask.1SG if this him want.3PL say
'I wonder if THIS they wanted to say to him'

(493) *Mi domando QUESTO se gli volessero dire
me ask. 1SG this if him want.3PL say
'I wonder THIS if they wanted to say to him'

(494) Non so se, a Gianni, avrebbero potuto dirgli
not know.1SG if to Gianni have.3PL could say.him
la verità
the truth
'I don't know if, to Gianni, they could have said the truth'

(495) Non so, a Gianni, se avrebbero potuto dirgli
not know.1SG to Gianni if have.3PL could say.him
la verità
the truth
'I don't know, to Gianni, if they could have said the truth'

(Rizzi, 2001: 288-9, my glosses)

In these examples, *se* can precede a focussed constituent but not follow it, indicating that it is higher than Focus, and it can precede or follow a topicalised phrase, indicating that there are at least two Topic projections above and below it. There is also a declarative complementiser, *che*, which also precedes focus. However, *che* can only precede a topicalised phrase, not follow it. This leads Rizzi to argue that the two complementisers occupy different positions. *Che* is in Force⁰ as argued in Rizzi (1997), where it is shown that *che* always precedes a clitic left-dislocated phrase (the manifestation of a topic in Italian) and the focus.

The fact that *se* is in Int⁰ (and the location of IntP) is derived from its interaction with other elements. In (496)–(499) from Rizzi (1997: 298, my glosses, translation of (496) slightly modified) it is demonstrated that while relative pronouns (presumed to be in Spec,ForceP) precede a topic, question operators (*wh*-elements) in main questions must follow it:

(496) Un uomo a cui, il premio Nobel, lo
 a man to whom the prize Nobel it
 daranno senz'altro
 give.3PL.FUT without.other
 'A man to whom, the Nobel Prize, they will undoubtedly give.'

(497) *Un uomo, il premio Nobel, a cui lo
 a man the prize Nobel to whom it
 daranno senz'altro
 give.3PL.FUT without.other
 Lit.: 'A man, the Nobel Prize, to whom they will give it undoubtedly'

(498) *A chi, il premio Nobel, lo daranno?
 To whom the prize Nobel it give.3PL.FUT
 Lit.: 'To whom, the Nobel Prize, will they give it?'

(499) Il premio Nobel, a chi lo daranno?
 the prize Nobel to whom it give.3PL.FUT
 'The Nobel Prize, to whom will they give it?'

Rizzi (1997) observes that *wh*-elements are incompatible with focussed constituents in main clauses and concludes that question operators in main clauses are located in Spec,Foc. In embedded *wh*-questions focus is not barred outright, as (500) shows, and the *wh*-element follows the focussed constituent (Rizzi 2001: 290, translation slightly modified):

(500) Mi domando A GIANNI che cosa abbiano ditto (non a
 me ask.1SG to Gianni what have.3PL said not to
 Piero)
 Piero
 'I wonder what they have said to GIANNI (not to Piero).'

Rizzi (1997, 2001) thus concludes that in embedded questions, the *wh*-element moves to a position in the CP system below FocP. Given that *se* 'if' can co-occur with focus and precedes it, it cannot occupy the same position as *wh*-elements in

main or embedded questions. Rizzi (2001) assumes that it is in the head of IntP, which is above Focus and can be preceded and followed by one or more Topics:

(501) FORCE > (TOP*) > **INT** > (TOP*) > (FOC) > (TOP*) > FIN > TP

In his system, clause-typing takes place in Force rather than Int, however. He argues this on the grounds that there is (at least) a higher Topic position than Int, as shown in the examples above, and the main verb does not select for a clause with a topic. It is therefore unlikely that a TopicP could 'close off' the proposition, although this would not be a problem if, for instance, Topic was transparent for selection for some reason such as an absence of features. He claims instead that there is a Force head above the Topic, itself above Int, and that this Force head is selected by the main verb. It follows that the Force head must be what gives the clause its interrogative force. He cites Spanish in support of this, which allows the Force head to be overt in combination with the interrogative complementiser *si*:

(502) me preguntaron (*que*) *si* tus amigos ya te visitaron en Granada
'They asked me *that* if your friends had already visited you in Granada.'

(Suñer 1994: 349, cited in Rizzi 2001)

This leads to a situation in which the interrogative marker is in Int⁰ but the clause type is marked on the Force head. The features of Int must presumably be inherited by Force, in that case. Although the descriptive facts lead to this assumption, it is not clear what Int actually is. The syntax of questions proposed in Chapter 5 avoids this problem by removing Force from embedded questions, and having the question particle signify open polarity (i.e. that the questioner wishes to know if the proposition is true or not true).

Ginsburg (2009) also circumvents this problem. He argues for a system essentially similar to Rizzi's, but he claims that all clause-typing morphemes are merged in the same projection, TypP, following Denham (2000). TypP replaces Rizzi's IntP and occurs in precisely the same position in the left periphery as IntP. However, Ginsburg differs from Rizzi in claiming that clause typing takes

place at TypP, and Force signifies that a clause is embedded (or possibly that it is matrix). The existence of these two projections allows for the occurrence of complementisers and question particles in the same clause (and in a fixed order), as in Hindi/Urdu (Davison 2007: 181):

- (503) us-nee puuc-aa [ki kyaa tum aa-oogee]
 3S-ERG ask-PFV what that you come-FUT
 'He asked whether you will come.'

Clause-peripheral question particles are merged as head of TypP on Ginsburg's account to check an uninterpretable feature. Scope facts show that the particle is merged directly in this position (or at least in some peripheral position): the Japanese Q particle *ka* may only appear clause-finally. If it is within an embedded clause, it can only take scope over the embedded clause and cannot signify a matrix yes/no question. The complementiser *to* follows it, showing that Typ is below Force:

- (504) kare-wa (*ka) ie-ni (*ka) kaerimashita ka?
 he-TOP home-DAT went Q
 'Did he go home?'

- (505) anata-wa [kare-ga gohan-o suki-datta⁵⁷ to] omottimasu ka?
 you- TOP he-NOM food-ACC like-PAST COMP think Q
 'Do you think he liked the food?'

- (506) *anata-wa [kare-ga gohan-o suki-datta ka to] omottimasu?
 you- TOP he- NOM food- ACC like-PAST Q COMP think
 (= *'You think whether he liked the food.')

(Ginsburg 2009: 99-100)

- (507) watashi-wa [kare-ga sore-o yatta kadooka to]
 I-TOP he-NOM that-ACC did Q COMP
 tazunemashita
 asked
 'I asked if he did that.'

(Ginsburg 2009: 40)

⁵⁷Ginsburg has *suki datta* glossed as 'like did' in this example. I have changed it to be consistent with example (506). *Suki* is an adjective and *datta* is a past tense copula. It can only mean 'liked/loved' (Jo Lumley, p.c.).

Likewise, the English Q morpheme must appear clause-initially: either the auxiliary to which it affixes raises to an initial position, or the morpheme *if* is initial in an embedded question:

(508) Could he *t* drink the wine?

(509) *He could drink the wine?

(510) I wonder [*if* he ate the food].

(511) *I wonder [he *if* ate the food].

(Ginsburg 2009: 101-102)

For Ginsburg (2009), therefore, Q and its Q-morpheme instantiation are located in TypP in the clause periphery, above FocP and below ForceP.

Garzonio (2004) identifies a slightly different position for the Fiorentino particle *o*. This particle is used not for true information-seeking questions but rather for questions Garzonio terms ‘non-canonical’: surprise questions as in (512); ‘can’t find the value of x’ questions as in (513);⁵⁸ rhetorical questions (514); exclamative questions (515); and imperative interrogatives (516) (all Fiorentino dialect):

(512) O che tu sei ancora costì?
o that you are still there
‘Are you really still there?’

(513) O indove ho messo le chiave?⁵⁹
o where have put the keys
‘Where (the hell) did I put my keys?’

(514) O un eri te quello che sapeva la strada?
o not were you that that knew the road?
‘Weren’t you the one who knew the road?’⁶⁰

⁵⁸ This is Obenauer’s term for those questions in which the speaker ‘though he has tried to do so [...] is not able to find the value of the variable bound by the *wh*-operator’ (Obenauer 2006: 253).

⁵⁹ Note that only *wh*-questions can be ‘can’t find the value’ questions, not yes/no questions.

⁶⁰ Translation given in Garzonio (2004) as ‘Wasn’t it you the one who knew the road?’.

(515) O che vestito tu ti sei comprato?⁶¹
 o which garment you you are bought
 'What a garment you bought!'

(516) O che tu la smetti?⁶²
 o that you it stop
 'Stop it!'

(Garzonio 2004: 4–8)

In polar questions in Fiorentino *o* also requires the interrogative marker *che*, although other varieties may allow *o* alone. *Che* is not required (and may be dispreferred) in negative polar questions. If there is a topic, it precedes the particle *o* (Garzonio 2004: 13), and in fact the particle may be reduplicated before the hanging topic (Garzonio 2004: 16):

(517) (O) Gianni, o quando tu ci parli?
 (o) Gianni, o when you to.him talk
 'Gianni, when (the hell) are you going to talk to him?'

Left-dislocated phrases, when they occasionally occur with the particle, generally follow it. Therefore Garzonio, who assumes a highest Discourse head that hosts hanging topics in its specifier (as in Benincà 2001), claims that *o* is generated between DiscP and TopP. He does not commit to a particular position for *o*, rather suggesting that it occupies different heads depending on the type of question it marks. He further suggests that the doubling of the particle with topics may indicate that the particle is in the highest projection, with left-dislocated phrases appearing in the specifier of this projection (Garzonio 2004). Damonte & Garzonio (2008) interpret the doubling of *o* as indication of movement of the particle from the lower Int to a higher Special Interrogative projection. They also claim that Calabrian *ca* is merged in this Special Interrogative head, while Florentine *che* is merged in Int and moves to a lower Special Interrogative position.

⁶¹ Said with interrogative intonation, not exclamative.

⁶² Imperative interrogatives may only be polar questions, not *wh*-questions.

We have seen analyses in which the Q element is the highest head, usually Force, and those in which it is a functional head immediately below Force. Those who claim that the particle is below Force do so because word order facts indicate that there must be a higher Force head above the particle. However, those who claim that the particle is the instantiation of Force do so because the particle seems to provide the question force of the utterance. These two observations are both relevant and can be combined to give a more accurate account of the syntax of polar questions.

Q Force and Focus

Aboh (2010) argues that it is necessary to separate *wh*-movement and clause typing, on the grounds that a moved *wh*-word does not always type a clause as a question, as in English relative clauses, and that some languages may have *wh*-questions without *wh*-phrases. Nederlandse Gebarentaal, the Netherlands sign language, is SOV and has moved *wh*-phrases in questions (to the right edge, as is common in sign languages) (Aboh 2010: 21):

(518) _____wh
 BOOK STEAL WHO
 'Who steals the book?'

A sentence-final question marker also often appears (glossed PU, meaning 'palm up'), and the same marker is found in polar questions (Aboh 2010: 21):

(519) _____wh
 INDEX₃ SAY WHAT PU
 'What did s/he say?'

(520) _____yn
 INDEX₁ OFTEN USE PU
 'Do I use it often?'

However, the *wh*-word may be absent without altering the fact that the question is a *wh*-question (Aboh 2010: 21):

(521) _____ wh
 YESTERDAY INDEX₂ BUY PU
 'What did you buy yesterday?'

Aboh therefore argues that the two are distinct, that there is a question particle present in all questions, which may be covert, and *wh*-movement does not play a role in clause-typing. Clause-typing is linked to Force (an interrogation probe, in questions) and *wh*-movement to Focus. This is consistent with the intuitive notion that questions have a speech act type (they seek an answer) and a Focus (the requested information).

Aboh (2010), like Rizzi and Ginsburg, posits a different projection for the interrogative head, however: InterP, just below ForceP. In fact, this projection is probably unnecessary. Soare (2007) argues that there is an unvalued feature Q on the Focus head and a *wh*-feature is present in *wh*-questions. A question particle is the overt instantiation of Q, which may be realised covertly or by other means in other languages. Furthermore, the head may either have an EPP feature or not, determining whether the complement is moved to a higher position (leaving the particle final) or not. Ginsburg argues for a TP-internal Q morpheme in some languages, which has two features, one which focuses a phrase and another that types the sentence as an interrogative. This morpheme may adjoin to any phrase in order to focus it. The focus feature and Q feature move first to Foc, and then the Q-feature moves to Typ in order to type the clause. The analysis in Chapter 5 builds on this idea, proposing that the combination of Force and Focus is the crucial characterisation of questions.

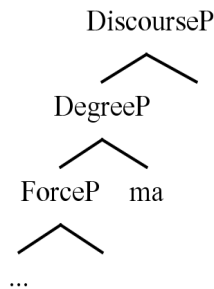
Particles with different functions

It should be noted that some authors have suggested that question particles occupy different heads from those given above simply because they are not truly question particles. Gasde (1998) examines Mandarin Chinese and places the polar question particle *ma* in the head of ST (Sentence Type), the highest category, which in (2004) he revises to F1. He argues that the projection is F1' rather than F1P, as it is a right-headed structure and so must lack a specifier

because spec-head agreement cannot occur. However, Li (2006) analyses a number of Chinese sentence-final particles (SFPs) and argues that the Mandarin polar question particle *ma* is a degree marker: it indicates a higher degree of commitment to the assertion. *Ba* (another SFP, used in declarative clauses) marks a low degree of commitment. In a question, this specifically translates to a degree of wanting to know the answer. Following Rizzi's (1997) Split CP structure, Li argues that *ma* is located in a projection she terms DegreeP, taking ForceP as its complement. The complete structure she outlines for the split CP is given in (522), where *a* and *ne* are discourse and evaluative markers respectively, and (523) shows the position of *ma* (the tree is shown as a left-branching structure, as in Li 2006):

(522) Discourse > Degree > Force > Evaluative > Mood > Fin
a *ba, ma* *ne*

(523)



Summary

Several analyses of the syntax of questions have been presented and discussed in this chapter. Although there is general consensus that there is a Q feature involved with questions, which may or may not be related to focus, and general consensus that it is in the left or right periphery, the specific details differ between analyses. Authors differ over whether Q is a Force head or head of a lower projection. Among the latter, several projections have been proposed to house the question operator/particle, including IntP/InterP, TypP, PolP (implicitly, in Davison 2007), FocP, and CT/ILL. Conversely, Li's DegreeP is immediately above Force. Furthermore, other features have been taken to be

part of the syntax of questions, including *wh*-features and features to derive the different types of question formation seen in different languages, such as the word order inversion of English. These issues are explored further in the next chapter.

4.4. Conclusion

This chapter has provided an overview of question types and question marking strategies. The rest of this thesis will be largely concerned with neutral polar questions formed with a question particle. However, Chapter 5 deals with different types of questions, specifically the role of question intonation, in greater detail. It discusses the location of the question operator. In this last section we have seen that it is usually regarded fairly uncontroversially as a C element, and some authors have suggested specific projections within the split CP as the locus of Q. In Chapter 5, evidence from several languages is presented to argue that there are two heads involved in the syntax of polar questions, Force and Polarity, both of which are independently required. This analysis builds on those of Aboh (2010) and Soare (2007) who argue for the interaction between Force and Focus. It thereby dispenses with the need to posit a new projection as the locus of Q or clause typing features.

Chapter 5. Decomposing Questions⁶³

In the previous chapter, the syntax of questions was discussed, and it was shown that most authors place question particles in C. When the split CP was proposed, it became necessary to say exactly where in the left periphery question particles occur, and authors variously suggested heads used for typing clauses, such as Force, Int or Typ. Other authors suggested different functional heads based on the function of ‘question’ particles in a particular language, such as Li’s analysis of Chinese particles as degree markers, and therefore a Degree head. It was also noted that Focus plays an important role in question formation. In this chapter, the notion of ‘in C’ is explored further, and an analysis is proposed that decomposes questions into two heads working in combination.

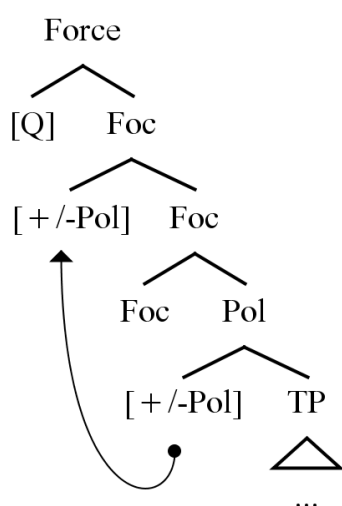
I argue for a structure in which a neutral yes/no question is composed of two elements, a Q feature and a polarity variable, which interact in order to derive different types of questions. The chapter demonstrates that illocutionary force has a specific, identifiable role in the syntax. Furthermore, question force is an essential part of genuine, information-seeking questions but is not found in, for example, embedded questions. Likewise, it is shown that the polarity head contains a variable in neutral questions, but not in biased questions. I discuss one particular question marker, intonation, and show that it has different functions in different languages. Intonation is a useful object of study because it can be either the sole question-marking strategy of a language, or used in combination with a particle or other means of signalling that an utterance is a question. We can therefore test it to see what difference this makes. Through the interaction of Force and Polarity with intonation in various types of question in a number of languages, I show that intonation can be characterised in terms of the two components of questions. This characterisation can then be extended to other types of question marker. The discussion of intonation also shows that checking whether questions require an answer (‘yes’ or ‘no’) and whether they

⁶³ This chapter, particularly section 5.3, is based on work done in collaboration with Anders Holmberg, Małgorzata Krzek, Michelle Sheehan and Mais Sulaiman.

allow NPIs is a useful heuristic to identify the features present in different types of question.

The relevant part of the structure of polar questions is shown in (524):

(524)



Questions are argued, in this chapter, to crucially comprise the two projections ForceP and Pol(arity)P, which is intended to be roughly equivalent to Laka's (1994) Σ P. These two heads are present in all true, information-seeking polar questions. Force, understood in the sense of Rizzi (1997), has a question force feature [Q], encoded by merging a question particle or some other question-marking device, which contributes the illocutionary force of a question. Pol contains a variable, which is the questioned element in the same sense that a *wh*-phrase is the questioned element in a *wh*-question. In the case of polar questions the variable is simply 'true or not true': open polarity (denoted [\pm]). This variable is focussed and moves to Spec,FocP. The [Q] feature may be valued in different languages by movement, by the use of a question particle, with special verbal morphology or by intonation. These two heads have both been independently motivated and together provide all the elements of a question. There is thus no need to posit a projection such as IntP (Rizzi 2001) or TypP (Ginsburg 2009), whose sole purpose is to host the question operator. Ginsburg (2009) claims that the question morpheme, which may be overt or covert, is merged directly as

head of TypP, and types the clause as a question. I make a similar claim here, arguing that [Q] gives a clause its question force. Ginsburg claims that the 'default' type of Q-morpheme lacks a focus feature but that when one is present, it is merged clause-internally and focuses a particular phrase. I argue that there is always focus in a question, and when no particular phrase is focused, it is the polarity variable itself that is focused.

5.1. The components of polar questions

5.1.1. *Illocutionary Force*

Illocutionary force in matrix clauses

Austin (1975[1962]) introduced the notion of illocutionary force as the force an illocutionary act has 'in saying something' (1975: 121). Through the examination of performatives (those expressions which, when uttered, actually constitute the act, such as *I name this baby* when uttered by a person given the authority to perform such a naming ceremony, and provided all other appropriate conditions are met), Austin determines that utterances comprise three acts. He contrasts the act performed *in* saying something (an illocutionary act) with the act *of* saying something (a locutionary act) and the act performed *by* saying something (a perlocutionary act). Thus uttering the words in (525) is to perform a locutionary act.

(525) I will shoot him.

In performing a locutionary act, a speaker also performs an illocutionary act. The illocutionary act and its relationship to the locutionary act are expressed in (526), and the perlocutionary act and its relationship to the first two types are given in (527) (Austin 1975: 122, emphasis original):

(526) *In* saying I would shoot him I was threatening him.

(527) *By* saying I would shoot him I alarmed him.

The locutionary act is the meaning of the utterance, and the perlocutionary act its effects on the listener, speaker or other people. So in this case, the locution, or the meaning of the words, and the illocution, the force of the utterance, have the perlocutionary effect of alarming the listener. The speaker's act in saying (525) was to threaten, and this is the illocutionary force of the utterance.

Illocutionary force is frequently characterised as solely or largely a pragmatic aspect of sentence production, relying on the speaker's intention. Huddleston and Pullum (2002: 858), for instance, describe it as 'the way the speaker is using the clause when uttering it in a particular context'. In their analysis, the pragmatic aspect is the most important factor in determining the type of illocutionary act, although the form of the utterance also seems to play a role: they note that an utterance may have primary and secondary force, so that a promise can be primarily a promise but also, secondarily, a statement. The promise is the more salient act, and it is interpreted as such, but the statement is 'simply the means of making the promise' (2002: 859). In other words, it is the locutionary act. Therefore, for Huddleston and Pullum, an utterance can have only one clause type, but more than one illocutionary force. It seems, though, that the secondary statement force of a promise such as (528) is dependent on the grammatical form of the utterance – that is, it is a statement no matter what the speaker intends.

(528) I promise to teach you how to crochet.

The speaker, when uttering such a promise, intends to make a promise and presumably also intends to state that promise in the hearing of the person to whom it is addressed. A promise is almost invariably a statement in any case, because this is how one makes a promise, although one could conceivably imagine an utterance that the speaker intends as a promise made in the form of a question, as in (529):

(529) How about I promise to take you bowling tomorrow?

Pragmatically, (529) can be intended and interpreted as a promise. Its secondary illocutionary force, however, is no longer that of a statement, even though the speaker still intends to inform her listener that she is making a promise. The grammatical form of the utterance is that of an interrogative and this is inextricably bound up with its illocutionary force, namely that of a question. This type of utterance is what Huddleston and Pullum (2002:862) term an ‘indirect speech act’; it is superficially a question, but its intended meaning is as a promise. They characterise indirect speech acts as those in which:

- a) the propositional content actually expressed differs from that which the speaker intends to convey with some illocutionary force, or
- b) where the illocutionary force is different from that normally conveyed by the clause type concerned.

(Huddleston and Pullum 2002: 862)

(529) is an example of the former type, and *Sleep well* is the example Huddleston and Pullum give of the latter: it is on the face of it a directive, due to its imperative form, but sleeping well is not something one can do or not do at will, and so it is interpreted, they argue, as a wish. In this case, the indirect speech act has the primary illocutionary force of the utterance. Markers such as the intonation with which an utterance is spoken relate to the indirect (primary) force, so that falling intonation on a polar interrogative clause ‘increas[es] the difference in salience between the indirect speech act and the direct one, pushing the latter further into the background’ (Huddleston and Pullum 2002: 864).⁶⁴

The combination of the primary and secondary force should ordinarily be that of a pragmatically-determined force as the primary force (a performative such as a promise, indicated with an illocutionary force marker such as a performative verb)⁶⁵ and a grammatically-determined force as the secondary force (a

⁶⁴ (529) must be pronounced with falling intonation if it is to be interpreted as a promise, and *wh*-questions (*how about* is a special *wh*-element) are standardly uttered with falling intonation, so the intonation does not contribute to any increase in the difference of salience of the two forces in this particular instance.

⁶⁵ Huddleston and Pullum note that performatives differ from other types of illocutionary acts, in that in using a performative, the speaker expresses the proposition *that she is* making a promise (or taking someone’s hand in marriage, or naming a baby, etc.), but in using a declarative or

statement, question, order, or similar, indicated by the grammatical structure of a declarative, interrogative or imperative). Huddleston and Pullum (2002) list clause type and illocutionary verbs as markers of illocutionary force, along with intonation and other markers such as *please* (which usually marks requests). Presumably, if an utterance could contain any of these items with differing forces, that utterance would have all of those illocutionary forces, with one being primary, another secondary, and then any further illocutionary force being tertiary, and so on.

It is not clear, however, how the type of illocutionary force determined by grammatical form could be distinguished from the notion of 'clause type', as defined by the syntactic structure of the clause. Huddleston & Pullum's account conflates the two as simply different markers of illocutionary force. This allows for a classification of declarative questions, such as those discussed in §5.2.1 below, as having the primary illocutionary force of a question (signalled by the intonation in some cases, though by no means all) but the secondary illocutionary force of a statement (signalled by the syntactic structure). This classification runs into problems when one force is not marked by any illocutionary force marker (as in many declarative questions, as discussed below), or when a language uses only intonation to indicate a question: then one has to say that no illocutionary force is marked by the syntactic structure in that language, although it is in (for instance) English.

Illocutionary force in embedded clauses

Illocutionary force is always present in main clauses, but may be absent from subordinate clauses. These subordinate clauses can therefore illustrate the contribution of the illocutionary force to the clause through a comparison of those that do and do not have it.

interrogative clause she does not express the proposition *that she is* making a statement or asking a question.

As discussed in Chapter 1, Haegeman (2004) provides interesting observations showing that illocutionary force does affect the syntax, licensing certain syntactic phenomena when it is present and not when it is absent. She argues that a Force projection is not always present in subordinate clauses, depending on whether the clause has illocutionary force or not. This links illocutionary force directly and explicitly with the Force head, giving it a concrete syntactic existence.

Haegeman discusses finite adverbial clauses and identifies two types, which she terms 'central', illustrated in (530), and 'peripheral', as in (531), where each type is shown with *if*:

(530) If you save up enough money, you can go to Paris next year.

(531) If you don't like sweet potato, why did you order the sweet potato soup?

Central adverbial clauses like the example in (530) express a state or an event that is sufficient or necessary for the state or event in the main clause to occur. In this case, it is a necessary condition that the hearer save up enough money if he wants to go to Paris next year. Peripheral adverbial clauses differ in that they do not state a necessary condition for the main clause, but rather express some previously-held premise on the part of the speaker. In (531), the speaker believes that the hearer does not like sweet potato. It is not a condition of the main clause but provides the background against which the main clause should be interpreted. It provides context: in this case, a reason for asking the question expressed in the main clause.

Julien (2007, 2009) additionally shows that in Mainland Scandinavian, embedded declarative V2 clauses have illocutionary force but non-V2 embedded declarative clauses do not. The differences between the two types of clause are due to the nature of V2 clauses being asserted and so having a Force head and non-V2 clauses lacking this head, as they are not asserted. A particular discourse-related element *för fan* (Swedish)/*for faen* (Norwegian)/*for fanden* (Danish) is considerably more acceptable in V2 clauses (532) than in non-V2 clauses (533) (Julien 2009: 228, Swedish):

(532) hon sa att hon hade för fan inte betalat räkning-en
 she said that she had for devil not paid bill-DEF
 i tid.
 in time
 'She said that she had for fuck's sake not paid the bill on time.'

(533) ??hon sa att hon för fan inte hade betalat räkning-en
 she said that she for devil not had paid bill-DEF
 i tid.
 in time

This discourse element can strengthen the illocutionary force of declaratives, and it can appear in imperatives and with bare yes/no answers, unlike other discourse elements, indicating that it is linked to the illocutionary force of the clause. V2 is preferred when this element occurs, indicating that V2 declarative clauses are asserted (have the illocutionary force of an assertion). Julien also notes that many V2 clauses resist being topicalised, and suggests that this is also a result of their having assertive force. Anders Holmberg (p.c.) points out that you cannot topicalise out of V2 clauses, and this too is explained if they are assertions: the information is not presupposed. Some V2 clauses can be topicalised, and Julien points out that it is those that could be classified as presupposed as well as asserted (such as a clause embedded under a factive or semifactive predicate).

Haegeman similarly shows that central adverbials differ from peripheral adverbials in not allowing topicalisation (which, Haegeman argues, shows the unavailability of TopP), epistemic modality (which shows the lack of anchoring to the speaker), and tags (that is, the adverbial clauses having their own tags associated with them).

- (534) *Topicalisation:*
 a. *If these exams you don't pass you won't get the degree.
 b. If aphids we did not worry about, snails we did.

- (535) *Epistemic modality:*
- a. *Mary accepted the invitation without hesitation after John may have accepted it.
 - b. The ferry will be fairly cheap, while the plane will probably be too expensive.
- (536) *Tags:*
- a. *Bill took a degree at Oxford while his children were still very young, weren't they?
 - b. Bill took a degree at Oxford, while his daughter is studying at UCL, isn't she?

(Haegeman 2004: 3-9)

To a lesser extent, as their acceptability is not absolute, peripheral adverbial clauses also allow speech act adverbials, rhetorical questions and imperatives, which show the absence of illocutionary force. Furthermore, Haegeman cites Declerck and Reed (2001) in noting that peripheral adverbial clauses are echoic: they echo an utterance or a proposition (which may be internal to the speaker), linking the clause to the discourse and the speaker rather than the main clause to which it is attached. Notice also that the (b) examples in (534)-(536) are written with commas, while the (a) examples are not. I take this to be a reflection of the prosody of these utterances, which differs between the two types of clause: the peripheral adverbial clauses are spoken with a greater intonational break than the central adverbial clauses, again highlighting the fact that they are not so closely integrated into the main clause but are instead discourse-oriented and anchored to the speaker.

Haegeman attributes these differences to differences in the availability of certain heads. She decomposes the Force head into two further heads, Sub and Force. Given that Force is involved in both subordination and 'clause typing' (illocutionary force), this is a reasonable step to take. Sub allows the clause to be subordinated (makes it available for c-selection), while Force, for Haegeman, anchors the clause to the speaker and therefore licenses illocutionary force. Sub, then, is contained in both central and peripheral adverbial clauses, as both must be selected by a higher head. Force, however, is only present in peripheral

adverbials, accounting for the differences shown above. The left periphery of finite clauses is as in (537)-(539) (Haegeman 2004: 12):

(537) *Root clause:*
Force > Top > Foc > Fin

(538) *Peripheral adverbial clause:*
Sub > Force > Top > Foc > Fin

(539) *Central adverbial clause:*
Sub > Fin

Illocutionary force can therefore be said to have a specific syntactic manifestation, a suggestion that is considered further in section 5.2.

Coniglio and Zegrean (2010) extend Haegeman's analysis to other languages, and also split the Force head into two distinct heads, called in their proposal ILL and CT (ILLocutionary force and Clause Type). They base their argument on German, Italian and Romanian discourse particles ('modal particles'). They note that 'one property seems to be common to all discourse particles, regardless of their syntactic distribution, i.e. they depend on the clause type for their syntactic licensing and on illocutionary force for their pragmatic and discourse functions' (2010: 16). Discourse particles are restricted in terms of what syntactic clause type they may appear with: German (unstressed) *ja* can only appear in declaratives and *denn* may only appear in polar or *wh*-interrogatives, for example. This motivates Coniglio & Zegrean's CT head. The function of the particle is to modify the illocutionary force, as Coniglio and Zegrean show: the many particles that may appear in German imperatives each give a slightly different meaning to the utterance. This leads them to suggest the ILL head. Furthermore, they cite the possibility of an utterance having a different illocutionary force from the one typically associated with its clause type, as when a directive is expressed as an interrogative, such as *Can you close the door, please*, as a reason to believe that clause type and illocutionary force must be encoded on separate heads.

As noted in Chapter 4, Coniglio & Zegrean (2010) argue for the features [*uTyp*] and [*uIntent(tionality)*] on the illocutionary force head ILL. [*uTyp*] is checked through multiple Agree with the interpretable *Typ* features on the clause typing head CT, which has its own [*iTyp*], and the discourse particle. [*uIntent*] is checked just by the particle, which has both [*iTyp*] and [*iIntent*]. It is not clear, however, how this allows an illocutionary force to differ from its typical clause type: ILL's [*uTyp*] is checked by both the particle and CT. In an utterance such as *Can you close the door, please*, the illocutionary force is that of a directive and the clause type is interrogative. The particle and clause type should therefore provide conflicting values to [*uIntent*] and render it uninterpretable.

The particles are only licensed in those adverbial clauses that Haegeman argues have the full CP structure, including Force. Where Coniglio and Zegrean diverge from Haegeman, however, is in their posited structure for Haegeman's reduced clauses. Coniglio and Zegrean argue that although clauses such as central adverbials do not have illocutionary force, they still have the projection ILL, and it inherits its value from the main clause. They also claim that central subordinate clauses can only have a 'default' clause type, which is essentially declarative, because the 'impoverished' ILL can only be associated with this default clause type (2010: 25). Furthermore, they argue that the CT head must be lower than the ILL head, because CT must be 'accessible to the internal syntax of the clause' (2010: 26) as it conveys information about the structure. ILL interacts with pragmatics and discourse, and as such must be higher. This conflicts with Haegeman's analysis, at least in part: her Force head is the head on which information about the speaker's attitude is encoded, and Force is below Sub in her structure. However, as Sub serves merely to subordinate a clause, she does not make any claim about where 'clause type' information is found.

This section has shown that the presence or absence of illocutionary force in a clause has demonstrable effects on the distribution and syntax of those clauses. While accounts differ in terms of the syntactic structure they attribute to these clauses, they all agree that illocutionary force has a specific syntactic role over and above pragmatics.

Interrogative force

For an utterance to have the illocutionary force of a question, it must require an answer from the hearer. It may also have the syntax of an interrogative, such as T-to-C auxiliary raising in English, but as discussed in the previous section, this is not so much dependent on its illocutionary force as typically associated with it. The utterance may have a particular ‘question intonation’ although, as illustrated in section 5.2, this is not necessarily the case. This means that, for example, embedded questions are not questions (in the sense of having the illocutionary force of a question), if they lack illocutionary force. Huddleston and Pullum (2002: 972) suggest that they ‘express’ questions, without having the illocutionary force of questions, and that they can be glossed with *the answer to the question*. On this view, (540) is equivalent to (541):

(540) It depends where she was born.

(541) It depends on the answer to the question ‘Where was she born?’.
(Huddleston and Pullum 2002: 972)

Their sense of ‘expressing’ a question is that the question clause in (540) contains the propositional content of a question but does not seek the answer to that question. An embedded question may have, on Huddleston and Pullum’s analysis, the primary illocutionary force of a question, as in (542):

(542) I’d like to know where you think you’ve been all this time!

In (542), the speaker utters a declarative sentence, but her primary aim is to ask the question *Where have you been all this time?* (as well as rebuking the hearer for being late, expressing displeasure, and so on). This sense of having the illocutionary force of a question is very much a pragmatic one, as the question force is in no way formally encoded. In (540), however, the speaker does not even indirectly ask the question *Where was she born?*, instead stating something about the *answer* to that question.

Furthermore, an utterance that is understood as a question need not even be a full clause. Brown, Currie and Kenworthy (1980) include in their sample of 'questions' such utterances as *Victorian* and *Two younger sisters*, which quite clearly are not interrogative in their structure. They explicitly state that their definition of a question is 'things that are answered'.⁶⁶ Although this was a sensible definition for the purposes of their study, for Huddleston and Pullum it is perhaps too simplistic: they note that an illocutionary act that fails to achieve its perlocutionary aim does not lose its illocutionary force. A question normally elicits a response as a perlocutionary effect, but an unanswered question is no less a question, provided that the speaker intended it as such. On the other hand, a hearer may respond to an utterance not intended to seek any response. Such 'questions' are also pragmatically determined.

On a syntactic analysis such as that of Haegeman (2004), one might suggest that embedded questions lack the necessary projection to carry illocutionary force, ForceP. If there is no Force head then the clause cannot have illocutionary force and cannot be interpreted as asking a question. If embedded questions have a reduced structure similar to that of central adverbial clauses, namely *Sub > Fin*, we should see other effects in embedded questions: topicalisation would be disallowed, as would focus fronting, because these projections are also lacking. Schwartz & Vikner (1996) show that topicalisation in embedded questions is highly restricted and ungrammatical in most contexts in Yiddish and Icelandic, although they do provide one Yiddish example that becomes grammatical with the addition of a particle *ot* providing contrastive emphasis. Engels (2012) states that topicalisation is ungrammatical in English embedded questions, illustrating with examples such as (543)–(544) (Engels 2012: 243):

- (543) *I wonder whether [this book] Sophie read.
 *I wonder [this book] whether Sophie read.

⁶⁶ It could be argued that such fragment questions are ellipted polar questions. However, this is not possible if they are echo questions, as fragment questions often are:

- i. (You've got) two younger sisters?
- ii. #(Have you got) two younger sisters? (infelicitous as echo question)

- (544) I know that Susan read the Bible, but...
- a. *I wonder whether [read the book] Sophie did.
 - b. *I wonder [read the book] whether Sophie did.

In the case of *wh*-questions, the Focus position must be available as it is to this projection that the *wh*-phrase moves, becoming focussed in the process (Rizzi 1997; Miyagawa 2009). I also assume that it is required in order to focus the polarity variable in polar questions. A position for the interrogative complementiser *if* or *whether* is also required. This is generally thought to be in Force. If one adopts a split Force head such as Haegeman's, the complementiser can be accommodated in Sub, as its role is to subordinate the question rather than provide illocutionary force. In Chapter 4 it was mentioned that Rizzi (2001) notes that Spanish allows the subordinating complementiser *que* and question complementiser *si* to both be overt. (502) is repeated here for convenience:

- (545) me preguntaron (*que*) *si* tus amigos ya te visitaron en Granada
'They asked me that if your friends had already visited you in Granada.'
(Suñer 1994: 349, cited in Rizzi 2001)

Alternatively, the interrogative complementiser might be seen as the overt instantiation of the polarity variable and as such be located in Focus rather than being a separate head, although Sub is still required, on Haegeman's analysis, for the complementiser *that*.

As noted in Chapter 4, Boya Li (2006), like Haegeman, splits Force into two heads. She argues that we can maintain Rizzi's structure whereby Force is the highest head and interacts with the discourse, and suggests that Mood is the lower head in which sentence type is encoded. However, neither of these heads is overtly marked in Mandarin, and question particles are not to be found in either Force or Mood, as one might expect if they mark an utterance as interrogative or having question force. In fact, Li analyses two Mandarin particles. *Ba* is often characterised as being used to 'indicate suggestion, express speculation, make mild questions etc.' (Li 2006: 21) and *ma* is generally agreed to be a question particle. Another version of *ma* also occurs, which indicates

obviousness and impatience. Li concludes that in fact, they are not actually question particles at all.

She argues that what they contribute to the question is a need to know the answer. One indicates a more urgent need than the other, the difference between requiring an answer and hoping for one. They can both be used in yes/no questions, as shown in (546)-(547):

(546) Xiáofú dú-guo zhè běn shū ma?
Xiaofu read-EXP this CL book Q
'Did Xiaofu read this book?'

(547) Xiáofú dú-guo zhè běn shū ba?
Xiaofu read-EXP this CL book Q
'Xiaofu read this book, right?'

(Li 2006: 29-30)

The difference, as the glosses show, is that a question with *ba* is one to which the asker already has an idea of the answer and seeks confirmation from the hearer, with a low degree of seeking an answer. A question with *ma* is a neutral question to which the asker has no idea of what the answer is and genuinely wishes to know. A third particle, *a*, can also be used to ask a question to which the speaker thinks she knows the answer. Li analyses this particle as a Discourse particle. Both *ba* and *ma* can therefore be used to modify yes/no questions. Li shows that they can both also be used in declaratives, and add the meaning of 'probably' (*ba*) and 'obviously/certainly' (*ma*), or a low and high degree of assertive force respectively (Li 2006: 31). The fact that the particles can mark both questions and declaratives, and have similar effects in each, leads Li to argue that the particles are degree markers.

On Li's analysis the two particles are base-generated in the head of a projection DegreeP. They indicate the degree of the sentence force, so in a declarative clause they mark the degree to which the speaker asserts the proposition. With *ba*, the speaker is less sure of the truth of the proposition than if the speaker were to use *ma*, which indicates a high degree of certainty and asserts the proposition more strongly. Similarly, in an imperative, they mark how strong the

speaker's wish is that the direction be carried out. In a question, the meaning is the same, but the force of the utterance refers specifically to the action of answering the question. The particles indicate the degree of the speaker's wish that the question be answered. Li claims that in imperatives and interrogatives, it is directive force that is scaled by these particles.

The particles *ba* and *ma* can co-occur with *ne*, an evaluative marker and *a*, a discourse particle. Based on the fixed order of these particles relative to each other, Li gives the following structure of the CP for Mandarin (Li 2006: 64):

(548) Discourse > Degree > Force > Evaluative > Mood > Fin
a *ba, ma* *ne*

In this chapter, I argue that question force is encoded by a formal feature [Q] on the Force head, meaning something like *Tell me...* It indicates that the speaker requires a response, whether she receives one or not. This feature is encoded by the question morpheme, which may be a question particle, verb movement or intonation. This is related, as in the preceding discussion, to illocutionary force rather than clause type: that is, an interrogative clause may not have question force, and a clause type other than interrogative may have the [Q] feature, if it is licensed in that language. This is discussed in detail in §5.2. I argue that Force is not present in embedded questions or in other questions that lack illocutionary force. The polarity variable is present in neutral embedded questions and it is focussed as in direct questions. Sub is not required, apart perhaps for those languages which allow constructions like the *que si* of Spanish, discussed with respect to (545) above.

5.1.2. *Polarity*

The other head involved in the formation of questions is a polarity head, located below Force. If [Q] provides the question force, and demands an answer to the question, polarity sets the parameters of what that answer should be. In a yes/no question, the answer must be yes or no. In affirmative yes/no questions, the

appropriate answer is always to provide the truth value of the proposition questioned:

- (549) Can chickens fly? [= Tell me the truth value of the proposition 'Chickens can fly']
a. Yes [= it is true that chickens can fly]
b. No [= it is false that chickens can fly]

The question is neutral, assuming that it is asked in the normal way of asking a neutral question in the relevant language. In English this means aux-raising from T-to-C, but other word order changes, a particle, verbal morphology and intonation are all possible options in other languages.

This situation is more complicated in negative questions, which in some languages are answered with the truth value of the proposition ('polarity-based' systems, for Holmberg 2012), and in others with the truth value of the speaker's utterance ('truth-based' or 'agreement/disagreement' systems, for Holmberg 2012).

- (550) *Swedish (polarity-based):*
Dricker dom inte kaffe?
drink they not coffee
'Don't they drink coffee?'

Nej
No [= they don't drink coffee]

- (551) *Cantonese (truth-based):*
keoi-dei m jam gaafe
he/she-pl not drink coffee
'Do they not drink coffee?'

hai
yes [= they don't drink coffee]

(Holmberg 2012: 53)

English negative questions can be ambiguous: in (552) and (553) the asker questions the proposition that Mark does not enjoy his ballroom dancing lessons, and the answerer responds in one of two ways. In (552) he answers in the

negative, thereby confirming the negative truth value of the proposition. In (553) he answers in the positive, confirming the speaker's expectation that Mark does not like the ballroom dancing lessons:

(552) Doesn't Mark enjoy your ballroom dancing lessons?
No (he doesn't).

(553) Doesn't Mark enjoy your ballroom dancing lessons?
Yes (you're right, he doesn't).

Both answers, *yes* and *no*, give the same negative response to the question. This is the 'negative neutralisation' discussed by e.g. Kramer & Rawlins (2009). The two responses each confirm an aspect of the question, either the asker's expectation or the proposition, giving negative questions an automatic bias.

Polarity can be affirmative or negative, or it can be neither, and have open polarity. It is affirmative in positive assertions, for instance:

(554) Northumberland has a very beautiful coastline.

In (554) the proposition is asserted as true, and the polarity of the utterance is affirmative. Polarity is negative in negative assertions, in which the proposition is asserted as false:

(555) The beluga whale is not a fish.

Polarity is open when the proposition is not asserted. This is the case in polar questions, when it is precisely the truth or falsity of the proposition that the speaker wishes to establish, or in (certain) conditionals (cf. discussion of Haegeman 2004 above), in which the speaker does not commit herself to the truth or falsity of the proposition, but merely asserts that *if P* were true, *Q* would be the case:

(556) Are eggs suitable for vegetarians?

(557) If your numbers come up on the lottery, you'll be a millionaire.

The polarity feature in yes/no questions is open, that is, neither affirmative nor negative. The answerer of a yes/no question is therefore required to fix the variable in Pol according to the truth value of the proposition contained in the question.

It is the case that polarity is open in neutral questions. However, in biased questions, this may not be the case, and the discussion in the next section of this chapter hinges partly on whether certain types of questions have open polarity or not. In doubtful cases, it is possible to test for open polarity by means of Negative Polarity Items (NPIs). As their name implies, NPIs are allowed to appear in negative contexts. However, more generally, they are licensed in 'non-veridical' contexts. A context is a propositional operator, which can be any 'proposition embedding function' (Giannakidou 2002: 5) such as tense, aspectual adverbs, connectives, and including the question operator. Giannakidou (2002: 5) defines (non-)veridicality as in (558):

(558) A propositional operator F is veridical iff Fp entails p ;... otherwise F is nonveridical. A nonveridical operator is antiveridical iff Fp entails *not* p .

Veridical operators include past tense adverbials like *yesterday* in (559), non-veridical operators include modal verbs as in (560), and anti-veridical operators include negation, as in (561):

(559) Yesterday, Paul saw a snake. \rightarrow Paul saw a snake.

(560) Paul may have seen a snake. \nrightarrow Paul saw a snake.

(561) Paul didn't leave. \rightarrow It is not the case that Paul left.

Polar questions are non-veridical, as a question like *Did Paul see a snake?* does not entail *Paul saw a snake*. Giannakidou (2002) argues that this is because a polar question is the disjunction of its two possible answers (following Karttunen 1977) and a disjunction entails neither of its two disjuncts: p or q does

not entail that *p* is true, and nor does it entail that *q* is true. Note that this predicts that polarity items like *any* should be licensed in disjunctions as well as questions (and in sentences with modal verbs like (560) above), which is incorrect for English but true for Greek, for instance (Giannakidou 2002). Biased questions, however, may well be veridical or anti-veridical contexts, with a positive or negative bias.

NPIs are possible in English in those clauses without positive polarity (which tend to be veridical), namely clauses with negative polarity (which are anti-veridical) or open polarity (i.e. questions and conditionals, which are non-veridical). Therefore, if an NPI can appear in a non-negative context, the polarity of the clause must be open. In (562)-(564), the NPIs *at all* and *ever* are licensed in negatives (562), and in questions (563) and conditionals (564), which both have open polarity. They are not permitted to occur in affirmatives (565), which have positive polarity:

(562) a. He can't sing at all.
b. He hasn't ever been able to sing.

(563) a. Can he sing at all?
b. Has he ever been able to sing?

(564) a. If he could sing at all, he would be a star.
b. If he could ever sing, he would be a star.

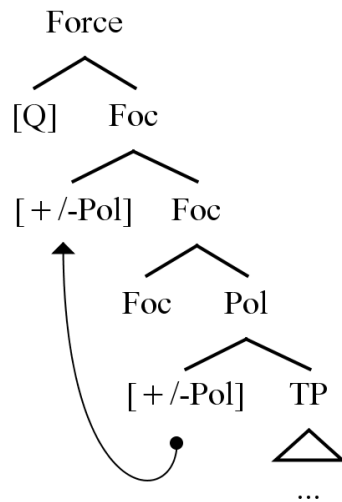
(565) a. *He can sing at all.
b. *He can ever sing.

5.1.3. Force and polarity = question

In this chapter, I argue that a true, information-seeking, neutral yes/no question has these two heads Force and Polarity, with the features [Q] and [\pm Pol]. These features together provide the question force: they mean roughly, 'Tell me the answer, true or not true that P'. I follow Holmberg (2012) in assuming the

structure in (524), repeated here as (566) (although Holmberg has the [Q] feature in QP rather than Force):

(566)



The open polarity variable is attracted to Spec,FocP, the same position that *wh*-words move to in *wh*-questions, as the focussed (questioned) element.

In the next section, the intonation of different types of questions in different languages is used to show that these two features are distinct, and that they can be realised in different ways.

5.2. Question intonation

5.2.1. *Intonation in English questions*

The ‘man on the street’, if asked, would tell you that intonation goes up at the end of a question. The ‘uptalk’ phenomenon that has been stigmatised in the last two or three decades, in which declarative utterances may end with a rising tone, is usually described as ‘talking like every sentence is a question’ and punctuated with question marks to illustrate this. It is also thought by US speakers to have originated in Californian ‘Valley girl’ speech, and by UK speakers to have come from Australian soaps. Some examples from the media illustrate this widely-held perception (emphasis mine):

(567) [HRT is] the technical term for "uptalk" - the way kids speak so that *every sentence ends with an interrogative tone so that it sounds like a question* even when it's a statement?

(Guardian 21 Sep 2001, Matt Seaton, 'Word up'
<<http://www.guardian.co.uk/books/2001/sep/21/referenceandlanguages.matt.seaton>> [Accessed 14 March 2012])

(568) Whenever I speak all of my sentences sound like questions, how do i stop talking like this?

Don't raise the pitch at the end of your sentences. That's how we indicate questions. Most English speakers slightly lower the pitch at the end of each statement, usually just the final few words. This is why we can tell if someone is done speaking or not.

(Yahoo! Answers.
<<http://uk.answers.yahoo.com/question/index?qid=20110226101028AArflxY>> [Accessed 14 March 2012])

(569) 'Uptalk' definition:

A speech pattern in which phrases and sentences habitually end with a rising sound, *as if the statement were a question*. Also known as a high-rising terminal (HRT).

(About.com grammar.
<<http://grammar.about.com/od/tz/g/uptalkterm.htm>> [Accessed 14 March 2012])

This characterisation of questions as having rising intonation seems intuitively true, and there is some truth in the perception. After all, (570), said with final rising intonation, is very much more, in some sense, a 'question' than (571), said with falling intonation:

(570) You didn't see the gorilla?

(571) You didn't see the gorilla.

In this chapter I argue that such 'rising declaratives' do have a 'questioning component' but that they are not questions: they do not have question force. The man on the street would agree with me here, as this speech mannerism is jarring precisely because the utterances are not questions and so they 'shouldn't' have a rising intonation. Before that, I briefly give an overview of some authors who have also attributed rising intonation to questions and I provide some discussion

of authors whose studies have found that, in fact, the situation is more complex. §5.3 argues, with these authors, that rising intonation and questions are not always found in combination in English, and that intonation in English is not a realisation of question force but has a pragmatic effect. However, in other languages, intonation has a syntactic role in questions, and can realise force, polarity or both.

Rising question intonation

Many authors have stated, to one degree or another, that yes/no questions have rising intonation. All note that *wh*-questions have a different intonation altogether, a fact that has escaped our man on the street. Much of this work is based on careful study, and many works note that there are atypical yes/no questions that have different intonation, so I provide this overview merely to show that it has been a commonly-held assumption that all 'normal' yes/no questions have final rising intonation.

Jones (1962), for example, describes two 'tunes', Tune 1 and Tune 2. Tune 1 has a falling intonation on the last stressed syllable, and is used with statements and *wh*-questions. Tune 2, on the other hand, has a rising intonation on the unstressed syllables following the last, low, stressed one, or if there are no final unstressed syllables, the last stressed one has rising intonation. This tune is used for yes/no questions, as well as 'first parts of sentences' (1962: 284) and 'statements with an implication' (1962: 285). It is also used in alternative questions, for all the alternatives apart from the last, which is said with Tune 1. This alternative question intonation is an extension of the tune's 'first parts of sentences' use. Jones claims that yes/no questions have this tune because 'they imply the continuation "or not"' (1962: 293), meaning that the question itself is the first part of a sentence, the remainder of which is not pronounced.

Jones also notes, however, that while '*statements* other than enumerations are not often said with an unmodified Tune 2[,... t]hey are, however, very often said with a *modified* Tune 2' (1962: 293, emphasis original). Furthermore, he

acknowledges that ‘Tune 1 [...] is sometimes applied to questions requiring the answer “yes” or “no”’ (1962: 307), and that it implies an invitation. He gives examples including the following:

(572) Shall we get some apples? = It would be a good idea to get some apples.

(573) Will you come and dine with us? = I invite you to come and dine with us.
(Jones 1962: 307)

Additionally, a question may be said with falling tone if it contains a word with contrast emphasis, as these are, according to Jones, ‘an invitation to assent, and not expressing a desire for information’ (1962: 308) (note though, that (575) also contains a tag, which also provides a ‘confirmation’ interpretation):

(574) DID they say so?

(575) THAT’S the direction, isn’t it?
(Jones 1962: 308)

Gimson and Cruttenden (1994[1962]) also attribute a rise to questions, noting that in RP the rise is a low one and in General American the usual rise is a high one. They also remark that a falling tone on yes/no questions can mark them as ‘brusque and demanding’ (1994: 245), and a rise-fall indicates that an utterance in the form of a yes/no interrogative is an exclamation.

Halliday (1970) and Quirk et al (1972) both attribute rising intonation to ‘uncertainty’ (Halliday 1970: 23) or ‘leaving [the utterance] open and inconclusive’ (Quirk et al 1972: 1044). In particular, Halliday notes that the uncertainty is with regard to the polarity of the proposition: ‘a falling contour means certainty *with regard to yes or no*. We go down when we know whether something is positive or negative, and we go up when we do not know’ (Halliday 1970: 23, emphasis original). This explains why *wh*-questions also have a falling intonation: they are not questions about the polarity, but about some other variable. Quirk et al give ‘question intonation’ as ‘rise or fall+rise’ (1972: 387)

and define 'declarative questions' as a type of question distinguished from declaratives only by their question intonation. They also point out the use of rising intonation on non-final clauses, such as the non-final elements of a list.

However, other researchers have been aware for many years that this picture is incomplete. Fries (1964), for example, highlighted that even a small corpus sample is essential to give a true account of intonation, and noted that '[u]nfortunately, so far as the evidence goes, the many assertions concerning *the rising intonation as the usual mark of yes-no questions in English* have not been based on any adequate body of quantitative information' (Fries 1964: 245). Crystal (1969) reports that Fries found questions to have a falling tone in approximately 62% of cases. The next section explores similar findings.

No special question intonation

Abbott and Costello performed a music-hall routine for many years called *Who's On First*, in which the joke was that the names of the Yankees baseball team were names like 'Who' and 'What'. Costello would become increasingly frustrated at Abbott's apparent refusal to co-operate and answer his questions about the members of the team:

- (576) Costello: Look, you gotta first baseman?
Abbott: Certainly.
Costello: Who's playing first?
Abbott: That's right.
Costello: When you pay off the first baseman every month, who gets the money?
Abbott: Every dollar of it.
<<http://www.baseball-almanac.com/humor4.shtml>>
[Accessed 31/08/2012]

A similar joke is told in primary schools throughout English-speaking countries, and was echoed in real life when Hu Jintao became General Secretary of the Chinese Communist Party in 2002, and President of the PRC the following year ('Hu is the President'; 'I don't know, who is it?', etc.). These are jokes, of course, and they involve *wh*-questions, which have falling intonation, rather than yes/no

questions, but they work precisely because there is no requirement that questions have a special intonation. If there was, the lines would sound strange and stilted and the sketch would not have endured since the early 20th century.⁶⁷

Gunlogson (2001) examines rising declaratives: that is, those utterances that have the form of a declarative but function as a question. She shows clearly that this type of 'question' does not have the same distribution as interrogative questions do. For example, like falling declaratives, they cannot be used when the questioner is supposed to be neutral, or 'out of the blue' with no context. Following Gunlogson, those utterances intended to have a rising intonation are marked with a question mark, and those with falling intonation are marked with a full stop:

(577) *At a committee hearing:*

- a. Are you a member of the Communist party?
- b. #You're a member of the Communist party?
- c. #You're a member of the Communist party.

(578) *To a co-worker eating a piece of fruit:*

- a. Is that a persimmon?
- b. #That's a persimmon?
- c. #That's a persimmon.

(Gunlogson 2001: 2)

She argues that two characteristics of an utterance combine to give different interpretations, the grammatical form (declarative and interrogative), which relates to commitment or lack of commitment, and the intonation (rising or falling), which commits either the speaker or the addressee. A declarative, she argues, indicates commitment to the proposition expressed. An interrogative indicates no commitment to its truth. A declarative utterance spoken with a falling intonation commits the speaker to the proposition, but a rising intonation

⁶⁷ My awareness of the existence of the Abbott and Costello routine and the fact that it relies on the statements and questions being ambiguous is due to a comment by Mark Liberman on Language Log: 'A substantive linguistic point illustrated by Abbott and Costello: there's no systematic prosodic difference between *wh*-questions and statements, at least in English.' Language Log 27/08/2011
<<http://languagelog.ldc.upenn.edu/nll/?p=3389>>

commits the hearer. Gunlogson claims that a declarative is only interpretable as a question if it is uninformative with respect to the addressee's 'commitment set': the addressee is already publicly committed to the proposition.

Interrogatives are by definition uninformative. In this case, the declarative cannot be interpreted as new information and must be interpreted as a request for confirmation. This follows from Beun (1990), who argues that a declarative can only be interpreted as a question if:

- a) the sentence type is declarative,
- b) the speaker believes the hearer is the expert on the topic, and
- c) the speaker believes that it is mutually believed that the hearer is the expert on the topic [i.e. the speaker believes that the hearer also believes himself to be an expert on the topic].

(Beun 1990: 42, slightly modified)

If the speaker believes that the hearer is the expert on the topic, the speaker assumes that he knows the content of the utterance and can interpret it as a 'superfluous' utterance (1990: 42), and therefore interpret the declarative as a question. If the speaker does not believe the hearer to be the expert, she may utter a declarative without intending it to be a question, but if the hearer believes himself to be the expert, he may interpret it as a question anyway. Conversely, the speaker may utter a declarative intended as a question, but if the hearer does not believe himself to be the expert, he may interpret it as a declarative statement.

The preceding account of Gunlogson's argument leads to the following typology:

Table 10. A typology of questions and declaratives, based on Gunlogson (2001).

	Falling intonation	Rising intonation
Declarative form	Assertion (if informative wrt addressee), committing the speaker to the proposition.	Biased question, committing the hearer to the proposition.
Interrogative form	Question, committing no one to the proposition. ⁶⁸	

Gunlogson therefore notes that interrogatives may have rising intonation, but also that they frequently do not. Furthermore, she states that declarative questions do not always have rising intonation, noting that ‘falling declaratives are a relatively common way to ask a question in the functional sense of soliciting a yes-no response from a knowledgeable addressee’ (2001: 101). The difference between this type of question and the ‘assertion’ in the first cell of the table is one of informativeness – an assertion changes the context (in Gunlogson’s terms) by committing the speaker to a proposition, whereas a declarative question does not. However, a declarative question is still biased, because declaratives are inherently biased while interrogatives are not (though they may have bias due to some other factor, such as negative questions, tags and so on).

Gunlogson (2001) argues that the contexts in which a falling declarative can be used as a polar question constitute a subset of those in which a rising declarative can be interpreted in this way, and these in turn are a subset of the contexts in which an interrogative can function as a polar question. Clearly, in English the intonation of an utterance is not linked to its illocutionary force.

In fact, falling intonation even on declaratives intended as questions can be extended to at least one other Germanic variety. Beun (1990: 41) states that ‘in Dutch, however, (and probably also in English), the utterance often lacks the

⁶⁸ Gunlogson (2001) does not discuss falling interrogatives, but notes that ‘[t]he difference between rising and falling interrogatives in the account as it stands is not very significant: a rising interrogative represents an identity function on the Addressee’s commitment set, whereas a falling one would represent an identity function on the Speaker’s commitment set. The effect in both cases is to leave the context unchanged’ (2001: 156).

final rising in natural spoken English', although Quirk et al (1972) argue that the final rise on such questions equates them to tags. In a corpus of questions obtained from telephone conversations about flight times with roles played by informants, just 48% of declarative questions in Dutch had rising intonation. In other words, more than half of declarative utterances used as questions did not have the rising intonation normally expected of a question. It is important to note that 13% had some other indicator that would let a hearer know the utterance was a question, such as a second person performative verb like *You said*, about which the hearer knows best. A subset of the declaratives with rising intonation also contained such a marker; for instance, all utterances with a final tag *hè* also had rising intonation. In total, 61% had some indicator of the question function of the utterance and 39% had no question indicator at all.

Beun also found that certain particles used in declarative questions with falling intonation played a very important role in the interpretation of such utterances as questions, when the questions were taken out of context and presented on a screen with no prosodic cues. This indicates that with no intonational or contextual information, other indicators of question force are needed. However, other studies have not necessarily found that this is the case.

Englert (2010), for example, examined a naturally-occurring corpus of dialogues between friends in various social settings and between a hair stylist and clients in a hairdresser's, and found that 38% of polar questions were declarative in form, compared with 34% with subject/verb inversion and 28% formed with a final tag. This makes declarative questions the most common option, although Englert does point out that the majority of questions are marked morphosyntactically with one of the other two options. Although some questions were single words or phrases rather than full clauses, of the clausal declarative questions 55% occur with no discourse marker. Discourse markers are defined as 'stance markers, inferential connectives, epistemic modal adverbs, hedging tags, modal particles' (Englert 2010: 2672). Although Englert states that the ability of speakers to treat these as questions 'may be partly due to intonation' (2010: 2671), only 49% of all the declarative questions in her corpus had rising

intonation, the rest having falling or level final pitch. While it is possible that those with rising intonation encompass the ones that have no discourse marker,⁶⁹ Englert does not discuss the possible combinations of the properties. If it is assumed that those with no discourse marker do not form a proper subset of those with rising intonation, other factors must be involved. Englert notes that ‘almost all’ declarative questions were related to the hearer’s ‘domain of knowledge’ (2010: 2672): that is, information which the hearer has a privileged position to know because it concerns his thoughts, feelings, actions, lifestyle etc. Englert gives the example in (579), in which the client at a hairdresser’s suggests the reason that the stylist has moved out of the city. This is something about which both participants recognise that the stylist is more knowledgeable, and in fact she contradicts the client’s reason in her response. For this reason, it can be expressed as a declarative question. Englert does not note the intonation of this particular question, but in English this would be acceptable with falling intonation:

(579) maar je bent er ook puur alleen natuurlijk nou
 but you are there_{PRT} pure only of.course _{PRT}
 vanwege het huis
 because.of the house
 ‘But you are there really only because of the house.’

Englert’s study indicates that the most important factor is that of domain of knowledge, and that prosodic cues or other question indicators are less essential in determining whether an utterance is a question. She also points out that most declarative questions are not used to seek information, but rather to achieve other aims such as securing agreement.

Geluykens (1989, discussing results from his 1988 study) also gives a similar result, with experimental data showing that just 32% of ‘declaratives’ (i.e. declarative questions) ended with final rising tone, and that this has no effect on hearers’ ability to recognise such utterances as questions. Geluykens, too, suggests that lexical information is likely to be the vital element in interpreting

⁶⁹ In other words, the 55% (N=30) of clausal declarative questions with no discourse marker might be a proper subset of the 49% (N=44) of all declarative questions with rising intonation.

declaratives as questions. Having dismissed the role of intonation in questions, he discusses the fact that rising intonation is to be found more often in questions than elsewhere, and suggests that it is a 'polite' or 'agreeable' question-asking intonation, and that falling intonation questions more often receive challenging responses. This suggestion is consistent with Gimson and Cruttenden's (1994) analysis of question intonation.

Brown et al (1980) conducted a study on speakers of Scottish English and found the situation to be closely identical: although participants had a tendency to judge items in isolation with a terminal rise to be questions, they claim that there was 'no consistent intonational cue as to what is or is not a question' (1980: 175). They isolated 36 polar questions, some of which were single words or not full clauses, their definition being 'things that are answered'. Of these, eight had a terminal rise, and 28 had a falling intonation, to mid or to low in equal number. The 14 that had a final fall to low pitch were those to which the speaker already knew the answer and simply sought confirmation rather than information. The speaker was as likely not to know the answer with a falling intonation to mid pitch as with a rising intonation. Their declarative questions, however, all ended with a fall to low pitch and all were used in situations in which the speaker knew the answer already: 'conducive questions, all declarative questions and some polar questions, are regularly asked on a fall-to-low' (1980: 187). Brown et al are more allied with Jones, Halliday, and Quirk et al rather than Gimson and Cruttenden and Geluykens in arguing that a final high rising intonation indicates a continuation, uncertainty or deference. They also note that questions posed to children do tend to rise, supporting Geluykens's suggestion that it is the neutral question attitude. However, child-directed speech is aimed at eliciting a response more overtly than adult-to-adult speech, and as such the consistency of the terminal high rise may be a result of this insistence on a response.

Hirst (1998) also discusses the intonation of Southern Standard British English questions and finds that rising intonation is not limited to questions, and questions do not require rising intonation. He notes that rising intonation has been associated with surprise (Cruttenden 1970), incompleteness (Faure 1962),

'evocative value' (Jassem 1952, Brazil 1975, Gussenhoven 1983) or as not adding to the 'mutual cognitive environment' (Sperber & Wilson 1986), a proposal that has similarities to Gunlogson's. Hirst concludes that it is not advisable to equate final pitch to a particular speech act. Similarly, Bolinger (1998: 50), when discussing American English, says that '[e]ven Yes-No questions have been shown to fall about as often as they rise', although echo questions do 'almost invariably' rise, a fact which Bolinger attributes to a 'higher degree of tension' (1998: 50).

Rising intonation has been argued in this section to be distinct from question force: rising intonation may occur in non-questions, and questions may occur without rising intonation. One serious problem is that it is often difficult to determine the intonation that a hearer perceives: simply measuring pitch does not always reflect the intonation that a hearer reports hearing. Wakefield (2010: 23), discussing Roach (2009: 3), states that '[s]omething that a machine records as a rise in pitch, for example, is not necessarily heard by listeners as a rise, and therefore – even though clearly seen on paper – is not linguistically meaningful'. He provides an example (2010: 110) of what look like very different patterns but which sound like they have the same intonation to native speaker listeners. Nevertheless, rising intonation is apparently more common in 'normal' questions (i.e. those marked with auxiliary-raising) (Geluykens 1988: 473-476), so it seems that it must play some role. It has been suggested that it is associated with lack of speaker commitment (Gunlogson), surprise or incompleteness (Hirst), or neutral question attitude (Geluykens 1989).

A note on declarative questions and elliptical questions

It is important to note the difference between rising declarative questions and questions such as that in (580), which is not a declarative but an interrogative with deletion of the fronted auxiliary (Fitzpatrick 2006: 400):

(580) Anybody want a hotdog?

The lack of third person present tense morphology on the verb in (580) indicates that it is not simply a declarative form. (580) is exactly equivalent to (581), sharing its ability to appear in neutral, information-seeking contexts, unlike rising declaratives:

(581) Does anybody want a hotdog?

Although it is an informal construction and is therefore not felicitous in some of Gunlogson's (2001) contexts, such as an interview panel or exam paper, this type of question is suitable 'out of the blue':

(582) [To a passer-by:]
You got any jump leads?

(Based on Gunlogson 2001: 81)

In the neutral contexts in which these questions are permitted, standard interrogatives with auxiliary raising are also grammatical, but rising declaratives are impermissible, as (583)–(585) show:

(583) (You) done anything interesting lately?

(584) Have you done anything interesting lately?

(585) *You've done anything interesting lately?

In British English, this 'aux-drop' type of question is more likely to also have a dropped subject, when that subject is a pronoun. The question in (582) is equivalent to the British English (586):

(586) Got any jump leads?

Note that with subjects other than 3rd person singular, there is a potential ambiguity as there is no overt morphological marking on the verb. (587), for example, is ambiguous between a rising declarative and an aux-drop question:

(587) You want to go and get a curry?

In fact, there are certain ways of distinguishing the two, including the licensing of NPIs and their intonation, but in the written form, they are identical. It is important to ensure that these question types are kept distinct if generalisations are to be made about their use. In order to avoid any ambiguity, examples are used with overt tense/person marking, and examples such as (587) are avoided. Sentences are unproblematic if they have an indefinite subject such as *anybody* as in (580) above, where **Anybody wants a hotdog* would be ungrammatical. Similarly, sentences with 3rd person singular subjects have overt verbal morphology.

5.3. A new theory of illocutionary force and question intonation

Intonation interacts with the two features identified in §5.1.1 in different ways in different languages. Intonation may realise force, polarity, both, or neither. This explicitly links intonation with the syntax and argues that intonation is the realisation of syntactic entities (at least in certain languages). Lillo-Martin and Quadros (2010) note that in sign languages, illocutionary force is usually indicated with non-manual markers such as signs made with the eyebrows. One view is that these non-manuals are equivalent to prosody, another is that they reflect syntactic elements. On the first view, for those who subscribe to it, illocutionary force in sign languages is entirely marked by extra-syntactic means (phonology and pragmatics). However, in the discussion which follows, I argue that intonation can itself be the realisation of syntax, and the two need not be completely distinct.

This is a similar line to that taken by Wakefield (2010), who analyses four Cantonese sentence-final particles (SFPs) and identifies their equivalent English intonation. He argues that each particle is the manifestation of a particular intonation contour, and that the two express a specific syntactic element. Citing Tang (2006), who argues that Cantonese rising intonation on declarative questions occupies the same syntactic position as the SFP *me1*, he allocates each

particle to a specific grammatical function and identifies the equivalent intonation in English, using native bilingual speakers as informants. Wakefield regards intonation as a device to encode grammatical and discourse features (compared with prosody, which expresses attitudes and is paralinguistic), and the rising declarative intonation as a floating tone: a 'lexical entry in the form of a floating-tone morpheme that adds meaning to a sentence without changing the clause type' (2010: 57). Conversely, SFPs are 'largely intonation in segmental form' (2010: 57). The particles have extremely diverse meanings dependent on context, which Wakefield argues is due to the fact that they contain a variable which refers to an antecedent. They are located in DiscourseP, with a discourse function linking the clause to the discourse. He argues against their inclusion in Force because they can attach to many clause types and do not type the clause.

5.3.1. A novel typology

As discussed in section 5.1.1, I argue that questions comprise two elements, a question feature [Q] in Force and a polarity variable [\pm Pol] in Polarity. Using these two elements, we can formalise the typology of questions introduced in Chapter 4: §1 (based on Bailey et al. 2010), combining these two features in different ways in order to define several types of question.

An utterance that has the feature [Q] has question force, and therefore the speaker requires an answer to the question (that is, the speaker genuinely wishes and expects the hearer to respond to her question). This is not merely a matter of appropriate circumstances, as the grammatical form of the question can also affect whether it has [Q] force. The questions in (588) and (589) are felicitously answered with 'yes' or 'no', whereas an answer to the embedded question in (590) is infelicitous. That is not to say that the hearer could not respond to the utterance, but the information that there are some witnesses would in that case be extra information not asked for by the speaker, as the only illocutionary force of the utterance is that of the main clause, which is a statement. The simple answer particle *yes* would not suffice, and the form of the

response would be likely to be something like *Oh. Well, there are some. I'll let the police know.*

(588) Are there any witnesses?
Yes.

(589) There are some witnesses, aren't there?
Yes.

(590) The police need to know [whether there are any witnesses].
#Yes.

In §5.1.2 I showed that polarity can be open, affirmative or negative, and that in cases where it is not clear, NPIs can be used as a test. NPIs are licensed in all negative contexts, so they can tell us nothing about the polarity of negative utterances other than that they are negative. However, if an utterance contains no negative element and an NPI is permitted, this is a good indication that it has open polarity (cf. the discussion of NPIs and veridicality in §5.1.2 above). The sentences in (562)-(565), repeated here for convenience as (591)-(594), have the following polarity values:

(591) a. He can't sing at all. [negative, -Pol]
b. He hasn't ever been able to sing.

(592) a. Can he sing at all? [open, ±Pol]
b. Has he ever been able to sing?

(593) a. If he could sing at all, he would be a star. [open, ±Pol]
b. If he could ever sing, he would be a star.

(594) a. *He can sing at all. [affirmative, +Pol]
b. *He can ever sing.

The NPIs *at all* and *ever* are licensed in (591), which contains the negative particle *n't* (*not*). They are also licensed in (592) and (593), neither of which contain any negative particle, indicating that they have open polarity (and they are non-veridical, as *Can he sing at all?* does not entail *He can sing at all*, and *If he could sing at all* does not entail *He could sing at all*). The NPIs are ungrammatical in (594), because the polarity is affirmative, which is the context in which NPIs are not permitted to occur.

Thus the two features combined give us six possible combinations of [$\pm Q$] and [$\pm Pol$], which can be used to describe types of question. For example, the questions in (588)–(590) above, repeated here as (595)–(597), have the following descriptions:

(595) Are there any witnesses? [$+Q, \pm Pol$]
Yes.

(596) There are some/*any witnesses, aren't there? [$+Q, +Pol$]
Yes.

(597) The police need to know [whether there are any witnesses]. [$-Q, \pm Pol$]
#Yes.

(595) has question force because the speaker requires an answer, and to give one is felicitous. Likewise, although (596) is a tag question, it is still appropriate to answer it. However, while (595) does not presume that there are or aren't witnesses, (596) expects that there are, and so has affirmative polarity. We can confirm that it does not have open polarity because the NPI *any* is not licit in this question and *some* must be used instead: it is an affirmative statement with a final tag appended. The embedded question in (597) does have open polarity, as is evident from the fact that the NPI is permitted, but it does not seek an answer. As illustrated in (590), an answer to the embedded question is quite strange and not sought for by the speaker uttering such a question.

Using these two variables, the availability of [Q] in Force and a polarity variable in Pol, the following typology can be obtained:

I. Open questions [+Q, ±Pol]

Open (or ‘true’) questions presuppose no particular answer and are asked when the speaker wants to know the answer. They therefore have [Q], as they call for an answer, and open polarity, as neither answer is presupposed, as shown in (598). We can also check that an NPI such as *ever* is licensed, in (599):

(598) Have you read ‘The Day of the Triffids’?
Yes/No.

(599) Has your cactus ever flowered?

II. Speculative questions [-Q, ±Pol]

Speculative questions are those to which the speaker does not expect the hearer to know the answer, but merely wonders aloud. These therefore have no [Q] feature:

(600) I wonder if it will rain on Friday.
#Yes/#No.

Speculative questions have open polarity as the speaker has no expectation of what the answer will be. This is not as readily evident as it is for open questions above: as an answer is not expected, neither seems natural. However, the open polarity can be demonstrated through the fact that an NPI is possible in speculative questions:

(601) I wonder if Jacqueline ever thinks about me any more.

In English, speculative questions tend to be embedded under the verb *wonder*, although this is not an absolute requirement of speculative questions. In other languages, they may be constructed in some other way: Swedish, for instance,

has a special ‘speculative question particle’ *månne* and Finnish uses the standard question particle *ko* combined with a particle which in other contexts roughly means ‘actually’ to mark speculative questions. Both languages also license an NPI in speculative questions, showing that the open polarity is related to the question type rather than its grammatical form. Additionally, an answer is not called for in either language:⁷⁰

(602) Månne romarna drack kaffe alls?
 Q Romans drank coffee at.all
 ‘I wonder whether the Romans drank coffee at all?’
 #Ja/ Nej
 Yes/ No

(603) Joivat-ko-han Roomalaiset kahvia ollenkaan?
 drank-Q-PRT Romans coffee at.all
 ‘I wonder whether the Romans drank coffee at all?’
 #Joivat/ Ei juoneet
 drank/ not drank
 ‘Yes/No’

III. Embedded questions [-Q, ±Pol]

Embedded questions have the same values as speculative questions because, like speculative questions, they have open polarity but do not require an answer. They are distinguished by their form rather than their function. They are the complement of a higher verb. They do not require an answer and so lack [Q], as shown in (604). They do not presuppose a particular answer and they license NPIs, as shown in (605), and so have open polarity:

(604) I asked him if he’d seen my copy of ‘The Invisible Man’.
 #Yes/No.

(605) I asked him if he had ever thought about becoming a politician.

⁷⁰ All Finnish and Swedish examples and graphs in this chapter are provided by Anders Holmberg (p.c.), unless otherwise specified.

This gives embedded questions the same categorisation as speculative questions, discussed in II, of being neutral with respect to the answer but not information-seeking. They differ, however, in their use. A speaker asks a speculative question on the assumption that the hearer does not know the answer. A speaker asking an embedded question may know that the hearer does know the answer, but she does not seek that answer because she already knows it herself, or it is not important to the discussion. The crucial speech act involved is that of an assertion. The meaning that the speaker wishes to convey is that *someone asked something*, and the answer to that question is immaterial. While speculative questions are often embedded in English, we saw above that they may not be so in other languages. However, embedded questions are, by definition, always embedded under some kind of subordinator ‘if’/‘whether’. An example from Syrian Arabic is given in (606):⁷¹

(606) sʔal-t-w iza bdd-w y-ruḥ ‘a-l-masraḥyieh
 asked-1SG-3SG.ACC if want-3SG.ACC INDIC-go to-the-play
 ‘I asked him if he wants to go to the play.’

As can be seen in (607), NPIs are also licensed in Syrian Arabic embedded questions, and an answer is not called for:

(607) ‘am isʔal iza bʔyan ayya btaʔat la-l-masraḥyieh
 INDIC ask.1SG if left any tickets to-the-play
 ‘I’m asking if they have any tickets left for the play.’

#ʔe/laʔ
 yes/no

IV. Alternative questions [+Q, +Pol]

Alternative questions have [Q], like neutral questions, but they differ from polar questions in the choice of answers: rather than *yes* or *no*, the answer is one of the alternatives provided in the question.

⁷¹ All Syrian Arabic examples and graphs in this chapter are provided by Mais Sulaiman (p.c.), unless otherwise specified.

(608) Would you rather be able to fly or be invisible?
#Yes/#No.
I'd rather be able to fly.

The formulation *would you rather* is used in order to bring out the alternative meaning as clearly as possible, as alternative questions can be ambiguous between the alternative reading and a polar question reading. For example, (609) can be a question asking which of the two, a cat or a dog, the hearer wants for a pet with the presupposition that the hearer wants one of those two choices as a pet. In this case, the appropriate answer is the correct alternative of the two. However, it can also be a question asking if the hearer wants a pet, and the question provides examples of the sort of pet the speaker is thinking of. In this case, the question is a polar question and the answer *yes* or *no* is appropriate:

(609) Do you want a pet cat or dog?
Yes/No.
A cat/A dog.

In spoken language, the ambiguity is resolved through intonation. Alternative questions have two intonation contours, with a rising intonation on the first and any subsequent non-final alternative, and a fall on the last (or, at least, the final alternative is said on a pitch lower than the non-final alternatives). Polar questions of the form in (609) have a single pitch contour. As discussed in §5.2, this intonation is difficult to categorise, but it is a single contour from start to end, encompassing both alternatives. In written language, however, these two types of question are indistinguishable without reference to their possible answers. Some lexical items, such as *would you rather*, reduce the ambiguity but do not eliminate it completely: it is possible to ask (608) with the polar question intonation, and the implication is that the two alternatives are offered in contrast to something else:

(610) A: I don't want to be Spiderman, he can only shoot webs from his wrists and scale tall buildings. Those are rubbish superpowers.
B: (Well,) would you rather be able to fly or be invisible? (Those are the other two options: you can be Superman or the Invisible Man.)
A: Yeah. (I'll be Superman.)

Therefore, I provide the possible answers to the question wherever the question may be ambiguous.

Alternative questions clearly seek an answer, and it is infelicitous not to provide one, so they have [Q]. However, they do not have open polarity, as can be seen from the fact that an NPI is not licensed in an alternative question:

(611) *Would you prefer rice or chips at all?
(Rice, please.)

The same is true of alternative questions in other languages; an example is given from French:⁷²

(612) *Tu préfères du riz ou des frites ou quoi que ce soit d'autre?
you prefer some rice or some chips or anything else?

This follows because open polarity means that the proposition is neither affirmative nor negative. In the alternative questions in (611) and (612), the speaker presupposes that the hearer wants some X, and the variable is not the sentence polarity but the value of X. The sentence itself is therefore affirmative (the presupposition is that you want something), with the variable ranging only over the two choices of *rice* or *chips*, and the polarity is [+Pol]. Note, however, that NPIs are licensed, as expected, when the question is interpreted as polar and therefore has open polarity:

(613) Would you prefer rice or chips at all?
Yes, thank you. (I'll have rice.)

Although alternative questions may apparently be uttered in a negative form, as in (614), this is in fact not an alternative question. It functions as a polar question, and is the negative counterpart of (613). This is evident from the

⁷² All French examples are provided by Caroline Cordier (p.c.) unless otherwise indicated.

appropriate answer, which is (if the negative presupposition in the question is true) *No*:

- (614) Don't you want rice or chips?
No.
*Rice (is what I don't want).

V. *Requests [+Q, +Pol]*

Requests take the form of a question in English, and like questions require some response. They can be answered *yes* or *no*, meaning that they have [Q]. They are [+Pol], because they expect a positive answer and do not license NPIs:

- (615) *Can you pass me the salt at all?

The same is true of some other languages:

- (616) #Kan du någonsin skicka saltet? [Swedish]
can you ever send salt-the
'Are you ever able to pass the salt?'

- (617) *b-t't-i-ni l-mlh shi? [Syrian Arabic]
would-give-2SG-1SG.ACC the-salt at.all
Intended: 'Could you please pass me the salt?'

This categorisation is the same as that for alternative questions, discussed in IV, but requests differ in the answer they expect: while alternative questions seek an answer that is one of the alternatives given in the question, requests are *yes/no* questions and the answer should be *yes* or *no*. Specifically, requests expect the answer *yes*: the speaker has made a request of someone because she thinks that person can comply with the request. If she genuinely did not know whether the hearer could comply, she would have asked a polar question. In order to reply in the negative, the hearer cannot simply answer *no*, but must apologise and explain. In fact, it is not felicitous to simply answer *yes*; the hearer should also comply with the request. As he does so he may utter an unadorned *yes*, but he may not simply state *no* while not complying:

- (618) A: Can you pass me the salt?
B: Yes. [Passes salt to A.]
B: #No.

In fact, this *yes* response is possibly the response to the identical true question. The speaker answers as if a polar question has been uttered but responds to the request, which does require a response in the form of a non-verbal action response. It is therefore not clear that we can say that requests have [Q]. However, I leave this aside for the present.

In other languages, the characterisation may be different. In Polish, it seems to be possible to use an NPI in a request, indicating that it has open polarity, and according to my analysis in §5.3.3 below, the optional presence of *czy* also supports this:

- (619) (Czy) możesz mi pożyczyć jakieś pieniądze?
Q can.2SG I.DAT lend.INF any money
'Can you lend me some money?' (Małgorzata Krzek, p.c.)

In Polish, then, requests may be identical to open questions, with [+Q, ±Pol], and the fact that the question is a request is pragmatically determined.

VI. Confirmation questions [+Q, +Pol/-Pol]

Confirmation questions are asked when the speaker has an expectation of what the answer is and merely seeks to have the assumption confirmed: they are biased questions. They do require an answer and so have the [Q] feature:

- (620) Those things are just for throwing out, aren't they?
Yes.

- (621) You don't want any of this stuff any more, do you?
No.

Tag questions are a common form of confirmation questions in English, and they do not have open polarity. They may be [+Pol] or [-Pol], according to the

speaker's assumption. *No* is not given as a possible answer in (620) because the question is biased and has the expected answer *Yes*. It is possible to answer a positively-biased question in the negative, but the particle must be emphatic, or supplemented: *No, they're to keep*. Likewise, (621) has the expected answer *No*, and to answer in the affirmative requires an emphatic *Yes* or *Yes, I do*. Holmberg (2012) explains this through an ellipsis account of polar answers, as discussed in Chapter 4: §1.1. Note that the polarity of the question is the polarity of the declarative clause of the sentence, and the tag has the opposite polarity.

NPIs are not licensed in positive confirmation questions, although they are trivially licensed by the negation in negative questions:

(622) *John ever eats cheese, doesn't he?

(623) John doesn't ever eat cheese, does he?

Other languages may also use a tag to signify confirmation questions, or some may have a special intonation. Examples from Swedish and European Portuguese using tags are given in (624) and (625), respectively:⁷³

(624) Din fru är vegetarian, eller hur?
 your wife is vegetarian or how?
 'Your wife is a vegetarian, right?'

(625) A tua mulher é vegetariana, não é?
 the your wife is vegetarian not is
 'Your wife's a vegetarian, isn't she?'

5.3.2. *Aims of the investigation*

The typology outlined in the previous section provides the basis for the investigation that follows. Now that each type of question has been characterised according to whether it has illocutionary question force [Q] and open polarity, it

⁷³ All Portuguese examples are provided by José Cruz da Ângela (p.c. to Michelle Sheehan) unless otherwise indicated.

is possible to examine a number of languages that use intonation differently in questions and determine, for each, what exactly is encoded by the ‘question intonation’. The languages investigated use intonation to a greater or lesser extent, some using ‘intonation-only questions’ (IQs) for all questions, some allowing it in restricted contexts and some not at all. This section aims to correlate the use of intonation as the sole question-marking device with one, both or neither of [Q] and [\pm Pol] and hence show a relation between intonation and a specific syntactic feature. The languages examined are Syrian Arabic, British English, Finnish, European French (henceforth ‘French’), Polish, European Portuguese (henceforth ‘Portuguese’), and Swedish. English and Swedish form questions using word order alternation. Finnish has a question particle. Syrian Arabic and Portuguese use a declarative structure with a special question intonation. French and Polish allow intonation as a question-marking strategy, but they also have a question particle and French additionally has word order as an option in signalling a question. The contexts in which each of these languages allows IQs is investigated in the remainder of this chapter. It is concluded that intonation in a particular language may realise both question force and open polarity, question force only, or neither of these syntactic features.

(626) *Question typology (summary):*

Open question	[+Q, \pm Pol]
Speculative question	[-Q, \pm Pol]
Embedded question	[-Q, \pm Pol]
Alternative question	[+Q, +Pol]
Request	[+Q, +Pol]
Confirmation question	[+Q, -Pol]/[+Q, +Pol]

Table 11. Typology of questions according to their syntactic features.

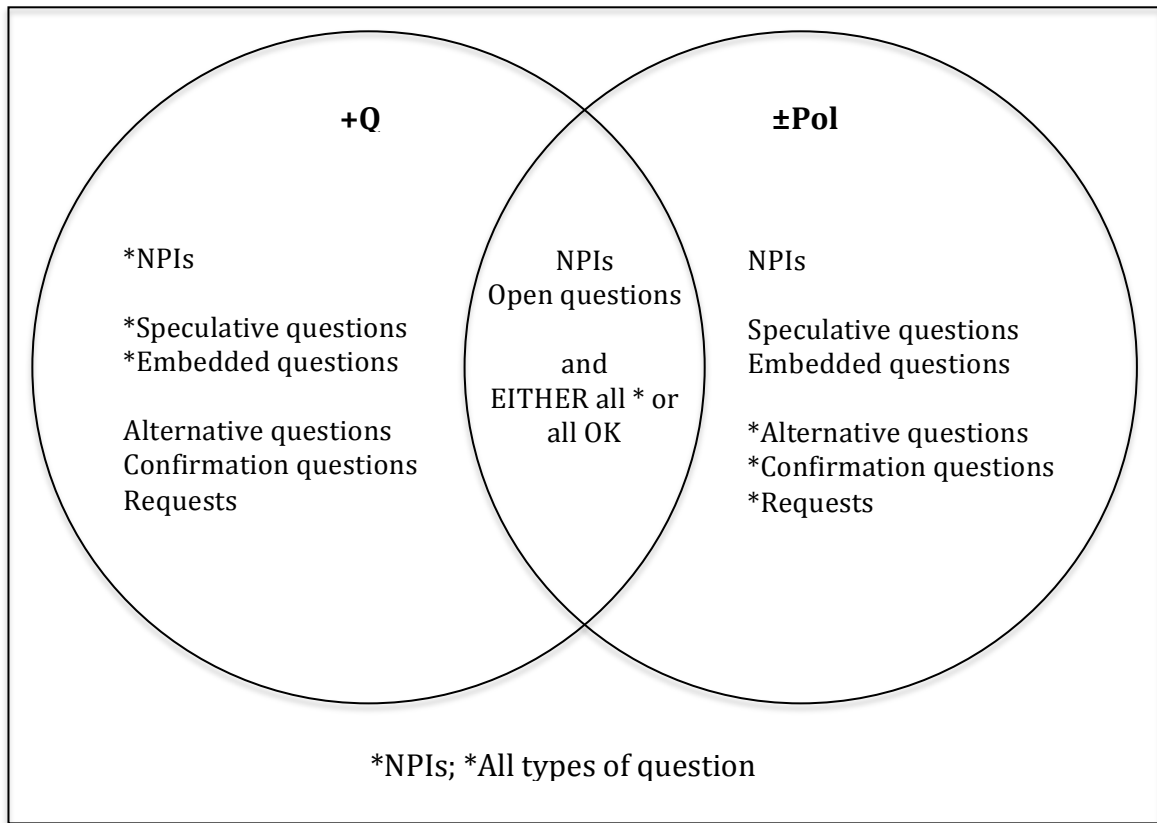
	+Q	-Q
\pmPol	Open question	Speculative question Embedded question
Affirmative/negative polarity	Alternative question Confirmation question (Request)	(Request)

The typology in Table 11 is based on the English questions discussed above, along with native speaker data regarding the other languages mentioned. It is applied to English, Swedish, Finnish, French, Portuguese, Polish and Syrian Arabic in the remainder of this chapter, in order to determine the way that [\pm Q] and [\pm Pol] are encoded in these languages. Table 11 is intended to be cross-linguistic, as it is based on the syntactic features of questions. The way these types of question are formed may vary from language to language, as shown in this chapter.

This typology categorises no questions as [$-$ Q, +Pol/ $-$ Pol], with the possible exception of requests, as discussed above. It is worth noting that this feature combination also characterises declarative assertions, so it is unsurprising that it cannot characterise any type of question.

Furthermore, 'question intonation' is hypothesised to encode one of the features involved in questions, so it is not expected to occur in utterances that have neither [+Q] nor open polarity. If intonation can encode one or both of these features in a given language, the following predictions are made about the distribution of intonation questions (IQs):

Figure 4. Predictions made about the distribution of IQs.



The figure shows that if intonation encodes question force, IQs should be licensed in alternative questions, confirmation questions and requests, but not in speculative or embedded questions, as these do not have [Q]. If intonation encodes open polarity, IQs should license NPIs, and be able to signify speculative questions and embedded questions but not alternative questions, confirmation questions or requests, as these do not have open polarity. If intonation encodes both features, NPIs should be licensed, and IQs should be able to mark open questions, which have both [Q] and [±Pol]. In addition, one of two predictions is made. One possibility is that intonation encodes both features and IQs are permitted only where both features are present, and so IQs are disallowed in all other question types. Alternatively, intonation may encode either feature, and therefore IQs are permitted to mark all question types. Finally, if intonation encodes neither question force nor open polarity, it does not license NPIs and no type of question is signalled by an IQ.

In the next section, the languages are examined. Examples of each type of question identified in this section were elicited and produced by native speakers, and audio-recorded. The questions were devised in English and translated as faithfully as possible while preserving idiomaticity. The question-marking strategy used in each language (particle, intonation, etc.) was based on what was natural, rather than trying to mimic English. Attention was paid to ensuring that questions were consistent across languages in terms of the syntactic features involved. Although the utterances were produced in isolation, every effort was made to produce them as naturally as possible. In future work, it would be beneficial to collect naturally-occurring speech and submit it to the same analysis. The recorded sentences were fed into Speech Analyzer, a programme that produces a graph showing the frequency (Hz) on the y axis, and the time (seconds) on the x axis. The line rises, therefore, where the pitch rises, and falls where the voice is lower, allowing any instance of rising intonation to be noted.

In the investigation, it is shown that in Polish, Portuguese and Syrian Arabic, intonation encodes both question force and open polarity, in French it encodes only question force, and in English, Swedish and Finnish question intonation is not a grammatical question-marking device at all.

5.3.3. Categorising the languages

English, Swedish and Finnish

As noted in §5.2.1, English does not have a special question intonation. However, English is usually suggested to allow intonation-only questions (IQs) such as that in (627):

(627) Your brother wants a coffee?

This is an example of the rising declaratives discussed in §5.2.1 above. As described in that section, this type of question in English cannot be used in all question contexts. Most crucially for this section, IQs cannot be used in true information-seeking contexts or when the question has open polarity: the

question in (627) cannot be understood as a neutral polar question, as the impossibility of licensing an NPI shows:

(628) *Your brother wants any coffee?

(629) *Your brother ever drinks coffee?

Auxiliary-raising questions must be used if the question is to be interpreted as a neutral polar question and the intonation is falling as for a statement:

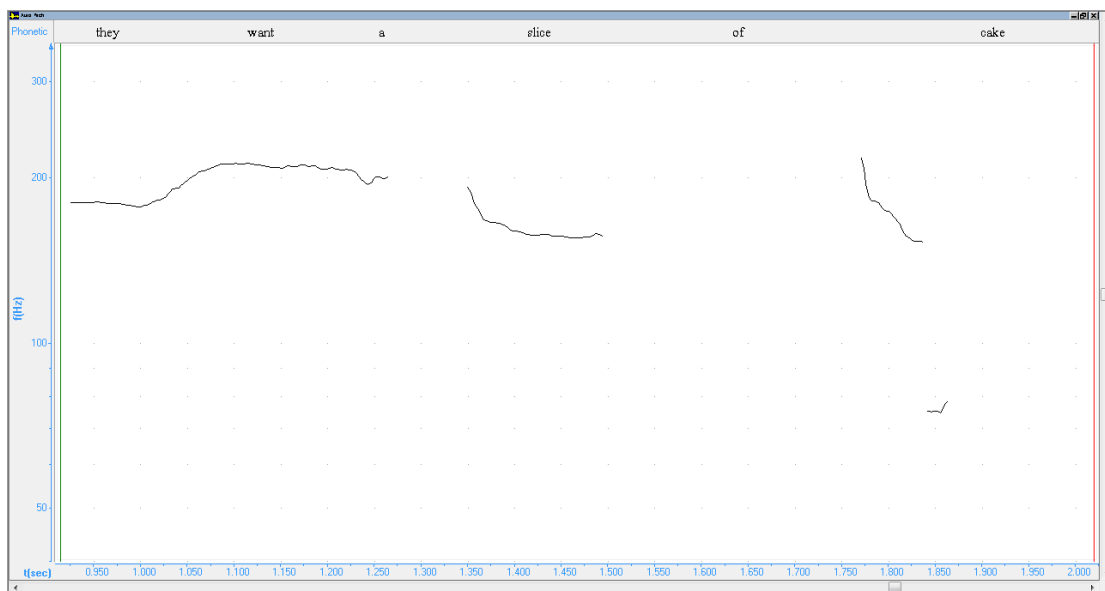
(630) Open question: *Do they want a piece of cake?*



(631) Open question: *Do you want wine?*



(632) Statement: *They want a slice of cake.*



Similarly, IQs in English cannot be speculative questions, alternative questions or requests (embedded questions have declarative word order for independent reasons):

(633) *Jacqueline thinks about me these days?

(634) *You'd rather be able to fly or to be invisible?

(635) *You can pass me the salt, please?

Again, in each case, the question must be syntactically marked and the intonation does not show a final rise:

(636) Alternative: *Do you want rice or chips?*



(637) Request: *Can you pass the salt?*



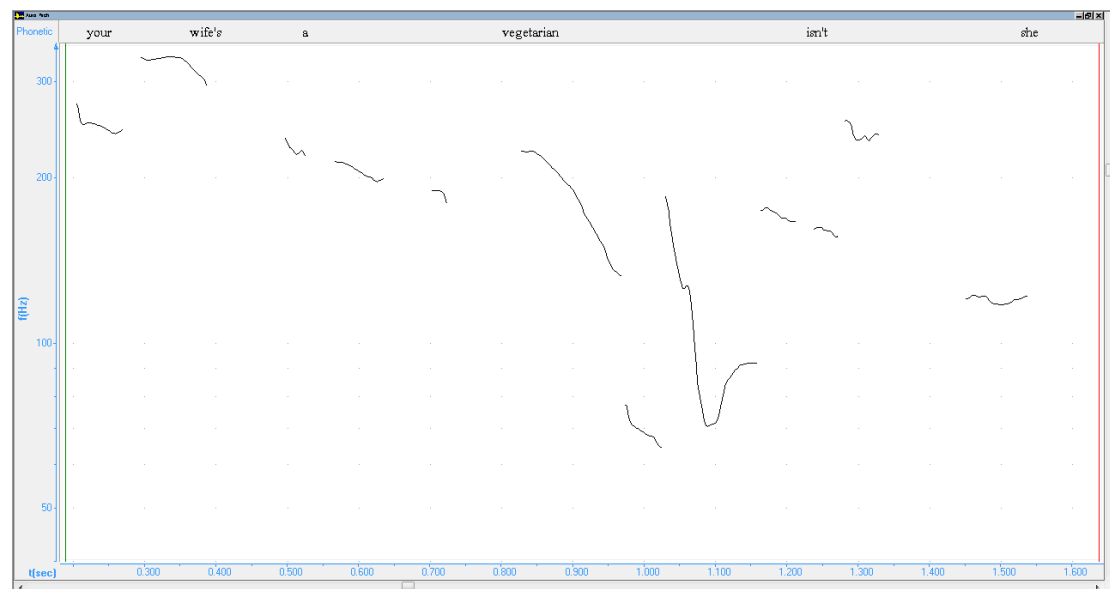
IQs are also impossible in two question types not discussed here, direction questions (when the questioner seeks advice or instruction) and rhetorical questions:

(638) *I should open a window?

(639) *I look like an idiot?

The only question type that can be marked with intonation alone is the confirmation question, and even here the role of intonation is limited. Those with a tag can have falling intonation:

(640) Confirmation question (with tag): *Your wife's a vegetarian, isn't she?*



Examples such as (641)–(642), which convey surprise or incredulity, do not necessarily have a final rise, contra Cruttenden (1970), although they may have it optionally, and have an overall higher pitch than simple 'final rise'. They may have a sharp rise and then fall on the final stressed syllable of 'surprise constituent' (i.e. *All along, Richard Burton, Champagne*):

(641) [Gasp!] He was the masked villain all along?

(642) Richard Burton's in the production? (I thought he died in 1984.)

(643) Henry's ordered Champagne? (But he's a recovering alcoholic; is that wise?)

These questions do not seek information; it is known to both the speaker and the hearer that the speaker knows the truth of the proposition, and does not need it to be confirmed. This is evident from the fact that they do not require an answer: it is completely acceptable to respond to (643) with (644):

(644) [Henry's ordered Champagne? But he's a recovering alcoholic; is that wise?]

I know, I think he's fallen off the wagon.

Clearly, if you can respond with *I know*, you have just been told something, not asked for the answer. 'Surprise' questions such as those in (641)–(643) are therefore [–Q]. They also do not have open polarity, shown by the fact that they presuppose the truth of a proposition (it has an echoic reading; the proposition is not asserted by the speaker, but rather accepted and repeated). In addition, they do not license an NPI:

(645) *Henry's ordered any Champagne?

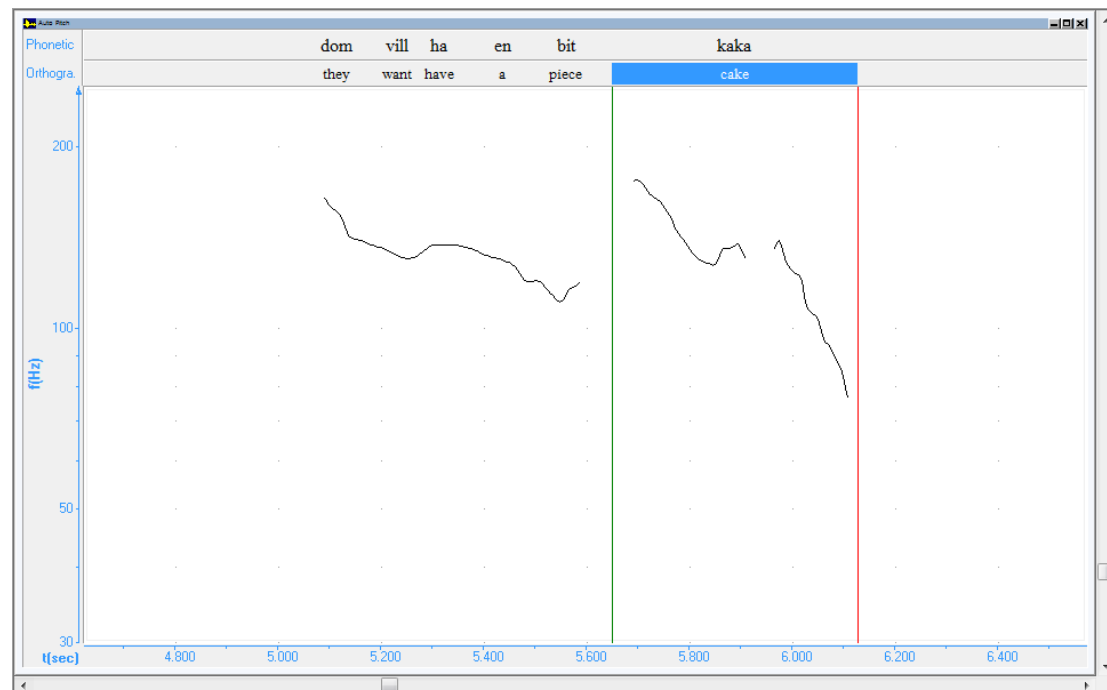
In the examples given here, the questions are all [+Pol], but could just as well be [–Pol]. They cannot, however, be [\pm Pol]. IQs in English are therefore [–Q, +Pol/–Pol] and as such, not questions in any formal sense of the term. Nevertheless, they are questions in a more everyday sense of the word, perhaps because they call for a response of some sort (though not an answer as neutral questions do). We would not wish to label them simply as assertions, as they convey more uncertainty than an assertion.⁷⁴

In Swedish and Finnish the description of intonation is more straightforward: there is no special question intonation and IQs are never used for any type of

⁷⁴ Asher & Reese (2005) claim that negatively biased questions are both a question and an assertion, in combination.

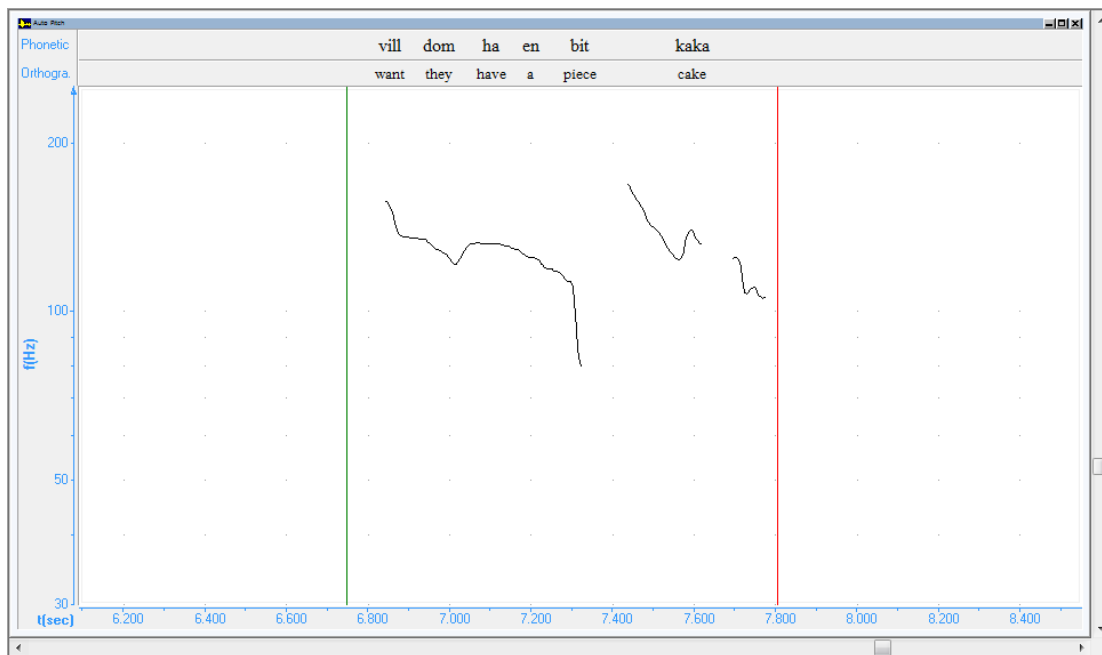
question. In fact, the intonation for all types of question is strikingly similar to that of a statement. The graphs in (646)–(653) illustrate that, in Swedish, which uses the same T-to-C word order alternation as English to form questions, all questions have a falling intonation. (646) shows the declarative intonation pattern, which is a final fall:

(646) Statement: *They want a piece of cake.*

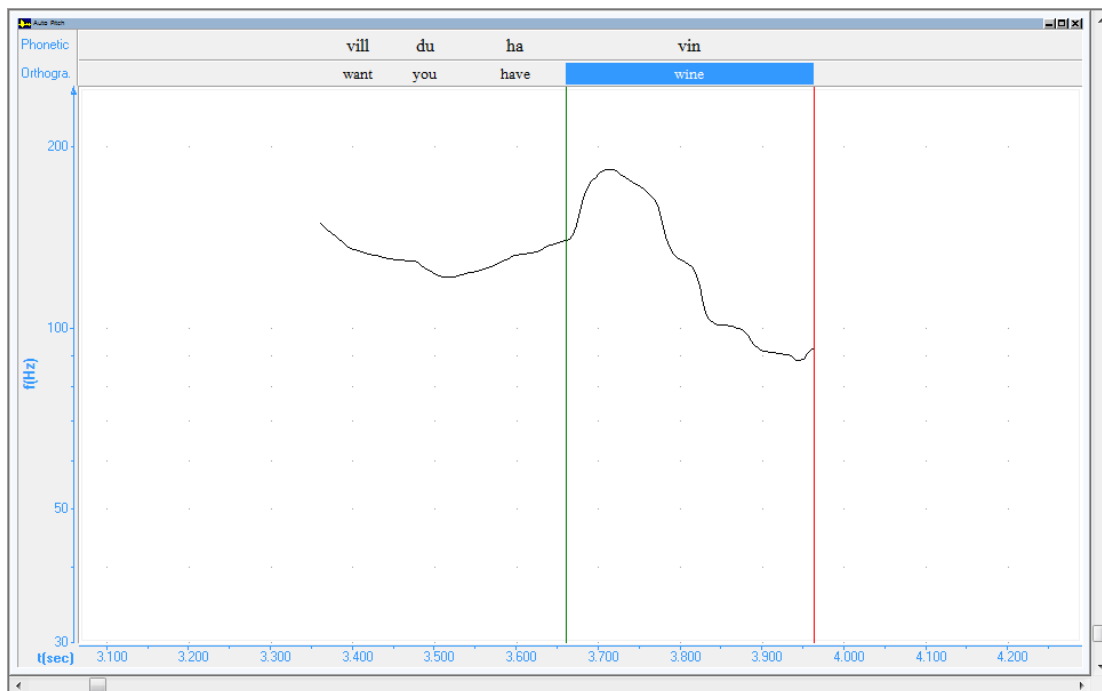


(647), an open question, does have a raised intonation on the last stressed syllable, but the final pitch is a fall to a point below mid, and in the open question in (648) the final fall is even lower. More importantly, the intonation is very close to that seen in the declarative statement in (646), indicating that questions do not have a particular intonation:

(647) Open question: *Do they want a piece of cake?*

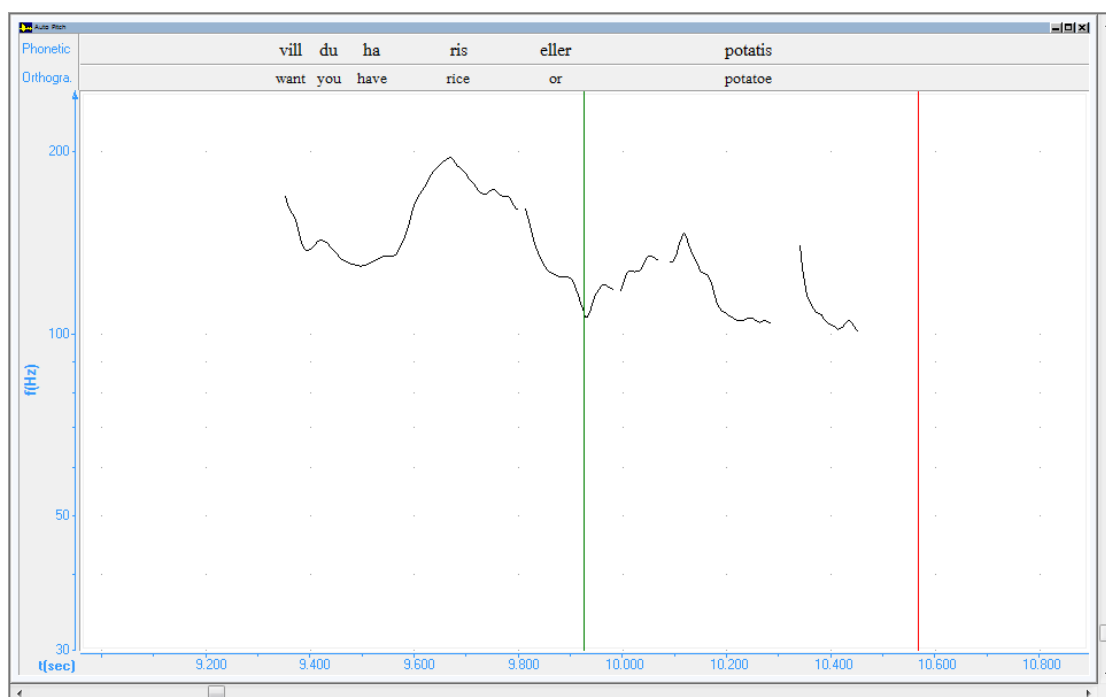


(648) Open question: *Do you want wine?*



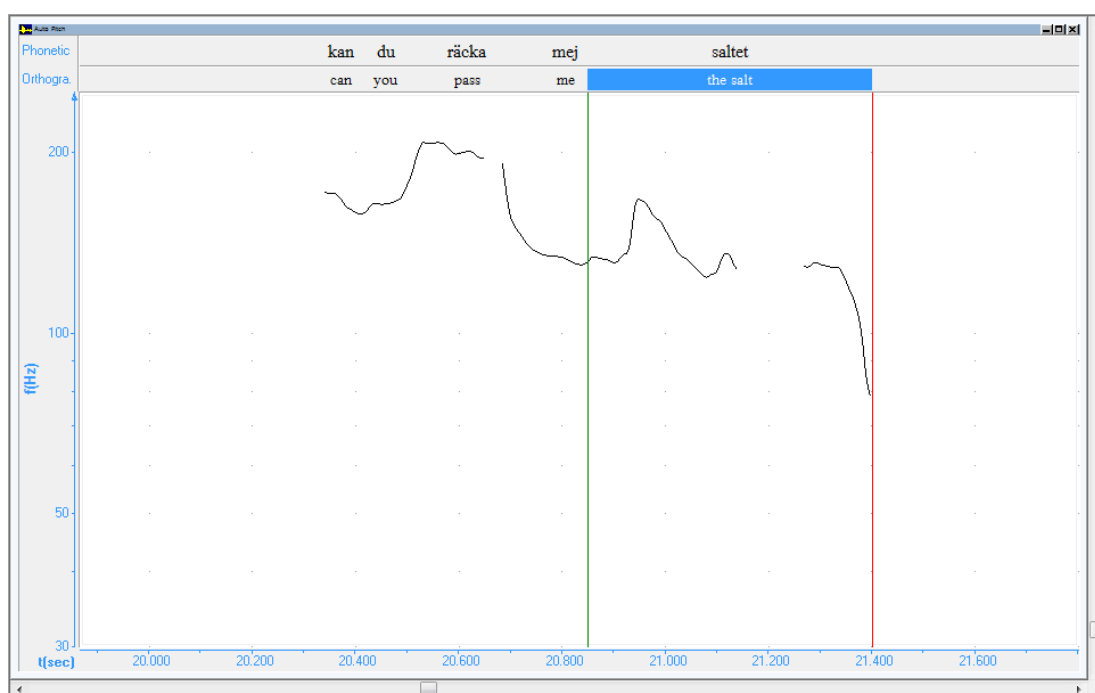
(649) illustrates what seems to be a general pattern for alternative questions: there is a rise on the first alternative, and a final fall on the last:

(649) Alternative question: *Do you want rice or potatoes?*



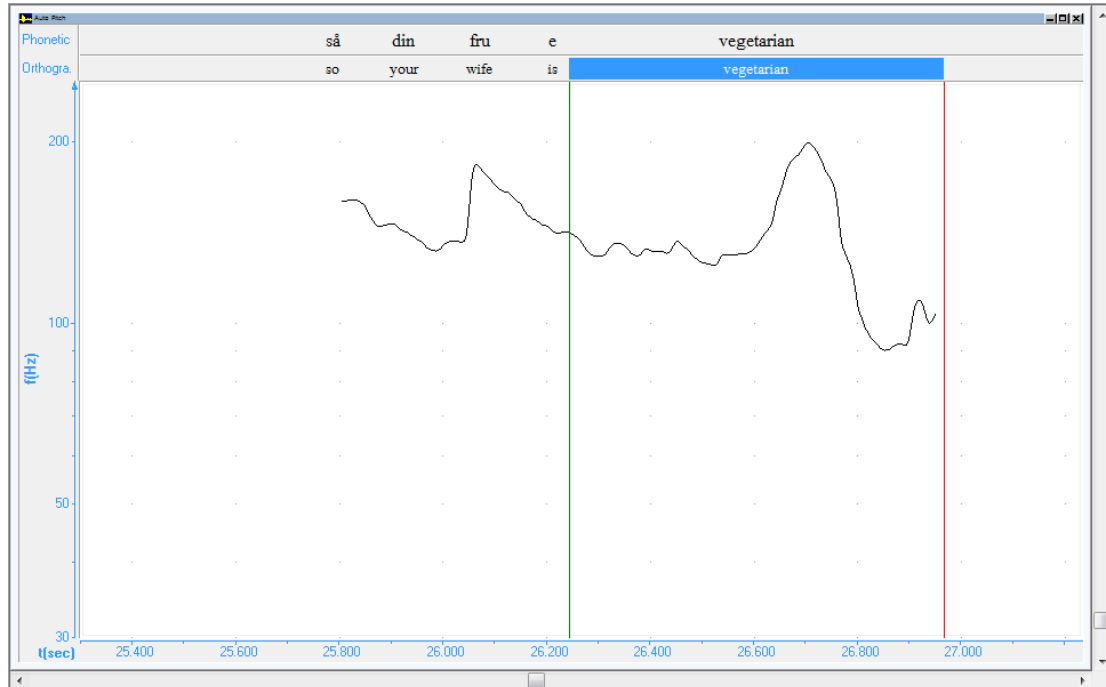
(650) illustrates a final fall for a request in the form of a question:

(650) Request: *Can you pass me the salt?*



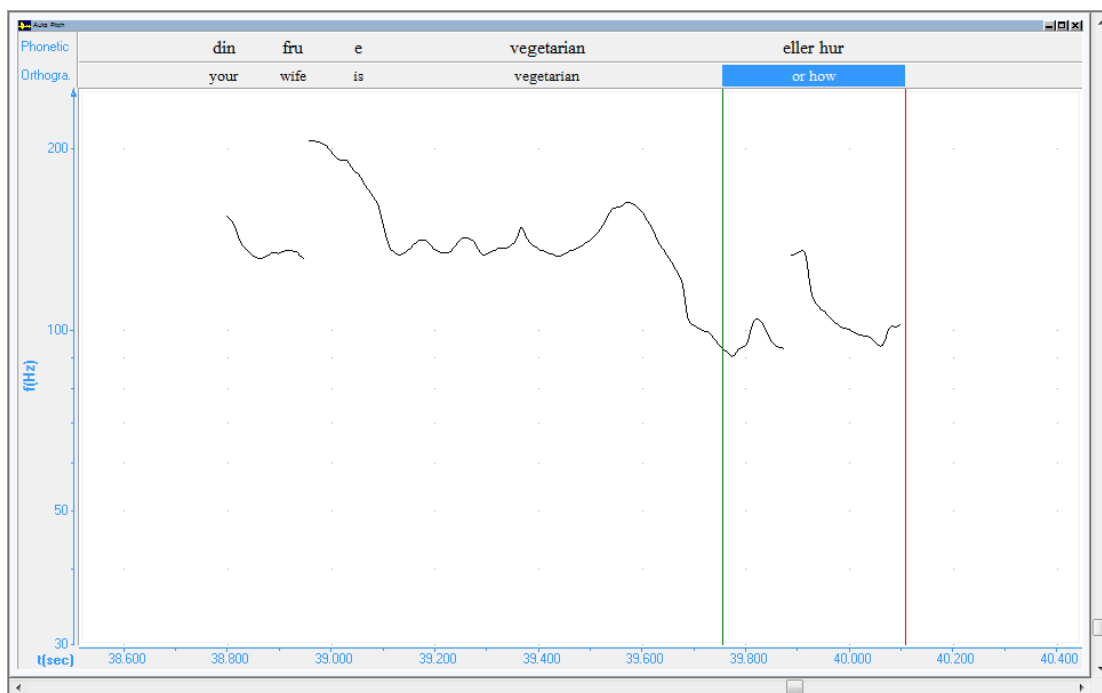
The confirmation question without a tag *So your wife is a vegetarian?* in (651) shows a similar pattern to the other questions, with a final fall:

(651) Confirmation question without tag: *So your wife is a vegetarian?*

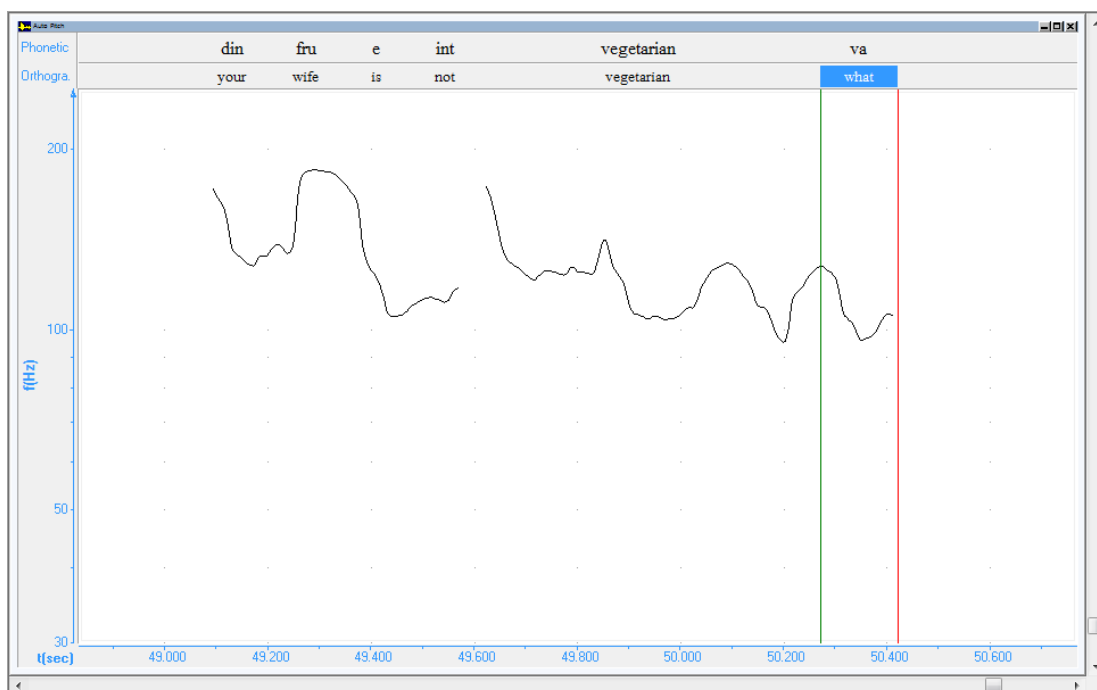


The same is true even when a tag is used, both in an affirmative question (652) and a negative question (653):

(652) Confirmation question with tag: *Your wife is a vegetarian, isn't she?*

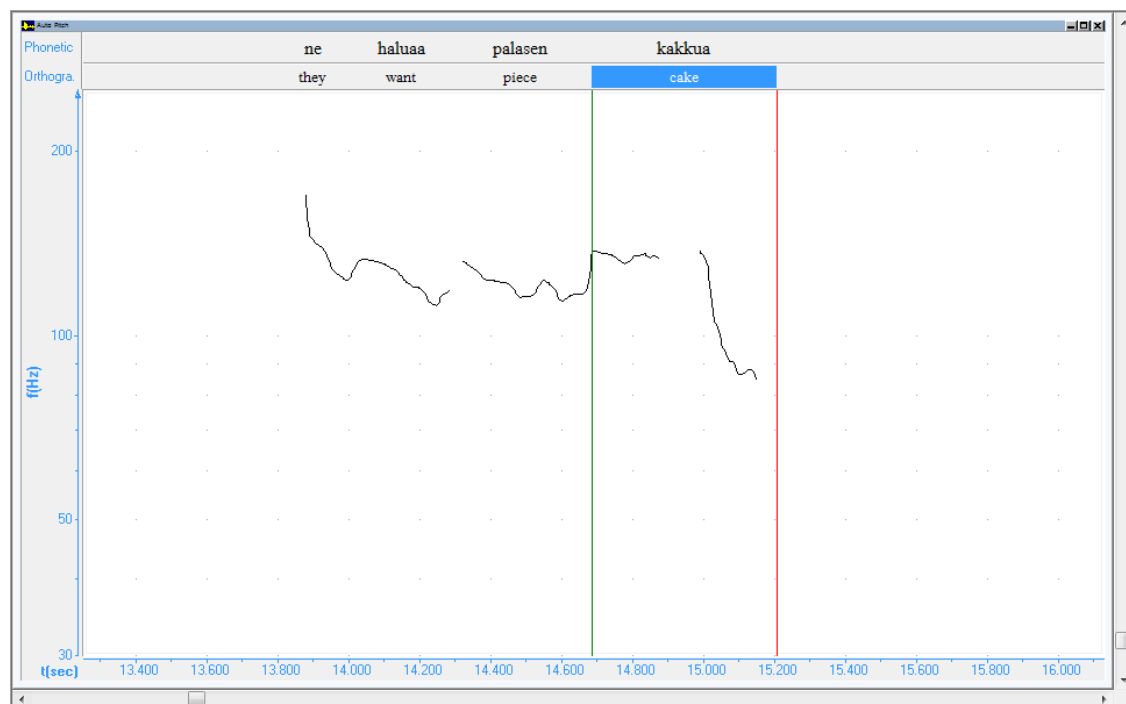


(653) Negative confirmation question with tag: *Your wife isn't a vegetarian, is she?*



The graphs in (654)–(661) show the same for Finnish, which uses a question particle *ko* to form questions: all question types have a final falling pitch. Again, the alternative question shows the same rise on the initial alternative and fall on the second. (659), the confirmation question without a tag, *(So), your wife is a vegetarian*, has no question particle and exhibits declarative word order. However, the intonation is falling, as in a statement and as in most English declarative questions. It is a question through pragmatic inference, rather than through the encoding of illocutionary force.

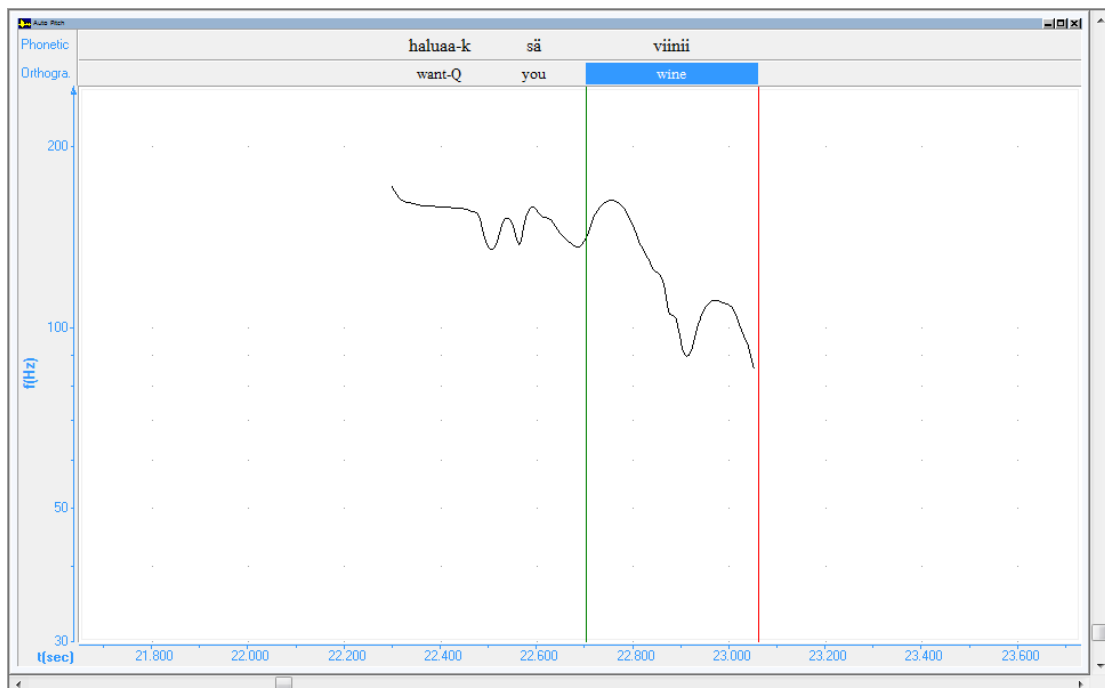
(654) Statement. *They want a piece of cake.*



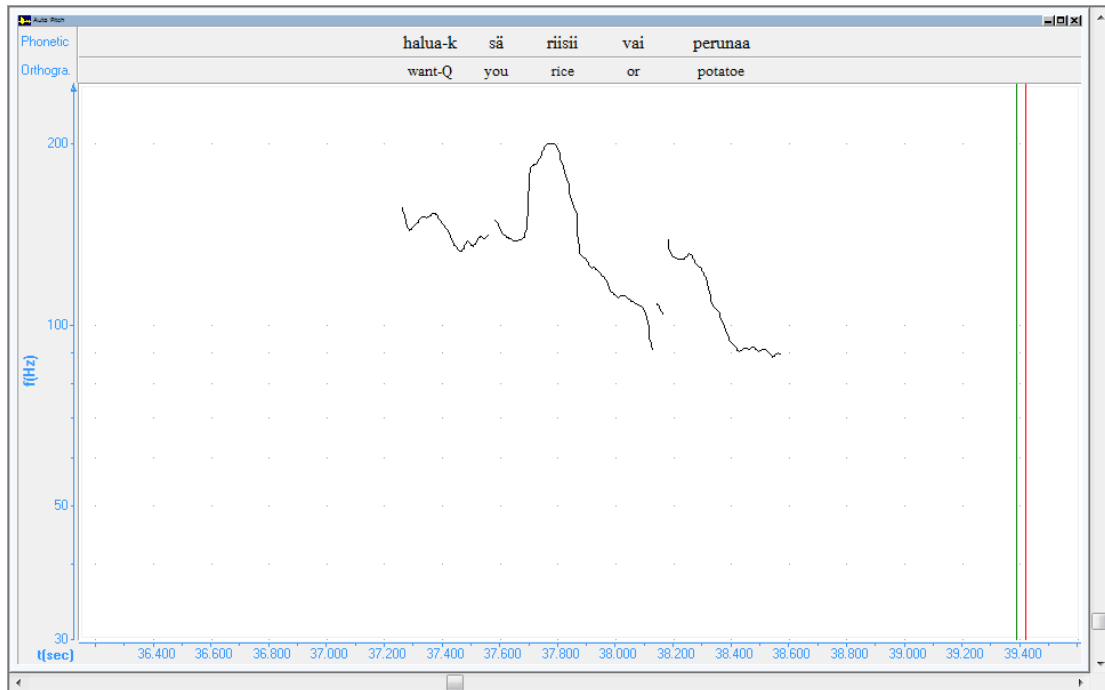
(655) Open question: *Do they want a piece of cake?*



(656) Open question: *Do you want wine?*



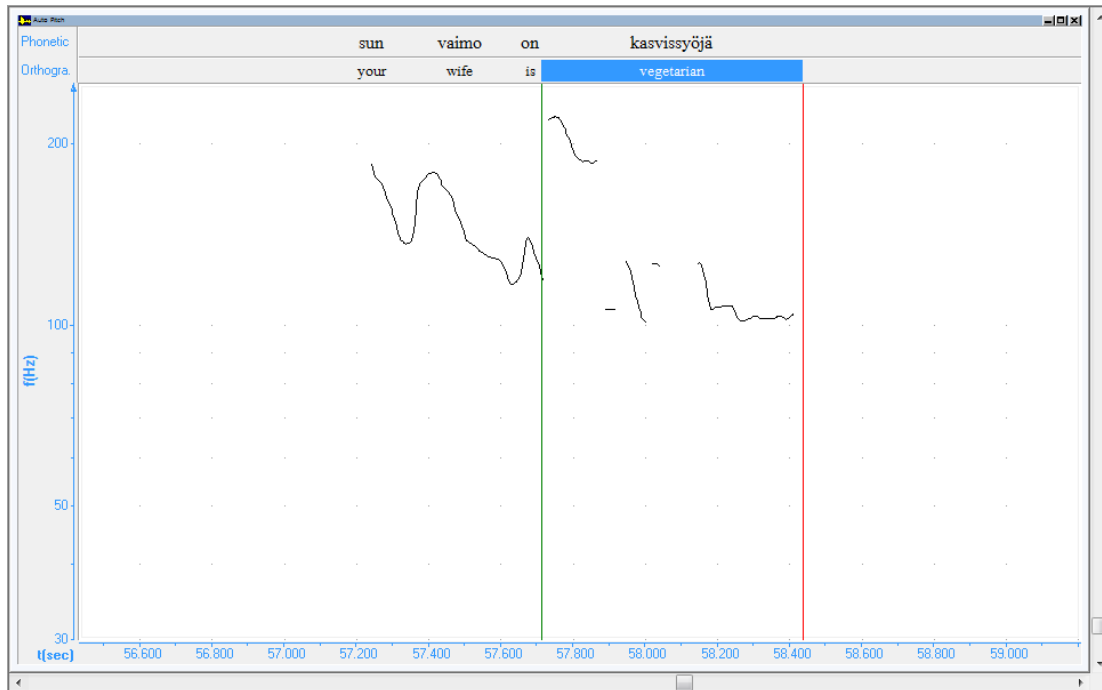
(657) Alternative question: *Do you want rice or potatoes?*



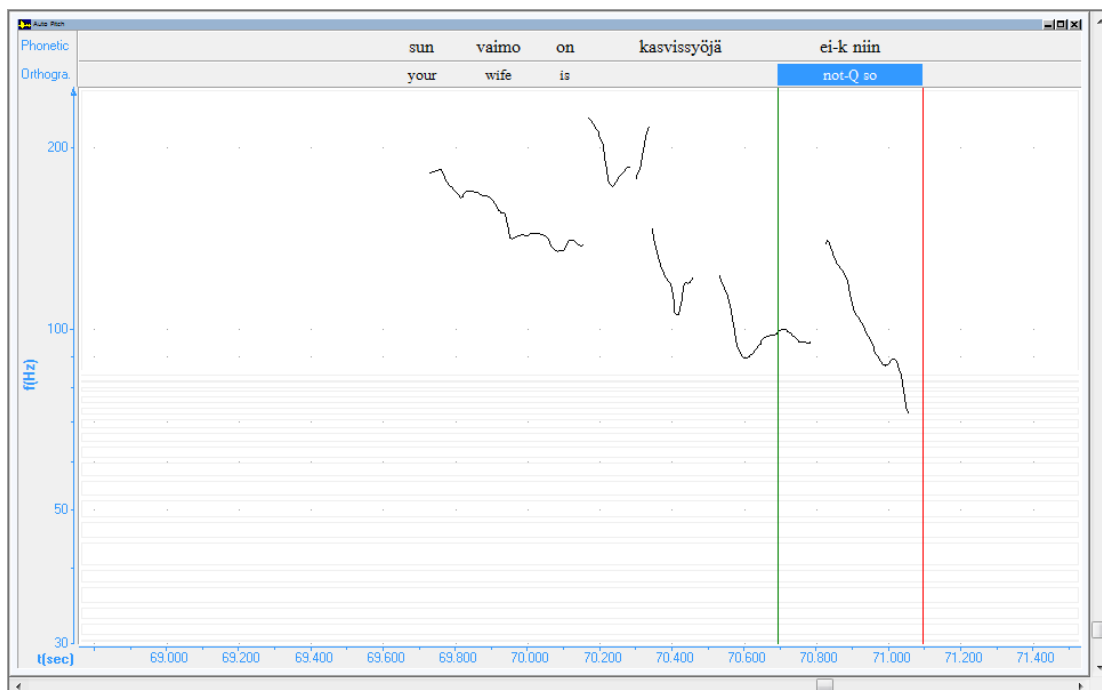
(658) Request: *Can you pass the salt?*



(659) Confirmation question without tag: *(So) your wife is a vegetarian?*



(660) Confirmation question with tag: *Your wife is a vegetarian, isn't she?*



(661) Negative confirmation question (the tag is not required or very natural in Finnish): *Your wife isn't a vegetarian, is she?*



The fact that there is no question intonation in Swedish and Finnish makes it predictable that IQs should not be allowed in any of the question types, and this is indeed the case, with the exception of (659) discussed above, which is parallel to the English equivalent. Swedish and Finnish always require verb-fronting (Swedish) or a particle (Finnish). In English, Swedish, and Finnish, therefore, intonation encodes neither question force nor open polarity.

French and Portuguese

Unlike English, Swedish and Finnish, French and Portuguese both allow IQs (the minimal-pair declarative statements are provided for comparison):

(662) Tu veux un café? [French]
 you want a coffee
 'Do you want a coffee?'

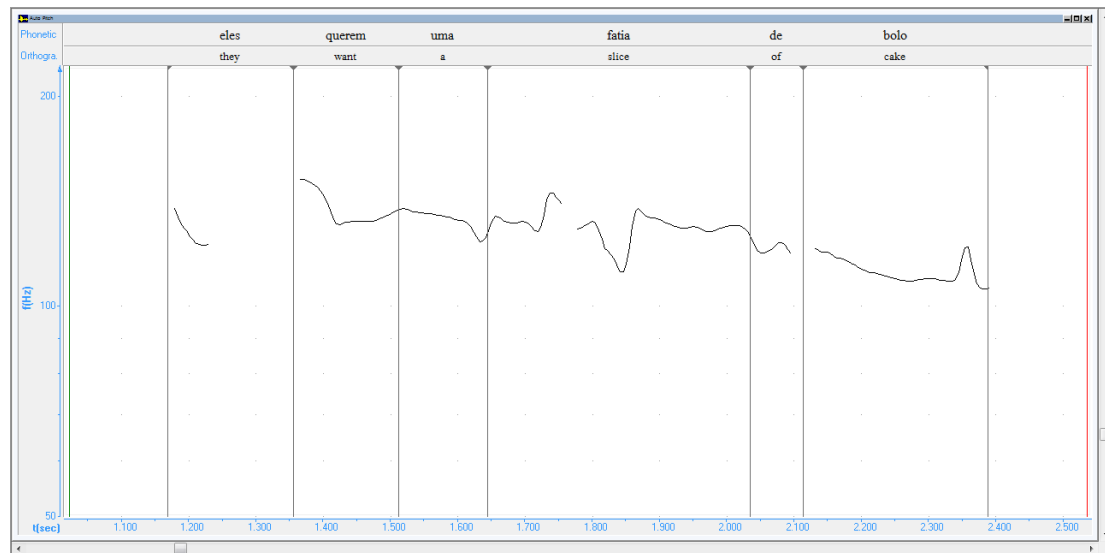
(663) Tu veux un café.
 you want a coffee
 'You want a coffee.'

(664) Eles querem uma fatia de bolo? [Portuguese]
 they want a slice of cake
 'Do they want a slice of cake?'

(665) Eles querem uma fatia de bolo.
 they want a slice of cake
 'They want a slice of cake.'

Furthermore, both of these languages have the 'rising intonation' assumed to signify a question, as the graphs of the minimal pair *They want a slice of cake* (statement with falling intonation) and *Do they want a piece of cake* (question with rising intonation) show:⁷⁵

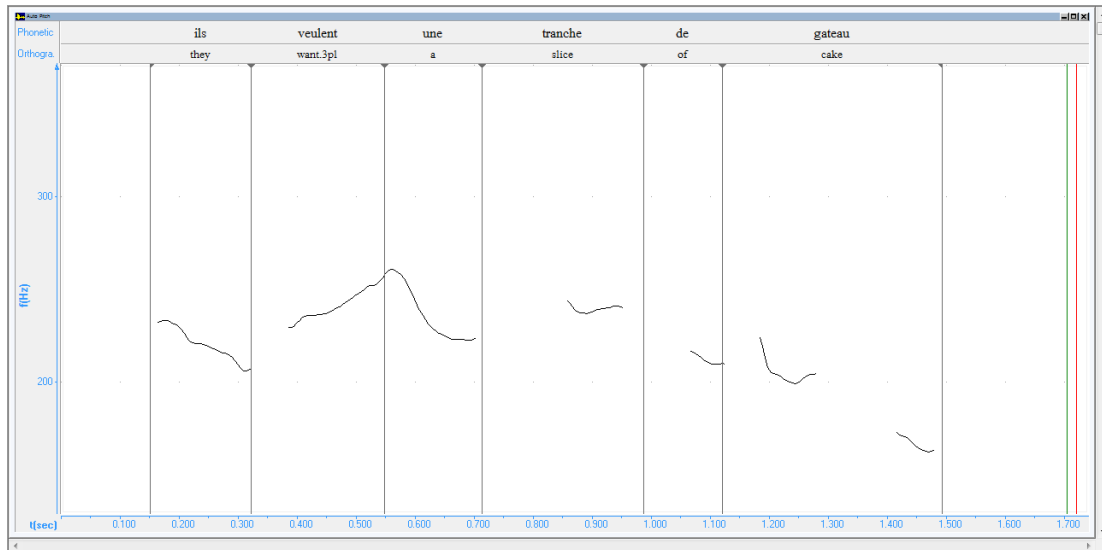
(666) Statement: *They want a slice of cake.* [Portuguese]



⁷⁵ The graphs of Portuguese and French intonation are kindly provided by Michelle Sheehan (p.c.), from recordings by José Cruz da Ângela and Caroline Cordier respectively.

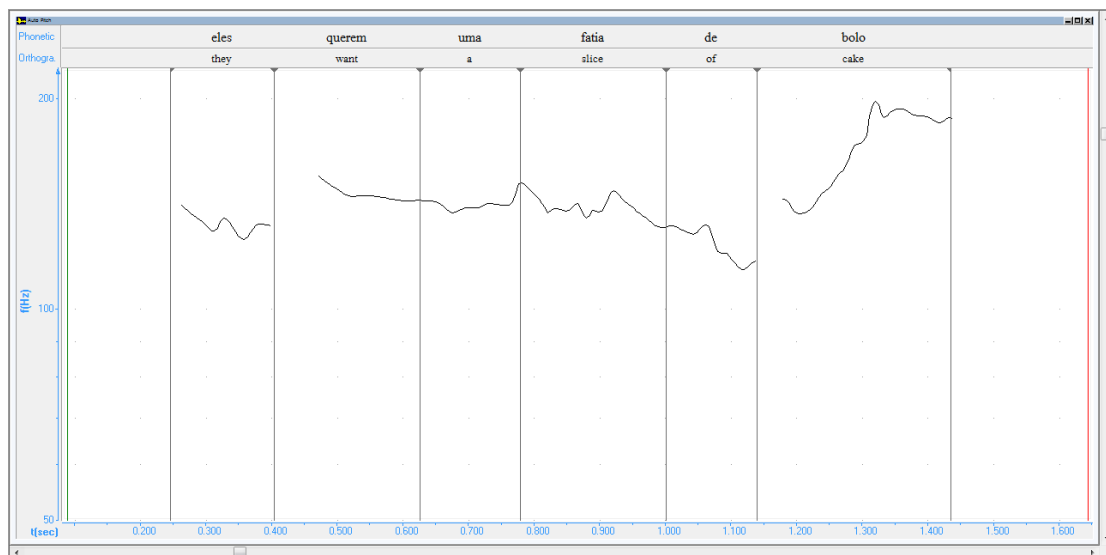
(667) Statement: *They want a slice of cake.*

[French]



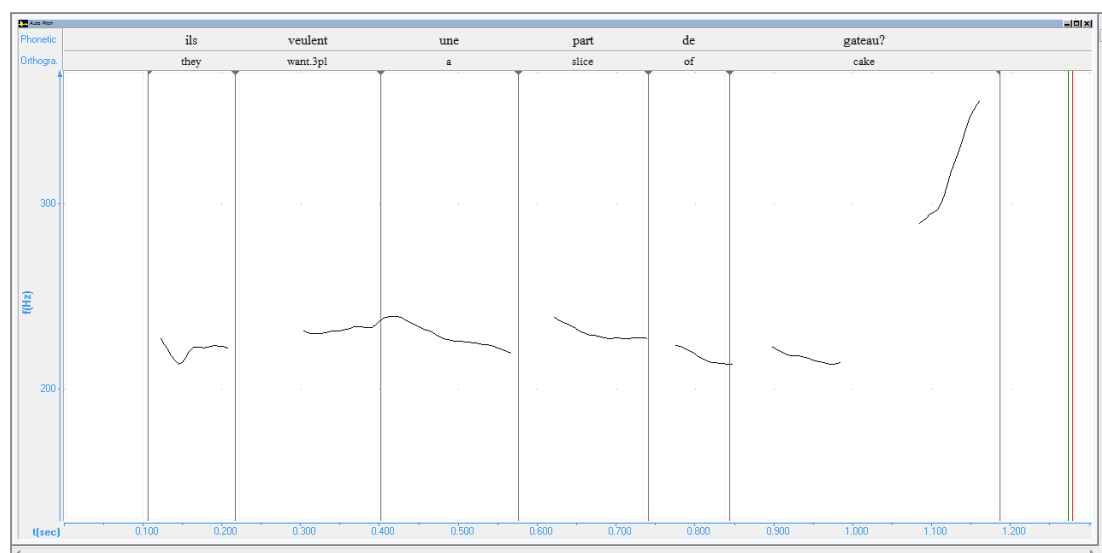
(668) Question: *Do they want a slice of cake?*

[Portuguese]



(669) Question: *Do they want a slice of cake?*

[French]



This intonation pattern is consistent with that noted in the literature. Cruz-Ferreira (1998), for instance, states that European Portuguese has ‘low-rising tone’ (i.e. a rise from low to high) in polar questions, and statements have a low falling tone. Di Cristo (1998) similarly notes that French statements have a rise-fall intonation, and questions a final rise. However, in Portuguese, IQs are the only way to mark a question, whereas French, as noted, also has word order and a question particle as alternative devices:

(670) Veux-tu un café?
want-you a coffee?
‘Do you want a coffee?’

(671) Est-ce que tu veux un café?
Q you want a coffee
‘Do you want a coffee?’

It is expected that Portuguese IQs, as the standard way to mark questions, license an NPI, and this is what we find:

(672) O teu irmão tem a menor ideia?
the your brother has the slightest idea
‘Does your brother have the slightest idea?’

French IQs do not:

(673) *Ton frère a la moindre idée?
your brother has the slightest idea

This fact indicates that while Portuguese IQs have open polarity, French IQs do not. To license an NPI in French, it is necessary to use one of the other two question-marking strategies. This is corroborated by the fact that an IQ in French cannot be used for open questions; it is used when the speaker knows or has some expectation of the answer, such as alternative questions and requests:

(674) Tu veux du vin ou de la bière?
you want some wine or some beer
'Do you want wine or beer?' (Di Cristo 1998: 202)

(675) Tu peux me passer le sel?
you can me pass the salt
'Can you pass me the salt?' (Caroline Cordier, p.c.)

While the Portuguese question in (668) above can be used in neutral contexts and is a true open question, the French equivalent in (669) is biased. A further indication that IQs in French can only be used in questions which lack open polarity is that the polarity particle *oui ou non* can appear in polar questions, as in (676)–(677), but cannot appear in IQs (678)–(679) (Authier to appear: 33):

(676) Est-ce que *oui ou non* tu as sorti les poubelles?
Q yes or no you have taken.out the garbage
'Did you (or did you not) take out the garbage?'

(677) Est-ce que tu as *oui ou non* sorti les poubelles?
Q you have yes or no taken.out the garbage
'Did you (or did you not) take out the garbage?'

(678) **Oui ou non* tu as sorti les poubelles?
yes or no you have taken.out the garbage

(679) *Tu as *oui ou non* sorti les poubelles?
you have yes or no taken.out the garbage

The reason Authier suggests for this asymmetry is that the particle *oui ou non* cancels any bias in the question and makes it neutral. He gives the examples in (680)–(681) to illustrate:

(680) Le skipper aimerait savoir si vous avez le mal de mer.
the captain would.like to.know if you have the seasickness
'The captain would like to know if you get seasick.'

(681) Le skipper aimerait savoir si vous avez *oui ou non* le
the captain would.like to.know if you have yes or no the
mal de mer.
seasickness
'The captain would like to know if you do or don't get seasick.'
(Authier to appear: 36, glosses mine)

The difference between the two examples in (680)–(681) is exactly comparable to the difference between English embedded questions introduced by *if* and *whether*. Attributing the observation to Bolinger (1978) and discussion to Eckhardt (2006), Authier notes that in (682), the captain would like to know either way; he or she wants to know who among the passengers does get seasick and who does not. In (683), he or she is only really interested in those who do get seasick; the others are not so important and nothing needs to be done in their regard, while the ill passengers will need sickbags, or possibly to be discounted as suspects in Poirot's murder investigation as they were confined to their cabins at the crucial moment.

(682) The captain needs to know your name and whether you get seasick.

(683) The captain needs to know your name and if you get seasick.
(Eckhardt 2006)

If biases the question towards an interest in, or relevance of, P rather than \neg P. Similarly, in the French examples, without *oui ou non* the question is biased towards the relevance of P, while with the particle it is strictly neutral, like the *whether* question. For this reason, *oui ou non* cannot be used in negative

questions (which are biased), as shown in (684), and is odd used in a question like (685), where the implication is as in the English gloss: the questioner is not expecting or hoping for the answer *yes*, as she would be if she uttered the same question without *oui ou non*.

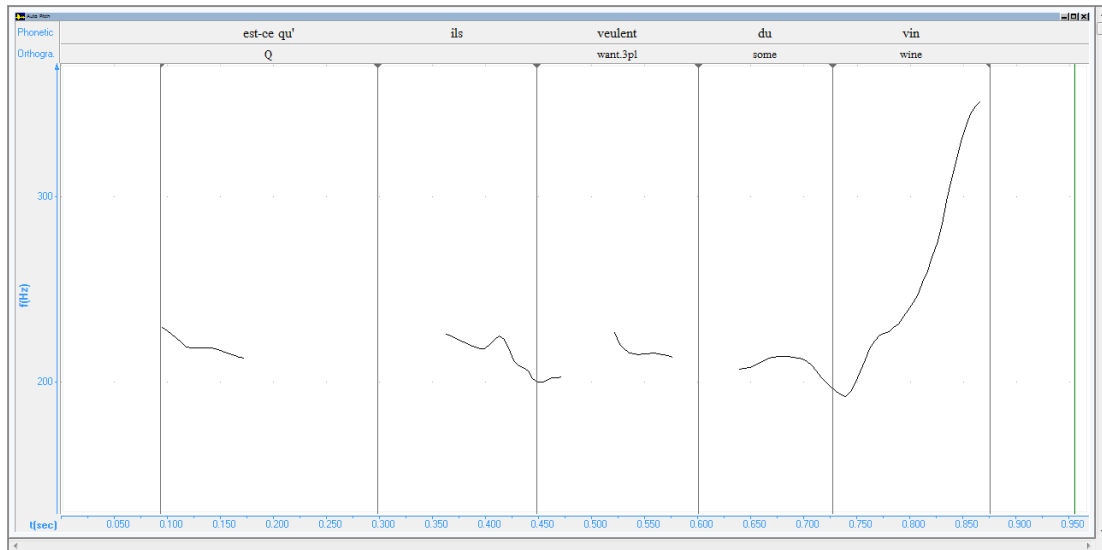
(684) Est-ce que (*oui ou non) Caroline n'a pas acheté ses
 Q (yes or no) Caroline NEG-has not bought his
 chevaux?
 horses
 'Didn't Caroline buy his horses?'

(685) Est-ce que oui ou non tu m'aimes?
 Q yes or no you me-love
 'Do you love me, yes or no?'

(Authier to appear: 37)

It is clear that *oui ou non* can, by default, only appear in neutral questions: its presence serves to neutralise an otherwise biased question, or in other words to give it open polarity. This fact, coupled with the particle's impermissibility in IQs, adds strong weight to the claim that IQs are biased and do not have open polarity. Their specified polarity makes them incompatible with the open polarity that *oui ou non* encodes. Intonation in French questions therefore does not encode [\pm Pol], and open questions require some other mechanism (in conjunction with rising intonation) to encode open polarity. Open questions with *est-ce que*, however, do still include rising intonation:

(686) Open question with question marker: *Do they want wine?* [French]

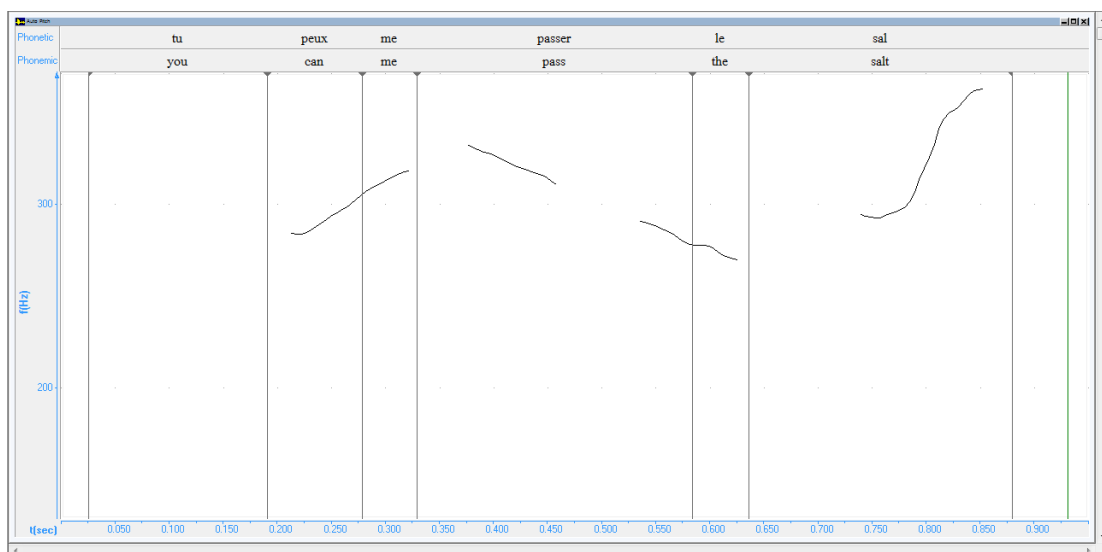


The fact that there is rising intonation in syntactically-marked open questions suggests that it might encode question force, and this appears to be true.

According to Figure 4, IQs that encode only [+Q] should be used for alternative and confirmation questions and requests, and this is the case for French.

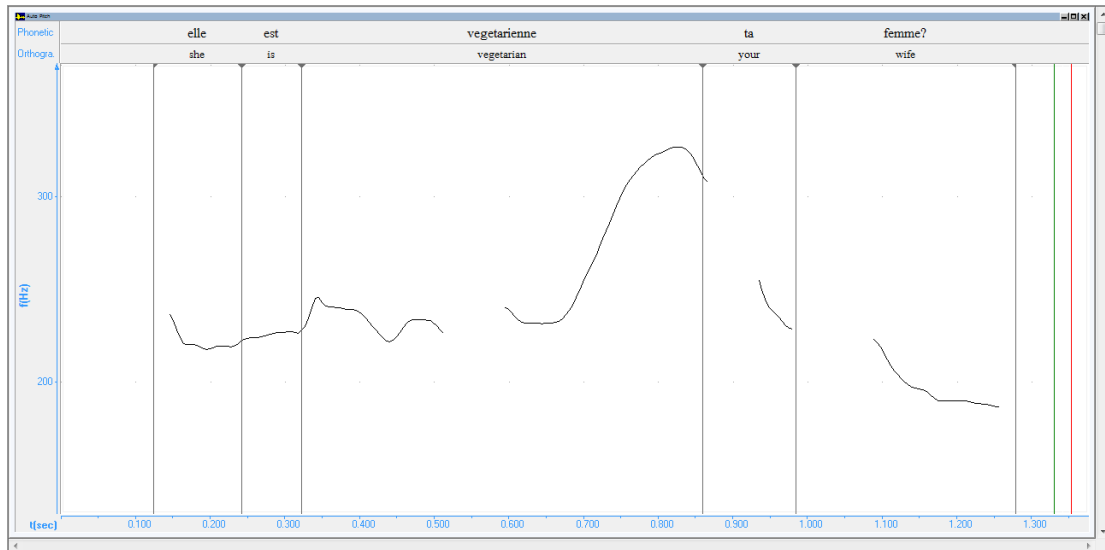
Requests include a final rise:

(687) Request: *Can you pass me the salt?* [French]

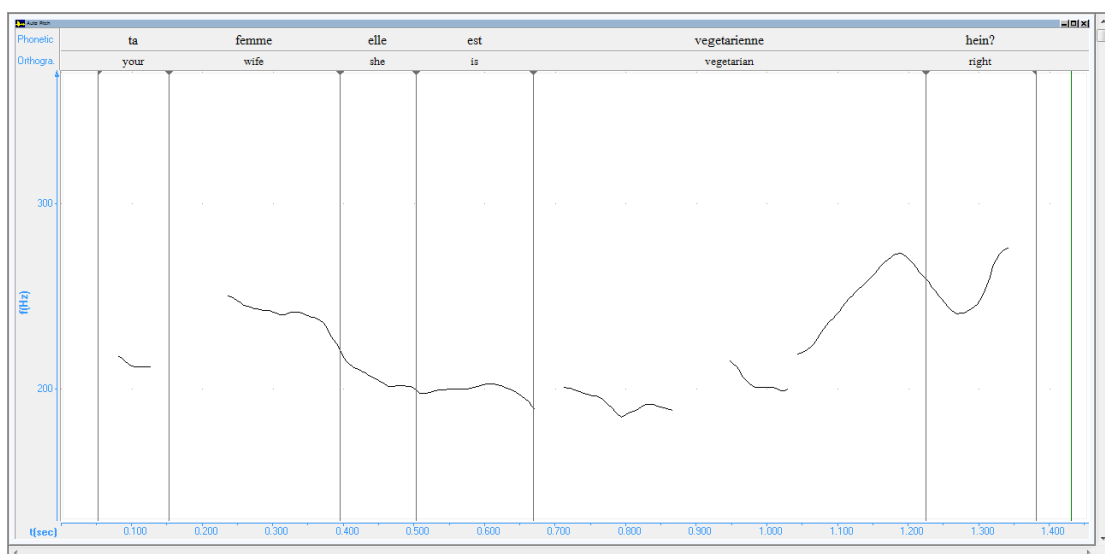


(688) shows a confirmation question without a tag, which has a final fall at the end of the utterance but a final rise at the end of the predicate. (689) shows a confirmation question with the tag *hein* and a final rise, both at the end of the predicate and on the tag itself:

(688) Confirmation question, no tag: *Your wife is vegetarian (isn't she)?* [French]



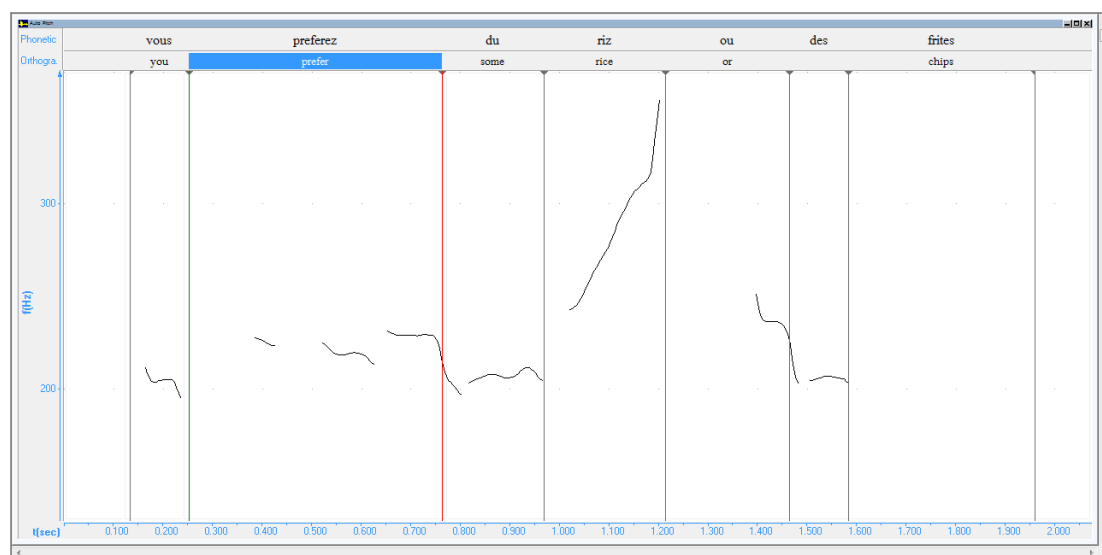
(689) Confirmation question with tag: *Your wife is vegetarian, isn't she?* [French]



Alternative questions show the (by now familiar) pattern of rise on the first alternative and fall on the second:

(690) Alternative question: *Do you want rice or potatoes/chips?*

[French]

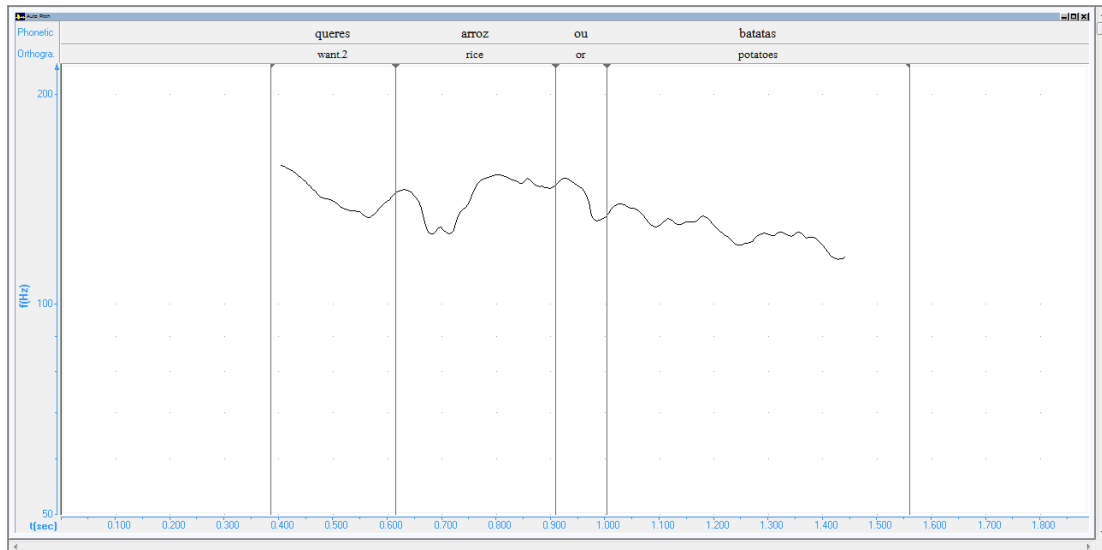


If the intonation encodes [+Q], it should not occur in those questions that do not have the illocutionary force of a question, namely embedded and speculative questions. This appears to be true, with such questions having rather a fall or rise-fall (Caroline Cordier, p.c.).⁷⁶

In Portuguese, we have established that IQs have open polarity. They also encode question force, as these two features are present in open questions and IQs are used for open questions. Because rising intonation encodes both of these features, it is not used when only one is present, and therefore is not present on any other question type. Alternative questions show a slight rise and fall, but lower than for other languages examined in this chapter:

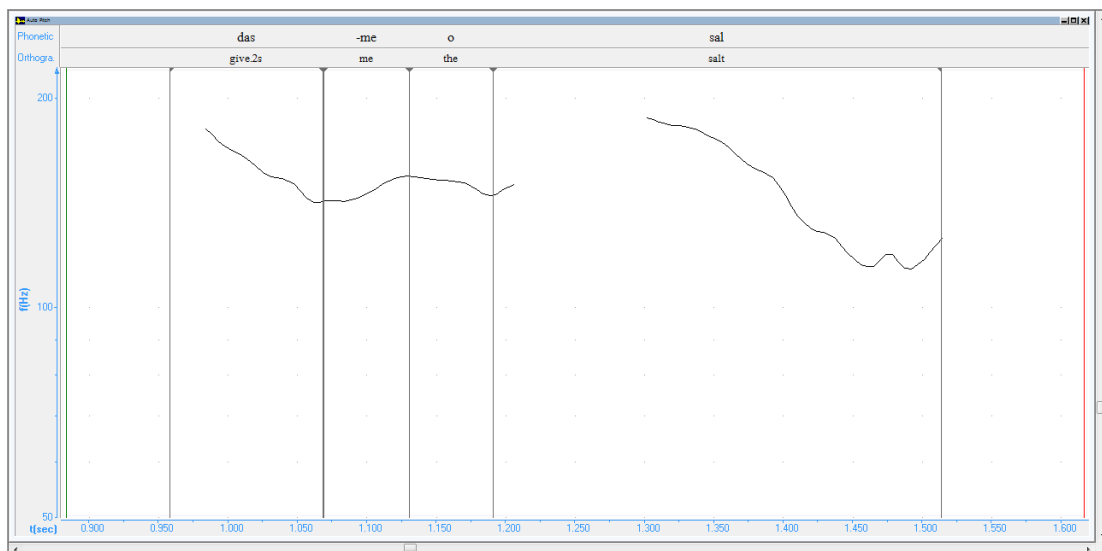
⁷⁶ I was unable to obtain graphs to show this intonation, so this is based on native speaker intuition and should be checked.

(691) Alternative question: *Do you want rice or potatoes/chips?* [Portuguese]



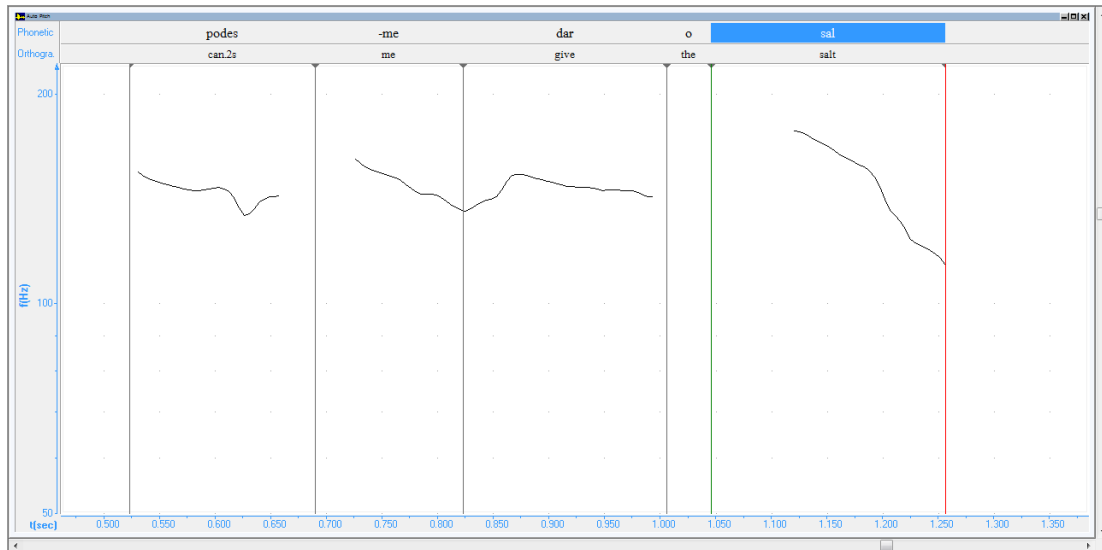
(692)–(696) show requests with and without a modal verb, and positive and negative confirmation questions both with and without tags, all with falling final intonation:

(692) Request: *Will you pass me the salt?* [Portuguese]



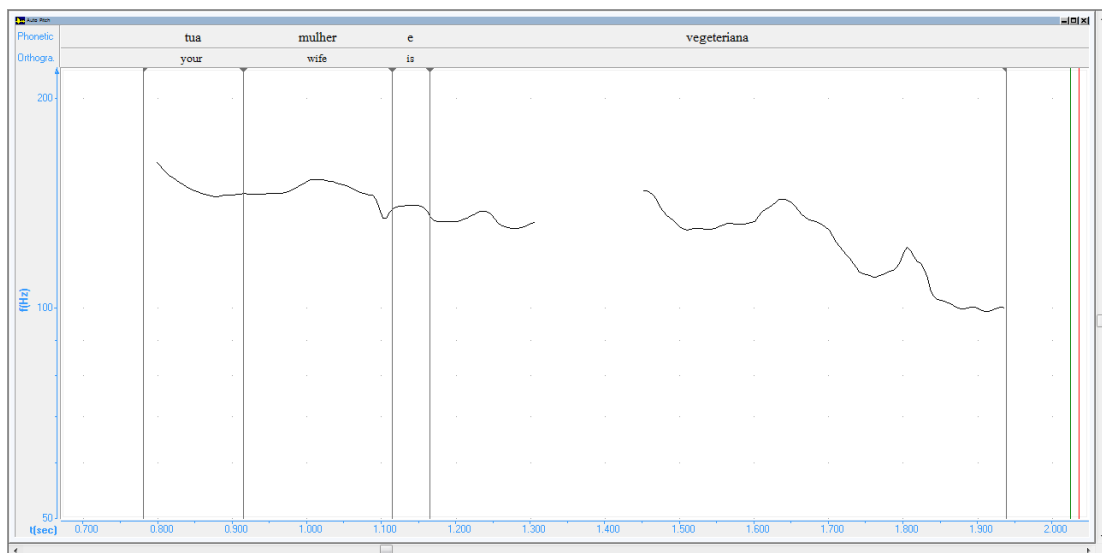
(693) Request with modal: *Can you pass me the salt?*

[Portuguese]

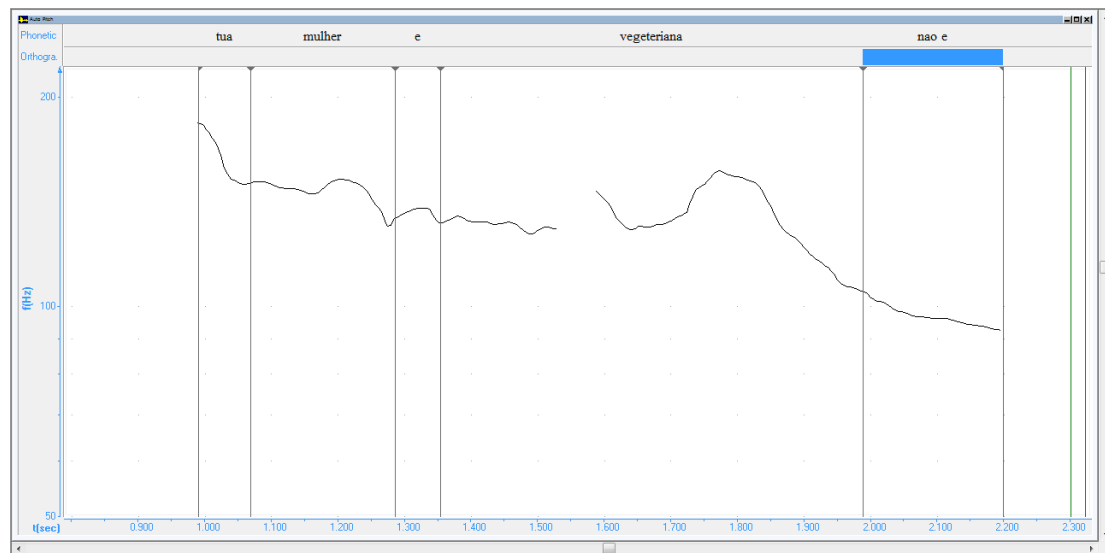


(694) Confirmation question, no tag: *Your wife is vegetarian?*

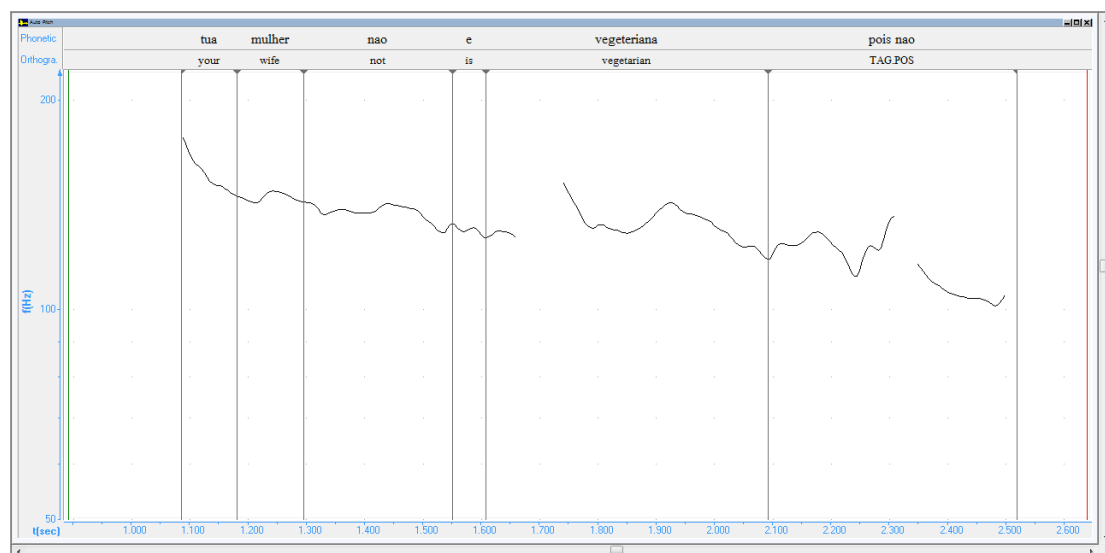
[Portuguese]



(695) Confirmation question, tag: *Your wife is vegetarian, isn't she?* [Portuguese]



(696) Negative confirmation: *Your wife isn't vegetarian, is she?* [Portuguese]



The lack of IQs in questions other than open polar questions in Portuguese is due to rising intonation encoding both question force and open polarity. If either is not present, rising intonation is not felicitous as it confers a syntactic feature that is not consistent with the type of question. In French, on the other hand, the intonation encodes just question force and so it occurs in any question that requires an answer. This constitutes a wider set than those that both require an answer and do not expect a particular answer (i.e. just open questions). It might

be expected that there is another type of language, one in which intonation encodes both question force and open polarity, but does so independently – in effect, there are two rising intonations, one for each feature. In this case, rising intonation should license NPIs and occur in all question types, as long as they have either question force or open polarity (i.e. are not declarative statements). It might further be the case that the two intonation patterns are different, and that a different intonation occurs in those questions with open polarity but not question force, and vice versa. However, this requires further investigation.

We therefore have a contrast between Portuguese and French, with intonation encoding [+Q] in French and not [\pm Pol], but encoding both [+Q] and [\pm Pol] in Portuguese. Both allow intonation questions but the restrictions are different in each language. This is because intonation realises different features in each.

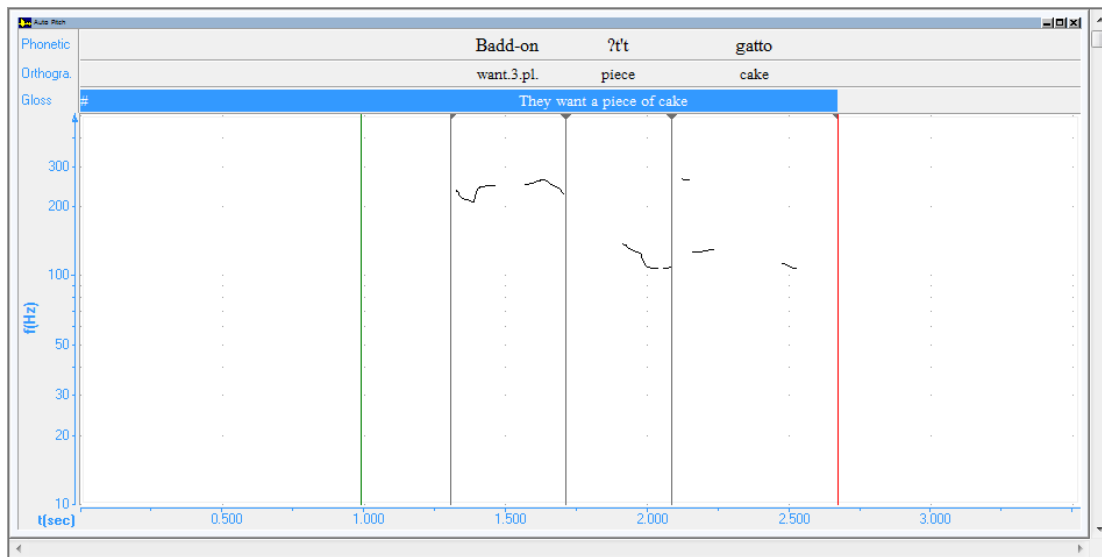
Arabic and Polish

In the previous section we noted a contrast in the way intonation is used in two Romance languages, Portuguese and French. We can extend the analysis to other languages, turning now to Syrian Arabic and Polish. Arabic is like Portuguese in having only IQs as a possible question-marking strategy, while Polish has IQs as an option as well as a sentence-initial question particle *czy*.

Arabic, having IQs as its only option in question-marking, is expected to behave like Portuguese in allowing IQs in all [+Q] question types, as there is no other way to indicate a question. Similarly, it is expected to license NPIs in IQs when the question type has open polarity. This expectation matches what we find.

A statement, as in (697), has falling intonation:

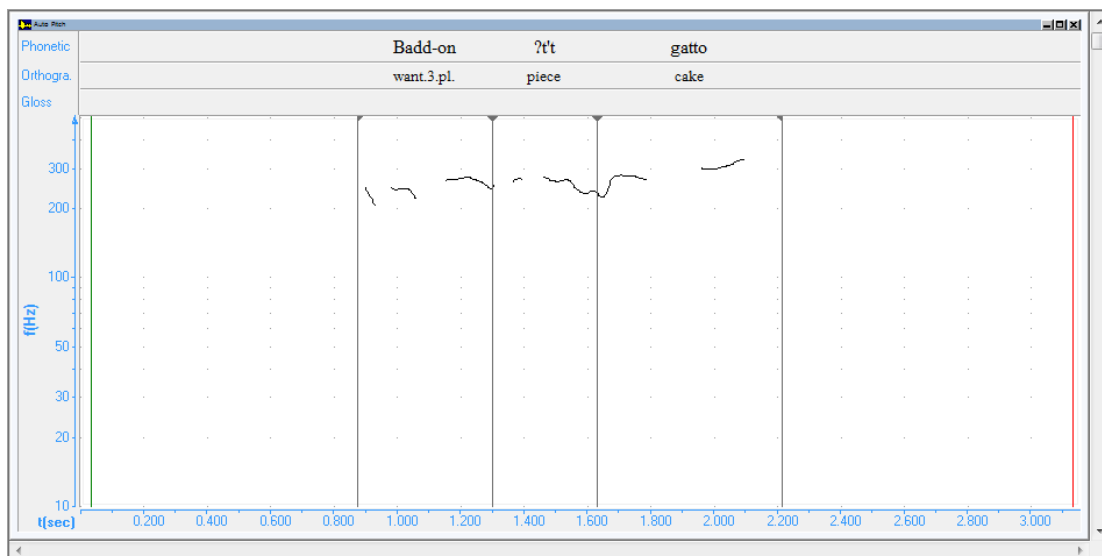
(697) badd-on ?t't gatto
 want-3.PL piece cake
 'They want a piece of cake.'



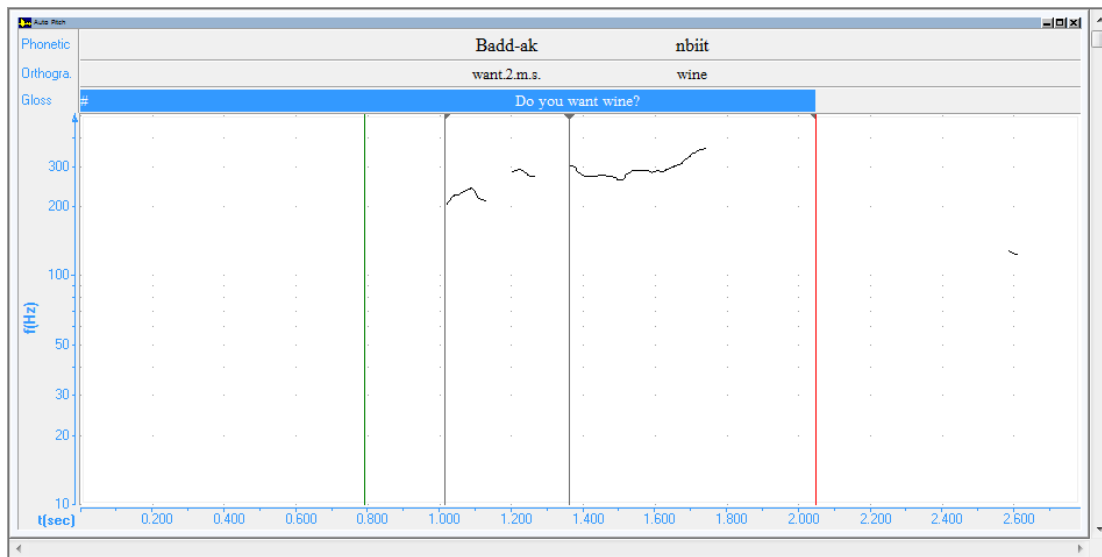
An open question has the same word order, and licenses NPIs, and has an overall higher pitch and a final rising intonation:

(698) badd-on ?t't gatto?
 want-3.PL piece cake
 'Do they want a piece of cake?'

?e/la?
 yes/no

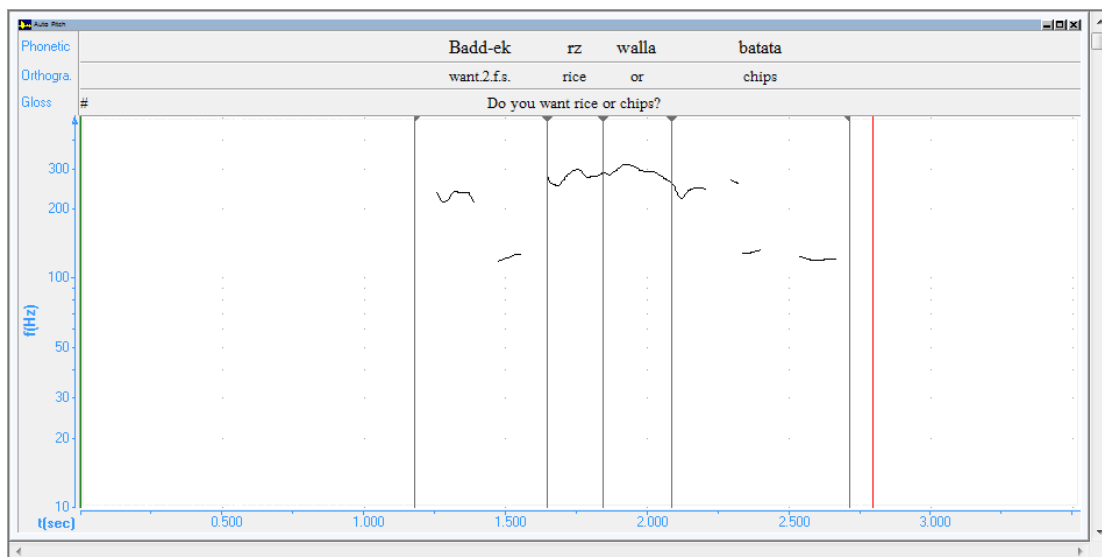


(699) badd-ak nbiit
 want-2.M.SG wine
 'Do you want wine?'



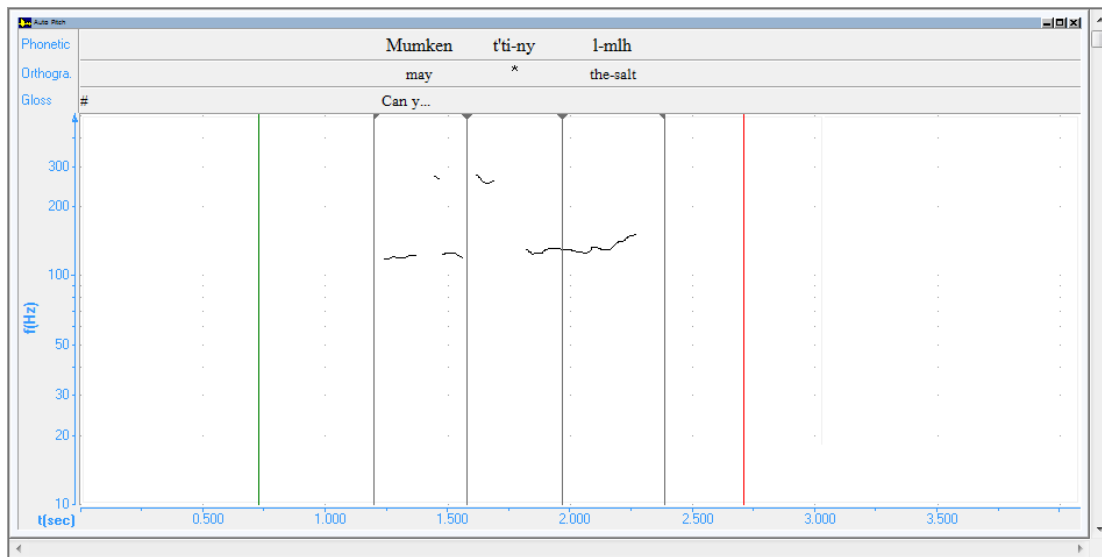
An alternative question has a slight rise on the first alternative, and a fall on the last, like the other languages investigated:

(700) badd-ek rz walla batata
 want-2.F.SG rice or chips
 'Do you want rice or chips?'



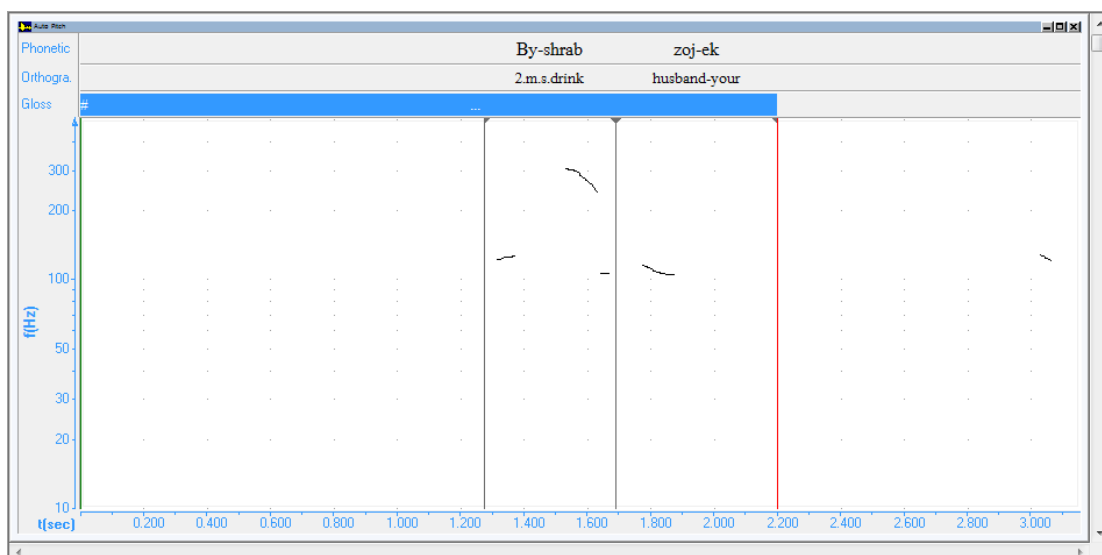
A request is lower-pitched, like the statement, and has a slight final rise:

(701) mumkn ti't-i-ni l-mlh?
 possible give-2SG-1SG the-salt
 'Could you pass me the salt please?'

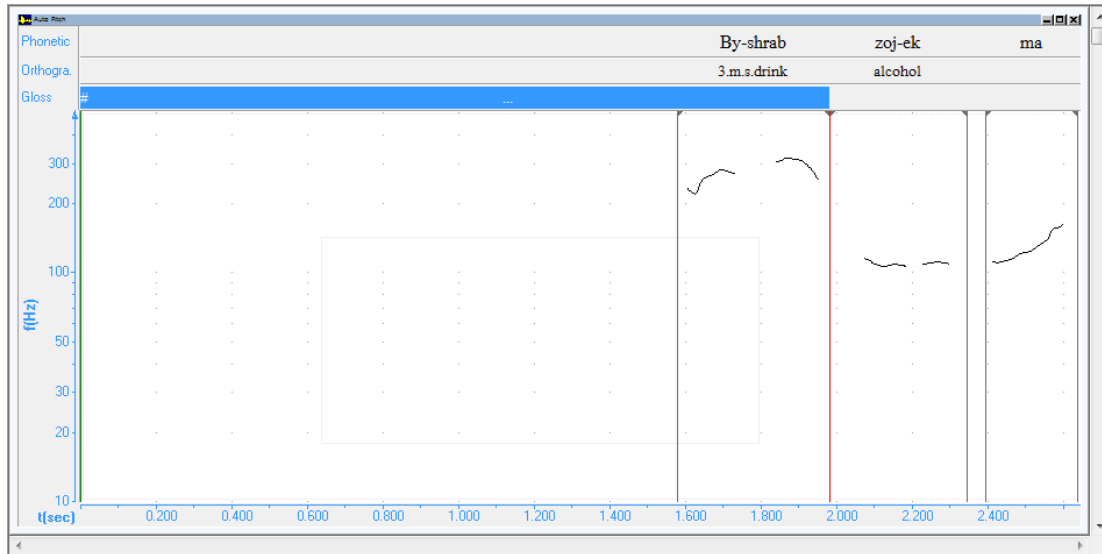


Confirmation questions have a final fall, unless they contain a tag, in which case there is a slight rise on the tag, but the overall pitch is as low as that for statements:

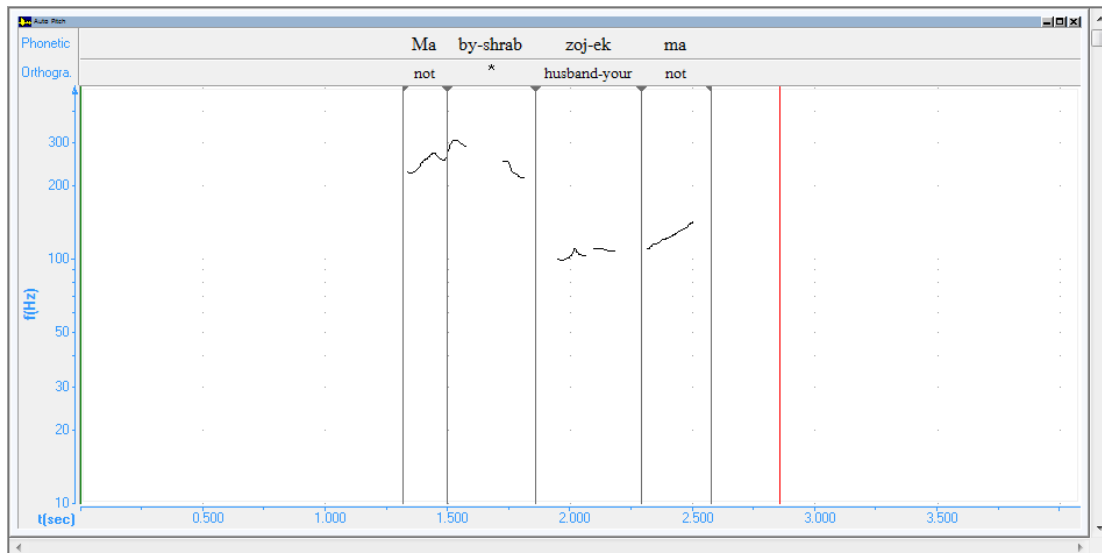
(702) by-shrab zoj-ek?
 3.M.SG-drink husband-your
 'Your husband drinks, (doesn't he)?'



(703) by-shrab zoj-ek ma
 3.M.SG-drink husband-your not
 'Your husband drinks, doesn't he?'



(704) ma by-shrab zoj-ek ma
 not 3.M.SG-drink husband-your not
 'Your husband doesn't drink, does he?'



As in Portuguese (and all of the languages investigated), embedded questions and speculative questions require an embedded predicate (but do license NPIs). An embedded question is given in (607) above, repeated here as (705), and a speculative question is in (706):

(705) ‘am isʔal iza bʔyan ayya btaʔat la-l-masraḥyieh
 INDIC ask.1SG if left any tickets to-the-play
 ‘I’m asking if they have any tickets left for the play.’

(706) yatara, Rroman kanw yshrabw ahweh shi?
 wonder.1SG Romans were drink coffee at.all
 ‘Did the Romans drink coffee at all, I wonder?’

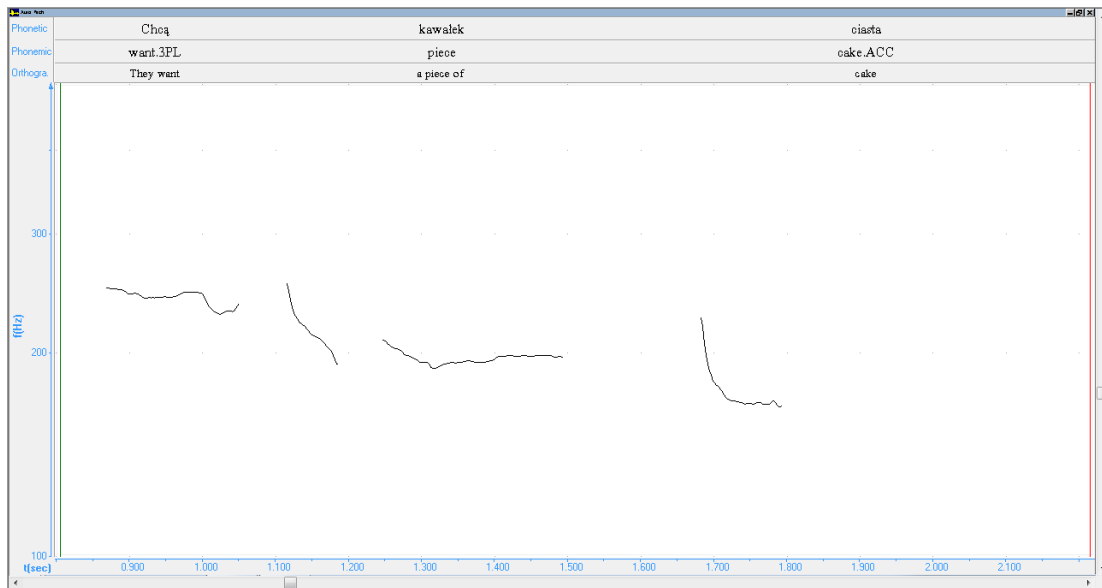
Arabic, like Portuguese, licenses NPIs in IQs, indicating that IQs in Arabic encode open polarity. Rising intonation also encodes question force, as is illustrated by the possibility of IQs in requests, alternative questions and confirmation questions. These two languages behave similarly with respect to IQs, showing that, firstly, the pattern is extended beyond Indo-European languages, and secondly that the behaviour of IQs and the syntactic elements they encode cuts across language family boundaries. However, they differ in that Arabic has a slight rise in [+Q] questions that do not have open polarity. Arabic is therefore suggested to be a language that, as postulated above, has two different ‘question intonations’ to encode the two variables.

Polish, like Portuguese and Arabic, allows IQs in open questions, alternative questions, requests, and confirmation questions. In fact, IQs are obligatory in confirmation questions, and using the particle forces an open question interpretation. Confirmation questions in Polish, like Arabic, have a special confirmation question intonation. NPIs are licensed in [±Pol] contexts.⁷⁷

A statement, as in the other languages investigated, has falling intonation:

⁷⁷ All Polish examples are provided by Małgorzata Krzek, unless otherwise indicated. Polish graphs were kindly created by Antony Tooke from recordings provided by Małgorzata Krzek.

(707) Chcą kawałek ciasta
 want.3PL piece cake.ACC
 'They want a piece of cake.'



An open question has final rising intonation:

(708) (Czy) Tomek kiedykolwiek prowadzi
 Q Tom.NOM ever drives
 'Does Tom ever drive?'

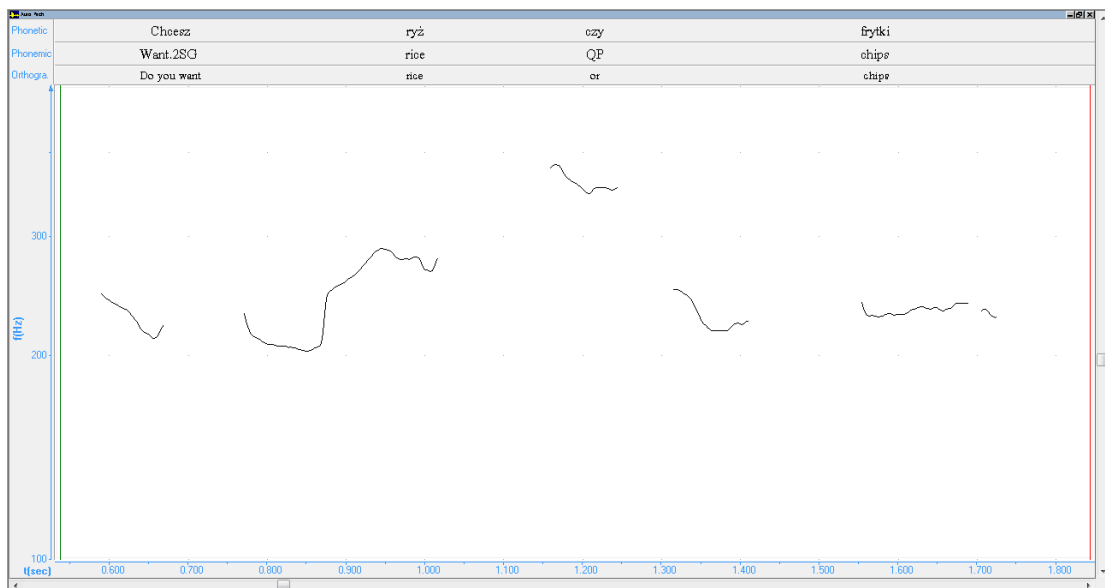
(709) Czy chcesz wino?⁷⁸
 Q want.2SG wine
 'Do you want wine?'

⁷⁸ Although the example shown in the pitch graph contains the question particle, the intonation also has final rising intonation when the particle is absent (Małgorzata Krzek, p.c.).



Alternative questions have the usual rise on the first alternative and fall on the second:

(710) Chcesz ryż czy⁷⁹ frytki?
 want.2SG rice or chips
 'Would you prefer rice or chips?'

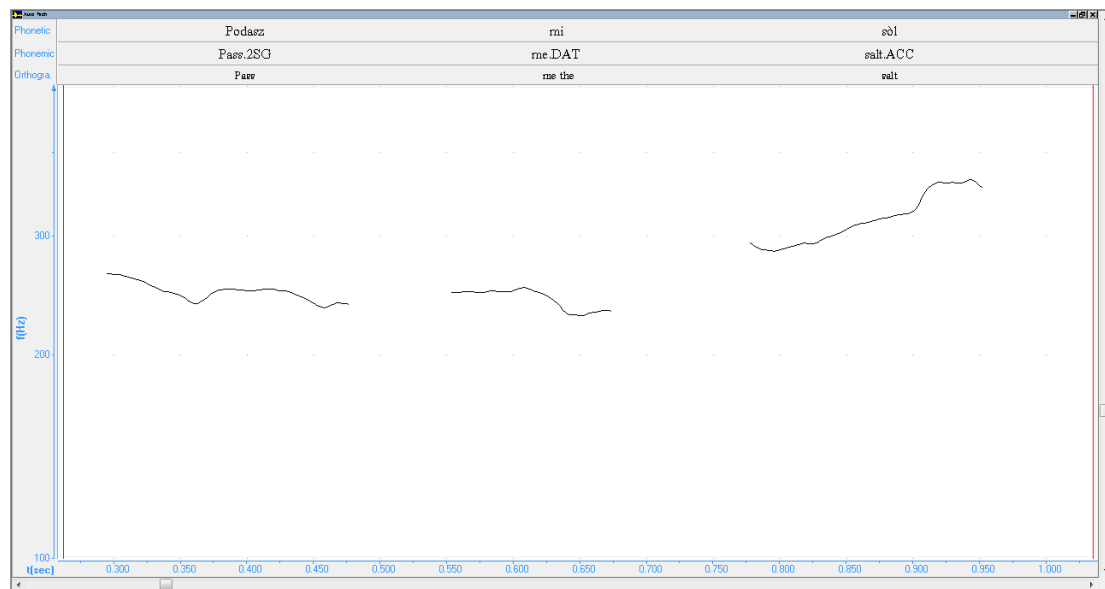


Requests show the same slight rise as for Arabic, although not the same overall lower pitch:

⁷⁹ Note that *czy* here is the disjunction rather than the question particle, which is clause-initial.

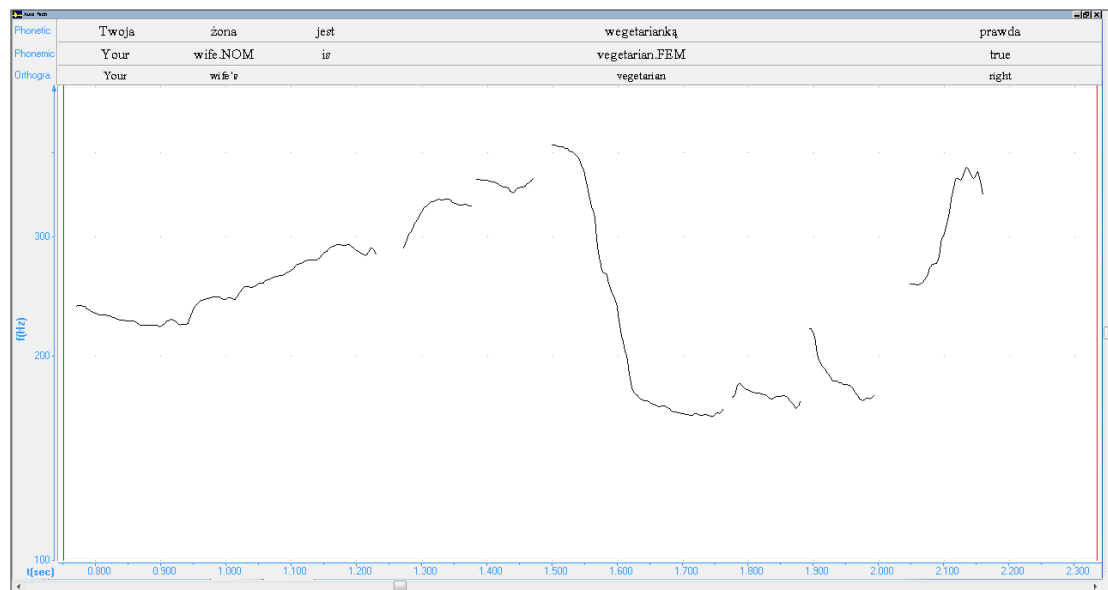
(711) (Czy) możesz mi pożyczyć jakieś pieniądze?
 Q can.2SG I.DAT lend.INF any money
 'Can you lend me some money?'

(712) Podasz mi sól?
 pass.2SG me.DAT salt.ACC
 'Pass me the salt?'

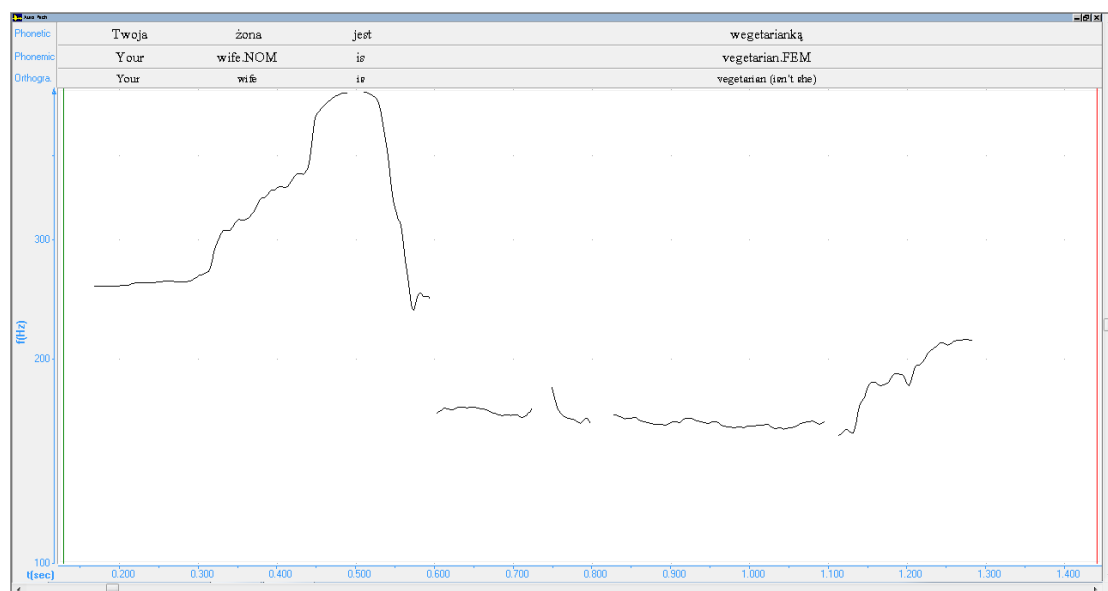


Confirmation questions with tags have the expected fall on the statement and rise on the tag, while those without tags show a very slight final rise from the lowest pitch, but not anywhere near as high as for other questions:

(713) Twoja żona jest wegetarianką, prawda?
 your wife is vegetarian true
 'Your wife is a vegetarian, right?'



(714) Twoja żona jest wegetarianką?
 your wife.NOM is vegetarian.FEM
 'Your wife's vegetarian?'



Also like Portuguese and Arabic, embedded and speculative questions require an embedding predicate but license NPIs:

(715) Zastanawiam się, Rzymianie pili kawę?
 wonder.1SG REFL Romans drank.3PL coffee
 'Did the Romans drink coffee, I wonder?'

(716) Zastanawiam się czy Rzymianie pili kawę w ogóle
 wonder.1SG SIĘ.inherent if/Q Romans drank coffee.ACC at all
 'I wonder if the Romans drank coffee at all?'

(717) Zapytałam go czy on kiedykolwiek prowadzi.
 asked.1SG him if/Q he ever drives
 'I asked him if he ever drives.'

The embedded questions do not have rising intonation – rather, they have a final fall as for statements (and speculative questions may have a final rise)

(Małgorzata Krzek, p.c.).

The intonation facts for Polish indicate that polarity can be licensed by intonation, as NPIs are acceptable in open IQs. The lack of rising intonation on questions without [+Q] suggests that intonation in Polish also encodes question force, as in Portuguese and Arabic. Intonation does not encode [+Q] alone, unlike in Arabic, as is evidenced by the lack of rising intonation on alternative and confirmation questions, and it seems that it is required when both features are present. This places Polish in the same category as Portuguese, but not as French. Polish differs from Portuguese and Arabic, however, in also having a question particle available. In section 5.4.1 I argue that the particle *czy* is a Pol head. Here I note that it is incompatible with those questions with affirmative/negative polarity (alternative questions, confirmation questions, and also statements), which indicates that it encodes open polarity. Polish, then, appears to use its two question marking strategies in different ways: intonation is used when a question is both [+Q] and [\pm Pol], and *czy* is permitted in a superset of those questions, namely whenever a question is [\pm Pol]. It is used in combination with rising intonation, in those contexts in which rising intonation is also permitted.

5.4. Conclusion

The discussion in section 5.3 is summarised in tables 12 and 13:

Table 12. Summary of intonation, illocutionary force and polarity in seven languages.

	English, Finnish, Swedish	Syrian Arabic, European Portuguese, Polish	French
Open question [+Q, ±Pol]	N	Y	N
Speculative question [-Q, ±Pol]	N	N	N
Embedded question [-Q, ±Pol]	N	N	N
Alternative question [+Q, +Pol]	N	Y	Y
Request [+Q, +Pol]	N	Y	Y
Confirmation question [+Q, +Pol/-Pol]	N	Y	Y

Table 13. Features encoded by force in the languages investigated.

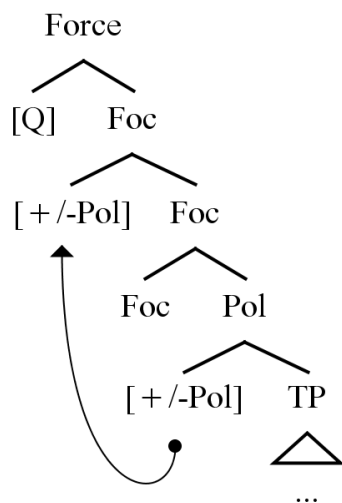
	Question force	Open polarity
Syrian Arabic, European Portuguese, Polish	Y	Y
French	Y	N
English, Finnish, Swedish	N	N

The analysis presented here could of course be extended to other languages. Japanese, for instance, has a question particle *ka*, which appears in final position in all main and embedded questions. In this sense it is comparable to English, Finnish and Swedish in that it has an alternative question-marking strategy that must always be used. However, Japanese also has rising question intonation, and it is therefore interesting to see whether intonation encodes either of the syntactic elements of questions in this language. The occurrence of the question particle in all types of question including requests, confirmation questions, alternative questions and speculative questions indicates that the particle is not

the marker of either question force or open polarity, as it occurs where both of these do not. Japanese also has rising intonation on some types of question but not others, and it seems that it is rising intonation that encodes [+Q] in Japanese. An investigation of the intonation patterns of Japanese would test this claim.

The different question intonation of the languages discussed sheds light on the two features involved in questions, question force and open polarity. Through an examination of the features that can be encoded by intonation, this chapter has shown that the two features are indeed distinct, and must both be present in neutral polar questions. If Force is absent, the question is not information-seeking and it does not have the illocutionary force of a question. If polarity is specified, the question is biased. This section gives support to the proposal that these two elements combine to form questions and that this is the correct syntactic analysis, as shown in (524), repeated here as (718):

(718)



An interesting point to note is that there are four logically possible combinations: that intonation should mark question force, polarity, both, or neither. However, as table 13 shows, only three of these possibilities are extant in the sample.

There are no languages in which questions with open polarity but no question force (that is, speculative and embedded questions) are marked with intonation and those with question force as well (open questions) require a question

morpheme or word order inversion. This might reflect an implicational relation: if a language marks open polarity with intonation, it will also mark question force with intonation. Alternatively, we might expect to find such languages with a larger sample.

Furthermore, the informants for the languages in which IQs encode question force and open polarity have the intuition that the intonation for those questions other than open questions (i.e. those without open polarity) is 'different'. There are two types of intonation, then: one which marks question force and open polarity, and one like the French type, which marks just question force. This is an interesting suggestion, especially if intonation is to be regarded as a syntactic element and comparable with particles as Wakefield (2010) argues, and as I discussed in §5.3. I leave this question for future research, however.

5.4.1. Consequences for the cross-linguistic investigation of question particles

The findings in this chapter show that intonation as a question marker can be specialised to mark either illocutionary force or open polarity (or both or neither). This implies that other question markers can similarly specialise. In addition, it has shown that the heuristic methods (testing for NPI licensing and whether a question requires an answer) work: they seem to make the right predictions regarding question types.

Question particles, therefore, like intonation are either the instantiation of illocutionary question force or of open polarity, or both. If the former, they are directly merged in the Force head to value the [Typ] feature and mark the clause as a question. If the latter, they are merged as Pol and raise to Focus. This claim has the virtue of providing an explanation for why the word order generalisation described in Chapter 2 is not categorical: I noted that FOFC-violating particles almost without exception fail to embed questions, but that those that conform to FOFC either may or may not do so. Adopting the analysis in this chapter, those

that allow the particle to mark an embedded question have the particle in Pol, and for those that do not it is located in Force. This makes predictions about which type of questions the particle should be found in: those presumed to be in Pol should not occur in biased questions, for instance, and those in Force should not appear in questions which do not seek an answer, such as speculative questions.⁸⁰

Polish is an example of a language whose question particle can appear in embedded questions, and in fact the particle *czy* is optional in main clauses but obligatory in embedded interrogative contexts. Therefore, it is expected to mark open polarity and fail to appear in questions without open polarity, namely alternative questions, confirmation questions, and requests. As discussed in §5.3.3 above, this expectation is confirmed: *czy* is not permitted in alternative questions at all (apart from in its other use as the disjunction), and if it is used in a confirmation question the interpretation changes to that of an open question. It can be used in requests, but as noted, Polish requests license NPIs, indicating that they have open polarity.

However, the question particles discussed in Chapters 2 and 3, which violate FOFC, cannot be like the Polish particle, as the structure constitutes a FOFC violation if the particle is final in a VO language: the Q head of Force/Pol has the movement diacritic $\hat{\ }^$ and V, a lower head in the same extended projection, does not. Therefore, at some point in the derivation, a head without the diacritic is immediately dominated by a phrase whose head does have it. In the next chapter, I argue that these particles are not question particles but rather the disjunction. The disjunction is, like *czy* in Polish, a realisation of $[\pm\text{Pol}]$, but it is the polarity head of a second, elided conjunct and not the pronounced clause.

⁸⁰ Note that this applies only if the question particle marks open polarity, as assumed in this work. It does not seem impossible for a particle to mark either positive or negative polarity and therefore be present in biased questions. It ought, in such cases, to be able to appear in declarative sentences in addition to biased questions, like Li's (2006) degree particles, and I do not consider such particles in detail here.

Chapter 6. Final Q Particles and Disjunction

In this chapter, the proposal is offered that final question particles in VO languages are in fact instances of the disjunction. The observation was made in Chapter 2 that these particles are not permitted in embedded interrogatives. Possible reasons for this are explored in section 6.1, and I conclude that they are not selectable heads. We noted in Chapter 4 that polar questions have been analysed semantically as a proposition and its disjunction. This chapter argues that we should go further than that: interrogatives are both semantically *and grammatically* composed of a proposition and the disjunction of its negation, at least those in the VO...Q configuration.

I argue that the particle in VO...Q languages is a disjunctive element and that it takes an elided second clause as its complement, with the first clause in its specifier. Predictions regarding the difference between a language with this structure and one with Q in the CP are made at this end of this chapter and discussed in Chapter 7.

6.1. Why final Q particles cannot be in embedded clauses with VO order

The data in Chapter 2 show that there is a very strong tendency and perhaps an absolute requirement for final polar question particles in languages with VO order not to mark embedded questions. This is interesting in itself and can be added to the list of asymmetries found across languages. This section considers the implications of this asymmetry.

Final polar question particles in embedded questions with VO order are ruled out under FOFC for precisely the same reason as those in main clauses: a structure in which a head-final phrase dominates a head-initial phrase is not permitted, according to the constraint. If the element is a true question particle (i.e. a head in the C-domain), this is the resulting structure and the construction is expected to be disallowed for FOFC reasons. However, on the hypothesis that

FOFC is correct, the element cannot be a head in the C-domain or it would be barred by FOFC in main clauses as well. Instead, I argue that it is ruled out of appearing in embedded questions for some other reason.

The empirical observation is that final polar question particles can only appear in main clauses in VO languages. The question is why this should be the case.

6.1.1. *The particle marks illocutionary question force*

One potentially relevant fact is that illocutionary force is only present in main clauses, as discussed in Chapter 5. If, as many have argued (e.g. Law 2002, Kuong 2008, Endo 2012), the Q feature instantiated by the question particle is in ForceP, the reason for its unavailability in embedded clauses is due to the lack of a head to host it.

On the analysis of questions put forward in Chapter 5, in which questions are formed from a combination of a Force feature and a Polarity feature, we saw that embedded questions may have open polarity but lack illocutionary question force. Examples (590) and (607) from English and Syrian Arabic are repeated here, with the NPIs *any/ayya* showing that the question has open polarity and the infelicity of the answer indicating a lack of question force:

(723) The police need to know [whether there were any witnesses].
#Yes/#No.

(724) 'am isʔal iza bʔyan ayya btaʔat la-l-masraḥyieh
INDIC ask.1SG if left any tickets to-the-play
'I'm asking if they have any tickets left for the play.'

#ʔe/#laʔ
yes/no

As discussed in Chapter 4: §3.2, question particles are traditionally analysed as C, or a head in the split CP (e.g. Bach 1971, Bresnan 1972, Cheng 1991, Watanabe 1992, Rizzi 1997, 2001, Hagstrom 1998, Law 2002, Garzonio 2004, Munaro &

Poletto 2005, Davison 2007, Soare 2007, Cable 2008, Kuong 2008, Ginsburg 2009, Aboh 2010, Coniglio & Zegrean 2010), and often as the instantiation of Force. They have been assumed to be ‘clause-typers’, which also places them in Force. Furthermore, the question particle is almost always final in the clause, indicating that it occupies the highest head, generally considered to be Force (Rizzi 1997). This can be seen in (725)–(727). (725) shows that more than one clause-final particle may co-occur in Cantonese, with the question particle appearing finally. Law (2002) argues that this is due to the existence of two positions for final particles, and one from each of two classes of particles may be present. (726) shows that only one question particle is permitted, indicating that they occupy the same position in the syntax. (727) illustrates the Oriya (Indo-European, India) question particle following clause-final negation:

(725) nei heoi zo Baalai zaa3 me1?
 you go ASP Paris SFP SFP
 ‘Did you only go to Paris?’ (Law 2002: 382)

(726) *keoi5 lei4 maa3me1/ me1 maa3
 he comeQ Q Q Q
 ‘He is coming?’ (Kuong 2008: 719)

(727) tu j- ib- u- ni ki?
 you.NON-HON go FUT 2SG.NON-HON NEG Q
 ‘Won’t you (non-hon) go?’ (Ray 2003: 474)

Negative questions in Fyem (Niger-Congo, Nigeria) have a sentence-final particle, *háá*, which incorporates the negation *héi* and the Q-particle *(y)a* (Nettle 1998: 51), still allowing an analysis of Q as the highest head:

(728) ti lak-ii háá
 2SG.PERF tell-him NEG.Q⁸¹
 ‘Didn’t you tell him?’

⁸¹ The original source gives ‘IMP’ but it appears to mean ‘INT’, which I have glossed as Q for consistency.

There are exceptions to this general observation: in Babungo (Niger-Congo, Cameroon), for instance, the final Q-particle *mū* may be followed by the focus marker (Schaub 1985: 8).

At the end of the previous chapter I argued that those particles that obey FOFC and cannot occur in embedded questions are located in Force, explaining their absence from such contexts.⁸² Those that conform to FOFC and can occur in embedded questions cannot be markers of illocutionary force, which is absent in embedded clauses, and are instead located in Pol. Embedded clauses have polarity and by extension a polarity head, and allow particles encoding open polarity to occur in embedded questions. However, I also argue that the apparently FOFC-violating particles cannot instantiate either Force or Pol, for the simple reason that they violate FOFC if they do so. Although not present in embedded questions, the same elements violate FOFC if they are Force or Pol heads in main clauses. Assuming with Grimshaw (2000) that Force is [+V], we expect any Force⁰ element to conform to FOFC. We do not therefore wish to say that these numerous FOFC-violating particles are located in Force.

Furthermore, the particle is frequently optional, whereas a Force marker is expected to be obligatory if it can be marked overtly, given that Force is always present (in main clauses, at least). Of the 119 languages in my sample, 43 have an optional question particle and just six have an obligatory particle. For 70 languages I have no information either way, but even if all of those have obligatory question particles, there still remain 36% of languages in which the particle is optional (questions are often also marked by some other device, such as intonation). The ratio is almost identical for VO and OV languages, with 39% of OV languages having an optional particle and 37% of VO. (729) and (730) illustrate the optional initial particle in Panjabi (Indo-European) and Wolof (Niger-Congo), while (731) and (732) show the same for the final particle in Tetun (Austronesian):

⁸² If Force is taken to mean ‘clause type’, in the sense of e.g. Rizzi (1997), then embedded clauses do have Force. As described in Chapter 5, I use Force to mean illocutionary force, as in Haegeman (2004), which embedded clauses do not have (with certain exceptions).

(729) (kii) tusīi ajj káánii suNaavoge
 (Q) you today story tell-FUT.2MP
 'Will you tell a story today?' (Panjabi, Bhatia 1993: 5)

(730) (ndax) dinga seeti sa yaay?
 Q DI.you.II see.go your mother
 'Are you going to go and see your mother?' (Wolof, Nije 1982: 264)

(731) at hanawa-n?
 IRR stop-IMM
 'Do (you) want to stop?'

(732) ó m-akara (lale)?
 2s 2s-like no
 'Do you like him or not?' (Tetun, van Klinken 1999: 211)

Note that in Tetun, the intonation-only question is used for biased or rhetorical questions, rather than for information-seeking questions.

If the question particle marks illocutionary force, it goes some way towards explaining why it cannot appear in embedded clauses, but it does not explain why it (seemingly) violates FOFC. Force, as a head, is subject to FOFC and in main clauses the question particle still occurs in the order ruled out by the constraint. An alternative explanation that does have the advantage of explaining this problem, namely that the particle is not a selectable head in some sense, is put forward in the next section.

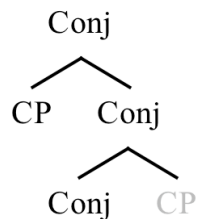
6.1.2. *The particle is a non-selectable disjunction head*

The most obvious structural difference between main and embedded clauses is the fact that embedded clauses have to be selected by a head in the main clause, whereas main clauses are not selected by a higher head.⁸³ If certain question particles are unable to be selected, this would explain their inability to mark

⁸³ This assumes that selection in the syntax is c-selection, or selection for syntactic category. If, as argued by Grimshaw (1979) and Pesetsky (1981), selection is s-selection, whereby predicates have features which select for semantic type, no head needs to be selected. A predicate could select for a Q (question), which is not associated with any particular clause type, and need not even be a clause, as in *John asked me [NP the time]* (Pesetsky 1991: 2).

embedded questions. One such reason might be that they are acategorial.⁸⁴ In this sense they are similar to conjunctions, which are also heads but not selected for (see §6.3). In this chapter, I argue that those question particles which fail to conform to FOFC are in fact disjunctive elements, with the second disjunct elided. The head precedes its complement, the elided clause, and therefore does not constitute a counterexample to FOFC. The pronounced clause is the specifier of the disjunction:

(733)



This chapter argues for this analysis of question particles. In the next section, evidence and arguments are put forward, and in §6.3 the syntax of such constructions is discussed. In §6.4 I explore the advantages of this proposal. Finally, in §6.5, the predictions made under this hypothesis are given, and they are examined in Chapter 7.

6.2. Question particles are disjunction

6.2.1. *Homophony with the disjunction*

Significantly, many question particles bear a resemblance to the disjunction marker found in the language. The Estonian final particle *või* is homophonous with the disjunction, for example. In Japanese, too, the question particle is

⁸⁴ Recall that in Chapter 3, the similar idea was considered that particles are syncategorematic. For a particle to be syncategorematic, as proposed by Biberauer, Holmberg & Roberts (2012), it must be categorially distinct from the EP and neither select nor be selected. I argued in Chapter 3 that question particles do have to select in order to appear in a fixed order, and the fact that they obey FOFC in terms of their interactions with a higher C head indicates that they are part of the same EP. Here, the acategoriality of the particle is not crucial to the analysis; what is important is its selection possibilities. Conjunctions may select, but not be selected.

same particle is used as the interrogative in YNQs, indirect Qs and concessive conditionals. It can also be a reinforcement marker in the *ko...ko* construction, and it can be followed by *kùwa* (= *kò*) (Jaggar 2001: 526):

(738) *kō zā kà zaunà kō kùwazā kà tāshì?*
 [No gloss]
 'Will you stay or leave?'

(739) *kanà sôn wannàn kō wancàn?*
 [No gloss]
 'Do you want this one or that one?'

(740) *kai mālāmī nè kō kò dālibī?*
 [No gloss]
 'Are you a teacher or a student?'

Newman regards its use as a question particle as '[o]bviously an extension of the use of *kō* as a disjunctive 'or' in alternative questions' (2000: 500):

(741) *kō kin yāřda kō bà kì yāřda bā?*
 [No gloss]
 'Do you agree or do you not agree?'

He also notes that *kō...kō* with clauses means 'either/whether...or'. Alternative forms of this construction are *au...au* or *immā...ko* or *immā...immā*, and the latter is formal.

Kō can also be placed finally as a tag meaning 'or (what)' (Jaggar 2001):

(742) *yā tàfi kō?*
 [No gloss]
 'He's gone has he?' (Jaggar 2001: 524)

(743) *zā kà dāwō dà wuri kō?*
 [No gloss]
 'Are you going to return soon?' (Newman 2000: 499)

Newman (2000: 499) argues that '[t]he tag *kō* can be thought of as a grammaticalized reduction from an elliptical negative sentence or from the clausal tag *kō bā hakà bā?* "or is it thus?". It expects an affirmative answer.

Heine & Kuteva (2002: 226) also cite examples from Hausa, illustrated in (745)-(746), where, as noted, the question particle *kō* means ‘or’ or ‘either... or’:

(744) *kō nī kī kai*
 either 2SG or I
 ‘Either you or I’

(745) *kō kā sǎmi gyàda mài yawà?*
 Q you get peanuts many
 ‘Did you get a lot of peanuts?’

(Cowan & Schuh 1976: 216, cited in Heine & Kuteva 2002)

They note that forming a question with the disjunction is common in African languages, and mention Moré (Niger-Congo, Burkina Faso), where the question particle *bi* is also a ‘listing connective’. Similarly, Kxoe (Khoisan, Angola/Namibia) uses *re*, a disjunctive marker, as the question marker.

Latvian (Indo-European, Latvia) has the disjunction *vai* which is also the question particle, like Estonian *või* (Uralic, Estonia). The isolate Basque has a disjunction *ala* which has a ‘limited interrogative function’⁸⁵ (Heine & Kuteva 2002: 226–7):

(746) *beltz- a ala zuri- a?*
 black DET or white DET
 ‘Red or white (wine)?’

(747) *nun ibili z- ara? Lapur(r)-eta-n ala?*
 were more[PFV] 2SG.ABS AUX thief-PL-LOC or
 ‘Where have you been? Among thieves?’⁸⁶

In Rotuman (Austronesian, Fiji), there is a tag *ne* that is also the disjunction marker (Churchward 1940: 61):

⁸⁵ Heine & Kuteva do not expand on this ‘limited’ function. It is possible that it does not in fact have any interrogative function, but is used like the English disjunction in the parallel example *red or white?* – that is, simply as the disjunction.

⁸⁶ Slightly modified: the original gives *thiefs* for *thieves*. The element glossed as ‘were’ should probably be ‘where’.

(748) fā ta pot pau, ne?
[No gloss]
‘The man is very clever, isn’t he?’

Turku, a stable Arabic pidgin, uses the disjunctive marker *wala* as the question particle:⁸⁷

(749) laam da shuf anína wála?
animal DEF saw us Q
‘Did the animal see us?’ (Tosco & Owens 1993: 200, 202)

Heine & Kuteva (2002) give two related paths for grammaticalisation, Neg > Q and Or > Q.⁸⁸ In addition to languages that have a question particle which is homophonous with the disjunction, there are several languages in which the particle is also the negative particle. This is consistent with the idea that the question particle is grammaticalised from an ‘or not’ clause. If a polar question is, as argued below, equivalent to the disjunction of a proposition and its negation, these languages also have a particle which looks like some element of the disjunctive clause.

In Wolof (Niger-Congo, Gambia/Senegal), for example, there is an initial negative question particle, *tedu*, which can only be used in negative, direct questions. It means literally ‘and not’, and it is possible to use *te* ‘and’ or *du* (a ‘durative negative’) alone (Njie 1982: 265). I suggest that the particle is literally ‘or not’ and the first clause of a disjunctive structure is elided, leaving the particle in initial position preceding a negative second disjunct. This is the logical counterpart of the argument put forward for other languages in this chapter, which are argued to have final particles due to deletion of the second disjunct.

⁸⁷ It would be worth investigating pidgins in more detail in future research, although it is beyond the scope of this thesis. Pidgins, especially those that are unstable, are in the process of grammaticalisation and if they consistently use disjunction to mark an interrogative, that would be a very interesting finding.

⁸⁸ Heine & Kuteva argue that this is a process of grammaticalisation. As explained in the final section of this chapter, it is necessary for my argument that final particles in VO languages have not grammaticalised to a true question particle, although there is nothing to prevent other types of question particle from doing so.

In Vietnamese, too, the particle is homophonous with the negation and is final, while the usual negative morpheme is clause-medial (Duffield 2011: 1–2):

(750) chị có mua cái nhà không?
 PRN ASR buy CL house NEG
 ‘Did you [elder sister] buy (the) house?’

(751) chị không mua cái nhà.
 PRN NEG buy CL house
 ‘You [elder sister] did not buy (the) house.’

This pattern is exactly paralleled in Thai, where the final question particle and the medial negative particle are the same (Somphob Yaisomanag, p.c.):

(752) Nát khàp rôt máy
 Nath drive car Q
 ‘Does/will Nath drive?’

(753) Nát mây khàp rôt
 Nath NEG drive car
 ‘Nath doesn’t/won’t drive.’

The relation of the negation marker and the question particle is very common in Sino-Tibetan languages. In many Tibeto-Burman languages the negation *ma* has become used as the question particle (Heine & Kuteva 2002: 216). In addition, the A-not-A questions found in Chinese languages are transparently formed around the negation and disjunction (all cited in Heine & Kuteva 2002):

(754) nee zek- mu- zek iŋ ah? [Cantonese]
 you smoke not smoke PRT⁸⁹
 ‘Do you smoke?’ (Harris & Campbell 1995: 79)

(755) tā bu zài jiā [Mandarin]
 3SG NEG at home
 ‘S/he is not at home.’

⁸⁹ I have altered the gloss slightly: the original gives ‘[...] smoke iŋ ah’. *iŋ* is the direct object, *zek iŋ* meaning literally ‘eat smoke’. *ah* is an SFP (Chi-Wai Lee, p.c.).

(756) tā zài jiā bu zài jiā?
 3SG at home not at home
 'Is s/he at home?'

(Li & Thompson 1984: 52ff, Harris & Campbell 1995: 295)

Turkish, too, has an apparently similar construction, although the duplication of the question particle indicates that this may be a disjunction of two questions, comparable to the English translation. The particle *mi* is derived from the negation (Heine & Kuteva 2002):

(757) kadın tarla-ya git-ti-mi git-me-di-mi?
 woman field-DAT go-PAST-Q go-NEG-PAST-Q
 'Did the woman go to the field (or didn't she go)?'

(Harris & Campbell 1995: 295)

As Heine & Kuteva (2002: 227) note, the disjunction and negation are often combined:

(758) mova vano,tu ara? [Modern Georgian]
 s/he.come Vano or not
 'Will Vano come, or not?' (Harris & Campbell 1995: 295)

In Tetun (Austronesian, East Timor) the marker of a YNQ is the negation of the clause, which can be the full negated clause, *ka lale* 'or not' or *lale* 'no, not'. Alternatively, intonation alone may mark the utterance as a question (Van Klinken 1999: 211-2):

(759) ...at sei sukat nia lai: nia na'in ká na'in ha'i?
 IRR still measure 3S first 3S noble or noble not
 '(I) would like to test him first: is he a noble, or isn't he a noble?'

(760) n-ák "Bele? Ita ruas sukat malu bele ká lale?".
 3S-say can 1PL two measure each.other can or no

n-ák "Bele".
 3S-say can

'(He) said "Can (we)? Can we two test each other, or not?". (She) said "(We) can".'

(761) ó m-akara lale?
2s 2s-like no
'Do you like (him or) not?'

(762) ó la bá sekola ká?
2s not go school or
(Said to child playing:) 'Didn't you go to school?'

(763) n-ó ha 'i husu?
3-exist not request
'Aren't there any questions?' (Said when it appeared that there were none)

Harris & Campbell (1995) suggest that the expression 'or not' in Chinese is derived from an A-not-A structure, based on its form, although they note that its function is often similar to that of a tag.

Although it is not the case that all or even most languages have a particle that is clearly homophonous with the disjunction, the data given in this section demonstrate that it is a common occurrence. In addition, the use of the disjunctive marker as a question particle can lead to phonological sound changes which can obscure the fact that the two elements are related. Aldridge (2011), for instance, tracks the development of a Mandarin negative existential verb *wu* 'not have'/'not exist' as it undergoes phonological and syntactic change to the modern question particle *ma*.

6.2.2. The semantics of polar questions includes disjunction

There is a clear relation between interrogatives and disjunctive constructions. Most obviously, (764) does not differ from (765) in meaning when uttered with neutral intonation:

(764) Has Qi had her viva yet?

(765) Has Qi had her viva yet or not?

The questions in (764) and (765) are understood as expressing the question, ‘(Please tell me), is it the case or is it not (yet) the case that Qi has had her viva?’ An early proponent of this theory is Coleman (1914: 22):

Such questions [yes/no questions] seem to me to be simply alternative questions in which the second alternative has been suppressed. By its nature such a question expects one of two answers; it is therefore an alternative question; the alternative ‘or not’ is in such cases always present to the mind.

The idea that the semantics of a polar question is that of a proposition and its negation has been noted by e.g. Katz & Postal (1964), Hamblin (1973), Karttunen (1977) and Farkas & Bruce (2010). Farkas & Bruce (2010: 94) state that ‘the denotation of [a polar interrogative] is $\{p, \neg p\}$ ’, or the set of possible answers to the question.

AnderBois (2011) argues that Yucatec Maya questions are the result of the normal functions of focus and disjunction. In this language, too, the question particle is homophonous with the disjunction, and it may connect two overt disjuncts or the second may be left unexpressed:

(766) [Juan-wáaj] uk’ le sa’-o’
 Juan-or drink.AGENT.FOCUS DEF⁹⁰ atole-DISTAL
 ‘Was it Juan who drank the atole?’ (AnderBois 2011: 53)

(767) [Juan wáa Daniel] uk’ le sa’-o’
 Juan or Daniel drink.AGENT.FOCUS DEF atole-DISTAL
 ‘Was it Juan who drank the atole or was it Daniel?’ (AnderBois 2011: 32)

In both (766) and (767), the disjoined constituents are focussed and fronted. If the subject(s) are in canonical subject position following the verb, the utterance is unambiguously interpreted as an assertion. (766) is unambiguously a question, but (767) is ambiguous between a question and an assertion depending on context: if the two alternatives *Juan* and *Daniel* are the only

⁹⁰ Slightly modified for consistency with (767); the original has ‘the’ in the gloss.

possibilities, it is a question. If there is at least one other option (for instance, both the speaker and hearer know that it was one of the speaker's three siblings who drank the atole), it can be interpreted as an assertion, asserting that the drinker of the atole was Juan or Daniel. It is also possible to have a question with no focussed constituent, in which the particle attaches to the first element, usually the tense/aspect marker, and this is unambiguously a question:

(768) táan-wáaj u yuk'-ik le sa'-o' Juan
 PROG-or A.3 drink-STATUS DEF atole-DISTAL Juan
 'Is Juan drinking the atole?' (AnderBois 2011: 13)

AnderBois argues that the polarity is the disjoined element here, and the utterance has the semantics $\{drink-atole(juan), \neg drink-atole(juan)\}$ or more generally, $\{p, \neg p\}$ (AnderBois 2011: 56). The ambiguity or otherwise of these utterances and their use of the disjunction marker is explained using the notions of exhaustivity and exclusivity. AnderBois claims that the 'empty disjunct' is interpreted as 'the exhaustive set of like elements which is mutually exclusive from the overt disjunct' (2011: 53). When *Juan* is the first disjunct, the exhaustive set of mutually exclusive like elements is 'anyone else', which AnderBois claims is the interpretation of the empty disjunct. When the positive polarity is the first disjunct, the empty disjunct is interpreted as the negative equivalent of the first disjunct. This means that although the syntax is that of a straightforward disjunctive assertion, an utterance like (766) or (768) is interpreted as a question because it is uninformative. It is a tautology, with the interpretation in these examples of either *Juan or someone else drank the atole* or *Juan drank the atole or didn't drink the atole*. (767) is interpreted as a question in precisely those situations in which it is uninformative.

AnderBois explicitly states that questions in Yucatec Maya are not derived through ellipsis; that is, the semantics of these questions does not reflect their syntax. However, I suggest that in fact, the same relation is true of the grammatical structure and questions are syntactically, as well as semantically, disjunctive constructions.

6.2.3. *The syntax of polar questions includes disjunction*

Katz & Postal (1964: 100) state that ‘in the ordinary yes/no questions [...] the sentences disjoined are apparently a sentence S and its negation’. They actually argue that yes/no questions are *wh*-questions with a sentence adverbial ‘either-or’ which is associated with the *wh*-morpheme, overtly expressed as *whether* in embedded interrogative clauses. This analysis explicitly relates yes/no questions to disjunctive forms, with examples such as (769) being the disjunction of (770) and (771). (772) differs from (769) only in the presence or absence of a Q morpheme (meaning ‘I request that you answer’) and a *wh*-morpheme (associated with a sentence adverbial *either* to indicate that it is the questioned element), on Katz & Postal’s account:

(769) Is John a doctor?

(770) John is a doctor.

(771) John is not a doctor.

(772) Either John is a doctor or not.

(Katz & Postal 1964: 118-119)

As discussed in Chapter 4, the Q and *wh*-morphemes do not seem to have independent existence for Katz & Postal. In Chapter 5 I proposed that Q is present in polar questions and means ‘I request that you answer’, as for Katz & Postal. I also argued that polar questions are like *wh*-questions in focussing the questioned constituent, but that they differ from *wh*-questions in that the questioned element in polar questions is the polarity variable rather than a *wh*-phrase.

Amritavalli (2003) and Jayaseelan (2008) study the disjunction marker *-oo* in the closely-related Dravidian languages Kannada and Malayalam respectively.

(773) doDDa bekki-g-oo chikka naayi-g-oo [Kannada]
big cat-DAT-OO small dog-DAT-OO
‘for/to a big cat or a small dog’

(774) John-oo Bill-oo Peter-oo wantu [Malayalam]
 John-DISJ Bill-DISJ Peter-DISJ came
 'John or Bill or Peter came.'

In both languages, the disjunction has some interrogative function: in Kannada, it gives an alternative question reading when it connects clauses, as in (775), and in Malayalam it is the normal polar question particle (776):⁹¹

(775) avanu bar-utt-aan-oo, naavu hoog-utt-iiv-oo [Kannada]
 he come-NONPST-AGR-OO we go-NONPST-AGR-OO
 #'Either he comes or we go.'
 'Does he come or do we go?'/ 'Will he come or will we go?'

(776) Mary wantu-oo ? [Malayalam]
 Mary came-Q
 'Did Mary come?'

In (777) the Kannada negative element *illa* is used to give a disjunction of two declarative clauses, appearing initially. It is sentence-final when it functions as sentential negation, and both types are shown in (778). The Malayalam equivalent *illa* is used in alternative questions, as illustrated in (779):

(777) illa avanu bar-utt-aane, illa naavu hoog-utt-iivi
 NEG he come-NONPST-AGR NEG we go-NONPST-AGR
 'Either he comes, or we go.' [Kannada]

(778) illa niinu beTTa-kke hoogal-illa, illa beTTa ninna
 NEG you hill-DAT go-INF-not NEG hill you-GEN
 hatra baral-illa
 near come-INF-not
 'Either you did not go to the mountain, or the mountain did not come to you.'

(779) Mary wantu-oo, illa-(y)oo ? [Malayalam]
 Mary came-DISJ not-DISJ
 'Did Mary come, or not?'

(Kannada examples from Amritavalli, 2003: 2-4; Malayalam examples from Jayaseelan 2008: 1-2)

⁹¹ The morpheme *-oo* is glossed as 'Q' and 'oo' in (775) and (776) respectively because the examples are taken from the sources indicated in the text with glosses unchanged.

Amritavalli (2003) gives an account similar to Katz & Postal's in that she argues that the structure of alternative questions always involves *either...or*. She likens Kannada *-oo* to English *either*, and claims that both adjoin to a Q operator: *either* adjoins to *wh* to form *whether*, and *-oo* adjoins to Q to give an alternative question interpretation. Q in Kannada is always covert. In English, Amritavalli follows Higginbotham (1991) in arguing that *either* must be licensed by an always-covert Neg in order to get its existential negative polarity item reading seen in (780), where it is equivalent to *any* (Higginbotham 1991):

(780) John plays either game [...so he'll play whichever you please].

Therefore, in both languages there is an operator that is always covert: covert Q licenses *-oo* in Kannada and covert Neg licenses *either* in English. Amritavalli claims that the default interpretation of an utterance with *-oo* or *either* is the one which is licensed by the covert operator if no overt element (such as *illa*) is present. In a rule which Amritavalli compares to the 'Elsewhere' principle of phonology, she suggests 'assume a Q licenser unless Neg is overt' for Kannada and vice versa for English (2003: 18).

It should be noted, however, that *-oo* is not the neutral, main clause polar question marker in Kannada, and this situation is perhaps not generalisable. There is a particle *-aa*, which is used to indicate main clause polar questions, and cannot occur in *wh*-questions. In Malayalam, the disjunction *-oo* is used for polar questions, and Jayaseelan (2008) argues for a relation between the disjunction and the interrogative, although he does not claim that the question particle is the disjunction. Instead, he argues that the question operator is equivalent to the disjunction operator, and that this holds cross-linguistically.

(774)–(776) above illustrate the homophony between the Malayalam disjunction and the question morpheme. Jayaseelan follows Baker (1970), who claims that the question particle is equivalent to the question operator, but suggests that this is only true of some languages. He argues, however, that the disjunction operator and the question operator are equivalent cross-linguistically:

(781) Question operator = disjunction operator

(782) Question operator = question particle (in those languages where the two are homophonous)

Therefore, Jayaseelan (2008) sees the question particle not as a clause typer in the sense of Cheng (1991), but as the lexical realisation of the disjunction. The disjunction is what causes the sentence to be interpreted as a question. Furthermore, the disjunction operator is not equivalent to the disjunctive particle: there may be as many disjunctive markers as disjuncts, but there is only one disjunctive operator. The markers are copies of the operator, which is deleted when copies are present on the disjuncts. The operator itself can be in one of two positions, giving the two possible interpretations: when it is low, in the left periphery of *vP*, it is interpreted as the disjunction. When it is in *Force*⁰, it is interpreted as forming a question. The Malayalam questions above have an overt disjunctive operator in *Force*⁰, giving their interpretation as questions. Jayaseelan does not give a reason for the interrogative interpretation of the disjunctive operator in *Force*, simply saying that ‘when generated in the C-space, [it] outputs the question meaning’ (2008: 10).

Jayaseelan (2008) extends his analysis to English by appealing to its relation to Dutch: he interprets *if* as a question particle, present in embedded polar questions though not elsewhere. English *if* has a cognate *of* in Dutch, which is the disjunction marker and introduces embedded polar questions (Jayaseelan 2008: 10). This follows the Malayalam pattern of having the same marker for disjunction and question formation. English does not use *if* to mark disjunction, but instead uses *or*. In fact, in older varieties of English *or* could be used to introduce embedded questions:

(783) He asked the lords [...] or they wolde therefore warre
‘He asked the lords if they would therefore (go to) war’
(1510. *Virgilius* in Thoms *E. E. Rom.* 23)

(789) John-ka Bill-(ka)-ga hon-o katta [Japanese]
 John-DISJ Bill-DISJ-NOM books-ACC bought
 'John or Bill bought books.' (Kuroda 1965, in Jayaseelan 2008: 3)

(790) onii-san wa coohii wo nomimasu ka?
 brother-HON TOP coffee OBJ drink Q
 'Does your brother drink coffee?' (Risa Goto, p.c.)

(791) dare-ga kimasu-ka?
 who-NOM come-Q
 'Who's coming?' (Nishigauchi 1990: 18, in Jayaseelan 2008: 4)

This is in itself problematic. Jayaseelan (2008) takes the fact that the particle is present in *wh*-questions, either overtly or covertly, as evidence that it cannot be a straightforward instance of the disjunctive connective, as 'it does not connect anything' (2008: 5). He takes this as his justification for the more complicated analysis of the particle as the lexical realisation of the disjunctive operator. However, if the question particle is the lexical realisation of the disjunction operator and a yes/no question is the disjunction of a statement and its negation, there is still no explanation for the fact that the particle occurs in *wh*-Qs. A *wh*-question cannot be in a disjunctive relation with its negated counterpart because it is not itself affirmative (a question has open polarity):

(792) *Who's coming or not?

(793) *What did Siri do or not?

(794) *What's happening or not?

Note that (786) is an alternative question ('Does the mister want tea or coffee?'), with 'tea' or 'coffee' as the possible answers. The particle is not present in this question, which is to be expected if it is the disjunction. The question in (795)–(796) can be interpreted as either an alternative question, as in (795), or as a yes/no question, as in (796) (although in this context it might be considered pragmatically odd). The alternative question allows an answer specified in the question, and a YNQ allows 'yes' or 'no' as an answer:

(795) *Alternative question:*
Does the mister want tea or coffee?
Tea/coffee

(796) *Yes/no question:*
Does the mister want tea or coffee?
Yes/no

However, (797) shows that adding a further disjunction and negation (the equivalent of the question particle, on the hypothesis of this chapter) forces the YNQ interpretation. As a result, the alternative reading is no longer possible.

(797) Does the mister want tea or coffee or not?
*Tea/coffee
Yes/no

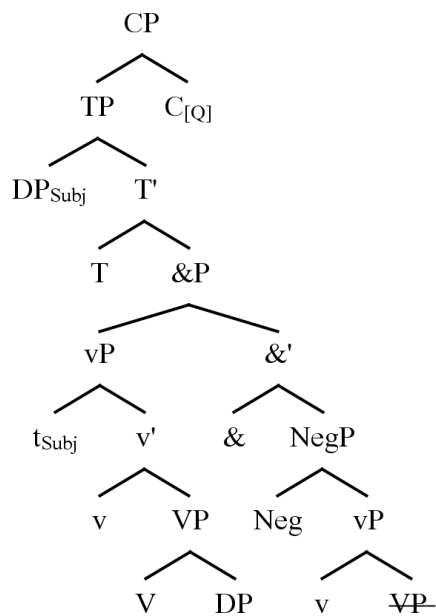
Aldridge (2011) also claims a disjunctive origin for Mandarin particle questions. She argues that the question particle *ma* is derived from the negation in the second clause of a disjunctive structure, but that it has grammaticalised into the question particle, giving the familiar structure in (798):

(798) [CP [TP ni [T' yao [VP kan zhe-ben shu]]] ma]?
2S want read this-CL book Q
'Do you want to read this book?' (Aldridge 2011: 1)⁹²

Aldridge (2011) claims that there is strong evidence in Mandarin Chinese for the grammaticalisation of *ma* from a negative existential verb, *wu* 'not have' / 'not exist'. She wishes to show that the structure in (798) is not FOFC-violating, as it appears to be, because the input to the grammaticalisation process is a head-initial structure. Although in Aldridge's account the particle is derived from a negative element (rather than the disjunction), she still assumes a disjunctive structure with a positive statement and its negation as the two disjuncts. Her analysis is that questions with the final polar question particle *ma* have a disjunctive structure, with two vPs conjoined and the second VP deleted. The particle is originally a verb in the second v, which is stranded when the VP is deleted. This is the structure shown in 799 (based on Aldridge 2011: 10, 13):

⁹² Page references to Aldridge (2011) throughout refer to a draft version.

(799)



The ‘particle’ is located in the second *v*. From there it raises to C to check C’s [Q] feature. VP begins to lose its selectional restrictions, retaining only [Neg], until it loses even that. At this point, the negator is reanalysed as having a [Q] feature and being base-merged as a C element. Aldridge traces two ‘waves’ of grammaticalisation of a negative element to a question particle, involving first the negative auxiliary *fou* ‘not be’. Later the negative existential *wu* ‘not have’/ ‘not exist’ became *ma* after phonological changes: in the 9th century *wu* began to be written *mua* when used in questions, and then the glide was lost. The character used to write it was replaced with another, used solely to write the question particle *ma*.

In support of this analysis, Aldridge notes that *ma* ‘seems to retain some of its earlier negative/disjunctive lexical meaning’ (2011: 20) and it cannot occur with a *wh*-word. When the two do co-occur, the *wh*-word is interpreted as an indefinite (2011: 20):

(800) ni chi-le shenme?
2S eat-ASP what
‘What did you eat?’

(801) ni chi-le shenme ma?
 2s eat-ASP what Q
 'Did you eat something?'

AnderBois (2011) also notes this alternation in Yucatec Maya and attributes it to disjunction. On his account, questions are a result of the normal effects of disjunction and focus, and *wh*-words and indefinites receive the correct interpretation based on these factors.

In addition, a particle *ye*, derived from the disjunction *yu* 'or', could appear overtly with the question particle in middle Chinese (5th–10th century) (Aldridge 2011: 20):

(802) ni ying dao Xitian ye wu?
 2s perhaps go Western Paradise or not.have
 'Have you perhaps been to the Western Paradise (or not)?'
(Zutangji, Shitou)

This example appears to show a disjunctive structure still available at this time in the history of Chinese.

Contrary to Aldridge's argument, these facts seem to indicate that the question particle is not fully grammaticalised. A grammaticalised question particle ought to be semantically bleached and reanalysed as a question particle in C. If it is no longer the negation in a disjunctive structure and has been reanalysed as a C element, there should be nothing to prevent it occurring with *wh*-words, just as the Japanese question particle *ka* does. *Ka* is also homophonous with the disjunction, and I argue later in this chapter that the particle is grammaticalised from the disjunction in this language.

Aldridge's evidence for the grammaticalisation of the particle is as follows:

Co-occurrence with non-existential predicates

As a negative existential verb, *wu* could only negate other existential verbs (Aldridge 2011: 2):

(803) qiu han you jiu wu?
autumn cold have liquor not.have
'In the autumn cold, is there any liquor?' (Bai Juyi, 9th century)

However, it was possible for it to negate non-existential verbs, indicating a loss of selectional restrictions (Aldridge 2011: 2):

(804) jinri chi bian shi wo wu?
today lake by know me not.have
'Do (you) know me today by the lake?' (Bai Juyi, 9th century)

Note that these two examples are from the same text. It is possible that (803) represents a conservative usage and (804) a more modern one, and that the period they are from was a time of instability in this respect. The two instances represent the source form and the grammaticalised element, co-existing at this point. In modern Mandarin, *ma* can freely appear with existential and non-existential verbs.

Co-occurrence with negated predicate

As a negative existential, *wu* could not appear with a negated predicate. This is because it was itself a negator, meaning 'not have' or 'not exist'. We do not, of course, have ungrammatical examples, given that Aldridge is working with historical data. However, in earlier periods *wu* appeared only with positive predicates, as in (803)–(804) above. Later it began to appear with negated verbs, as in (805)–(806) (Aldridge 2011: 6):

(805) hai *bu* sang shen shi ming ye wu?
ADV not lose body lose life or not.have
'Will one not lose life and limb?' (*Zutangji*, from Wu 1997: 49)

(806) *mo shi benlai ren ye wu?*
 NEG COP original man or not.have
 'Is (it) not an original man?' (*Zutangji*, Dongshan)

Aldridge argues that the reason a negative verb that has not grammaticalised cannot appear in negative questions is that it occupies the Neg head of the vP, and it thus blocks another negative from occurring in that vP. It is impossible for the first vP to contain Neg as the disjunction must be between a positive and a negative vP. The appearance of examples such as those in (805)–(806) indicates that grammaticalisation has taken place.

This is problematic if one also assumes FOFC. Aldridge seeks to avoid the FOFC-violation by showing that the input structure to the grammaticalisation process is head-initial, with the negative element heading an elided vP. This structure is head-initial, but if the verb is reanalysed as a question particle base-generated in C, the FOFC violation remains: the 'output' structure has a head-final phrase (CP) immediately dominating a head-initial phrase (TP). More specifically, C has the linearisation diacritic \wedge while its complement does not. As discussed in Chapter 3: §1.3, diachronic change cannot result in a FOFC-violation.

Main clauses are less conservative than embedded clauses

There are texts in which the characteristics above are true of main clauses, but they do not hold true of embedded clauses. These clauses look more conservative with only positive, existential predicates occurring with *wu*. Aldridge attributes this to the lack of a position for Q in embedded clauses, preventing the negative existential from grammaticalising and forcing it to remain in Neg.

Phonological change

A final argument, not explicitly stated by Aldridge (2009) but amply documented in her analysis, is the process of phonological change that resulted in the current form *ma* from the earlier *wu*. Phonological reduction is a common effect of

grammaticalisation, and this is applicable to the loss of the glide from *mua* to *ma*. It does not, however, explain the addition of the initial nasal.

Aldridge (2009) explicitly relates questions formed with *ma* to A-not-A questions. She acknowledges that questions with the form VP-not-VP did not appear until later, but argues that the foregoing evidence suggests that there were vP-not-vP questions, but that their existence was masked because the second vP was deleted, as discussed above. The two types of questions, *ma* and A-not-A, are for her the same phenomenon. Huang, Li & Li (2009) make a different argument, and set out a number of differences between what they term ‘YNQs’ (i.e. those with *ma*) and A-not-A questions, despite the fact that the two are usually translated in the same way:

Table 14. Difference between A-not-A and YNQs with *ma* (summarised from Huang, Li & Li 2009).

A-not-A	YNQ (<i>ma</i>)
Have positive and negative expressed in the question	Can be positive or negative
Always neutral	Can be biased
Can take adverb <i>daodi</i> (‘truly’: impatience)	Can take adverb <i>nandao</i> (‘actually’: incredulity)
Optional final <i>ne</i>	Obligatory <i>ma</i> (and no <i>ne</i>)

Such differences could be explained by appealing to the fact that although *ma* questions are formed from A-not-A structures, the grammaticalisation process means that they are no longer technically A-not-A questions. However, as noted above, in order to avoid a FOFC violation, we must assume that reanalysis of the negative existential as a question particle does not take place. Furthermore, Huang, Li & Li distinguish between different types of A-not-A questions: those with *haishi* ‘or’, which is a special disjunction for questions that Huang, Li & Li equate to ‘whether’, and those without *haishi*. For Huang, Li & Li, A-not-A questions with *haishi* are a special type of ‘disjunctive’ (alternative) question but those without are not; they are a separate type of question. They point out that island constraints apply to true A-not-A questions but not *haishi* questions; that in embedded clauses A-not-A questions must be indirect, whereas *haishi*

questions can be direct questions; and A-not-A questions must have the positive element before the negative, whereas *haishi* questions allow either order.

On the analysis proposed in this thesis, the type of question under discussion is related to the alternative questions with *haishi* rather than true A-not-A questions. *Haishi* is a disjunctive element much more like those seen in other languages studied here, which use the disjunctive particle rather than a verbal element to mark questions. If Aldridge (2009) is correct (*pace* Huang, Li & Li's differences between A-not-A and particle questions), *ma* is not a question particle of the type investigated here. I leave this discussion aside here.

6.2.4. Arguments against equating the interrogative and the disjunction

The preceding three subsections have offered phonological, semantic and syntactic arguments for the identification of the question particle and the disjunction. Not all authors agree that yes/no questions can be related to the corresponding disjunctive interrogative, however. Bolinger (1978) cites three arguments commonly cited in support of this theory and provides evidence against each: YNQs can be paraphrased as alternatives questions with *or not* as the second disjunct; *whether*, which implies disjunction due to its relation to *either*, embeds YNQs; and the intonation contour of yes/no questions is that of the first disjunct of an alternative question.

Bolinger offers twelve different types of YNQ that are odd if 'or not' is added as an alternative:

1. Invitations:
'Do you want some (or not)?'
2. Surprise at self-evident fact:
'Are you still around (or not)?'
3. Call for information that the act of answering provides the answer to:
'Are you awake (or not)?'

4. Embody information:
'Did you know that Jack Robinson was my cousin (or not)?'
5. Little likelihood of a negative answer:
'Is everybody ready (or not)?' (at an exam)
6. Indefinites *some-any, often-ever*:
'Have you often been there (or not)?' (cf. *'have you ever been there or not?'*)
7. YNQs that suggest answer to *wh*-Qs:
'What's the matter? Are you tired (or not)?'
8. Seeking specification (not negation):
'Is today the seventeenth (or not)?' (A real alternative question in this context would be e.g. *'Is today the seventeenth or the eighteenth?'*)
9. No prior discussion:
'I've just heard the Alinskys are having a party. Are you going (or not)?' or
'Have you met my sister (or not)?'
10. Query inferences:
(The questioner has just been told the interlocutor can't sleep in the same room with someone): *'Does he always snore?'*. This could also be a suggested answer to the *wh*-question (*'why? Does he...'*) and is similar to 8, where a negative answer is unhelpful, and rather affirmation/specification is called for.
11. Requests:
'Will you help me (or not)?'
12. Assumption of the absurd:
'Are you crazy (or not)?'

(Bolinger 1978: 88-90)

Note that all of these questions can have 'or not' if they are interpreted as neutral polar questions. However, even with the context provided by Bolinger, in my dialect some of them are acceptable with 'or not': *Have you often been there* is slightly infelicitous in any case, but with 'or not' becomes no more so; *Is today the seventeenth or not* seems unremarkable; and the 'no prior discussion' examples are both absolutely fine (especially *Have you met my sister or not*).

Those that are not acceptable with 'or not', in the terminology of Chapter 5, either lack question force (e.g. 2, 4, 12) or open polarity (e.g. 3, 7, 8, 10), or both. For instance, it is felicitous to respond to 4, *Did you know Jack Robinson was my*

cousin?, with *Oh, is he?*, which does not provide an answer to a polar question, but is rather the response to an informative statement. In 8, *Is today the seventeenth?*, the polarity is affirmative because the questioned element is not the polarity, but *the seventeenth*. There is a presupposition that today is some date, and the questioner wishes to find out which it is. In fact, there is also an expectation that it is the answer given in the question. This is not a true polar question.

Bolinger also notes that if 'or not' were always 'present in the mind' (Coleman 1914: 22), pronouncing it overtly should not affect the meaning of the question, and claims that this is not the case. It is true that in many of the examples he cites, adding 'or not' does change the meaning in that it forces a neutral interpretation. This is precisely because it is neutral polar questions that are paraphrasable by, and syntactically equivalent to, alternative questions. Those that cannot include 'or not' and retain their meaning are those which lack question force or open polarity. As discussed in Chapter 5, it is possible to provide the unexpected answer to a biased question, often with some change in tone or extra material required. This possibility is allowed for by the fact that they have the form of questions, which in English is subject-auxiliary inversion. In a neutral question, 'or not' is redundant but can be pronounced, and adding it to a non-neutral question forces a neutral interpretation because the question has open polarity, signalled by the fact that the alternative polarity variables are explicitly given.

Secondly, Bolinger criticises the argument that *whether* subordination indicates an alternative question interpretation. He claims that *if* is more common both cross-linguistically and in English than *whether*, and that there are differences between the two. Many languages do not have a word that is identifiable as being composed of a *wh*-element and 'either', and have a question word that is much more similar to *if*. English, too, has *if* as an option, and Bolinger (1978) notes that *if* is the more frequent question subordinator. Furthermore, *if* and *whether* are not always interchangeable, which Bolinger takes as evidence that not all polar questions are 'or not' alternatives.

Finally, Boliger argues from the intonation pattern of questions that alternative questions are coordinations of yes/no questions rather than yes/no questions being derived from alternative questions. In fact, this suggestion is to a great extent compatible with the analysis proposed in this thesis. Huddleston (1994) argues for the same interpretation. He points out that embedded polar questions with overt *or not* behave like alternative questions, rather than like polar questions. He claims that this shows that they are distinct from polar questions and, therefore, that polar questions are not derived from alternative questions. For instance, as noted in Chapter 4, he shows that embedded polar questions can occur under predicates like *doubt*, and alternatives, including those with *or not* as the alternative, cannot:

(807) I doubt whether you are ready.

(808) *I doubt whether it is a boy or a girl.

(809) *I doubt whether you are ready or not.

(Huddleston 1994: 417-8)

Conversely, alternative questions (and those with *or not*) can occur with 'concessive adjuncts' but polar questions cannot:

(810) *I'm marrying her whether you like her.

(811) I'm marrying her whether you like her or hate her.

(812) I'm marrying her whether you like her or not.

(Huddleston 1994: 418)

The *whether* used in the concessive adjunct is the *wh* equivalent of conditional *if*: they are not embedded questions in the same way that conditional clauses with *if* are not embedded questions. Note that *if*, which can be substituted for *whether* in most contexts, cannot be used in any of (810)-(812).

6.2.5. *The relation between YNQs as disjunctions and alternative Qs*

I argue that polar questions are structurally similar to alternative questions and that in use they are distinguished chiefly by the possible answers they allow for. The question in (813) can be answered 'yes' or 'no' if it is a yes/no question, or with one of the two alternatives specified in the question if it is an alternative question:

- (813) A: Are you aged under 18 or in full-time education?
B: Yes/ No. (Yes/no question)
B: I'm under 18/ I'm in full-time education. (Alternative question)

There is also a difference in intonation, with English alternative questions having rising intonation on the first alternative and falling on the second, and yes/no questions having either falling intonation or final rise, but in either case a single intonational contour. These differences are a result of a single syntactic difference between alternative and polar questions: in the case of polar questions it is the polarity of the clause that is contrasted, whereas in alternative questions it is some constituent of the presupposed proposition. In §6.3 the syntax of disjunction is explored, and §6.4 examines the advantages of analysing questions as composed of a disjunction of a proposition and its negation. §6.5 discusses some implications and predictions made by this analysis, and in Chapter 7 these predictions are tested.

6.3. The syntax of disjunction

I follow Kayne (1994), Wilder (1997) and Johannessen (1998) in proposing a structure of disjunction in which the two conjuncts are located in the specifier and complement positions of a phrase headed by the disjunction.

Kayne (1994) maintains that the existence of conjunctions as heads is a subcase of the more general principle that heads are required in order that syntactic structure be antisymmetric. He points out that sentences such as those in (814)-

(815), with a conjunction interpretation, lack an asymmetric c-command relation between the two conjuncts and are unlinearisable via the LCA (Kayne 1994: 11-12):

(814) *I saw [[the boy] [the girl]].

(815) *[[The girl] [the boy]] were discussing linguistics.

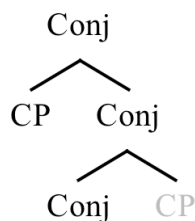
The presence of a head is necessary to ensure that the structure is antisymmetric, as in (816) (Kayne 1994: 12):

(816) [the girl [and [the boy]]]

The name of the phrase of which conjunction is the head has been variously termed BP (Boolean Phrase), &P, CoP (Coordination phrase), ConjP (Conjunction Phrase) and DisjP (Disjunction Phrase). As the analysis holds for coordination (*and*), disjunction (*or*) and adversative conjunction (*but*), as well as (presumably) all other conjunctions, I reject the name DisjP as too specific. BP, although accurate, is somewhat opaque, and I therefore adopt Conj(unction)P. This should not be taken as an endorsement of any particular analysis other than as outlined below; the convenience of the label is independent of the validity of the syntactic analysis.

The structure of conjunction that I assume is as in (817), where the second conjunct is not pronounced:

(817) [_{ConjP} [_{CP} first conjunct] [_{Conj'} or [_{CP} ~~second conjunct~~]]]



Johannessen (1998) retains the head-directionality parameter for other reasons, including the possibility of rightward specifiers in head-final languages, and therefore allows two possible structures ('Co' is the coordination):

(818) [_{CoP}[X] first conjunct [_{Co'} Co second conjunct]]
 [_{CoP}[X] [_{Co'} first conjunct Co] second conjunct]

She argues that the phrase inherits the features of the specifier conjunct by Spec-head agreement. She terms this 'unification' of features, which is either the process of feature-checking or a process whereby an underspecified element can inherit more richly specified features from the element with which it unifies. The conjunct in the complement position has no featural input, because it does not participate in the spec-head agreement relation. This unification takes place and the specifier's features are inherited by the phrase because 'conjunctions can be assumed to be lacking proper categorial features: they have a slot that must be obligatorily filled by such features, maybe in order to be interpreted at LF' (1998: 111). Rothstein (1992: 108) also assumes that conjunctions are heads but do not project category features. For polar questions, this means that the conjunction phrase inherits the features of the clause in its specifier (the non-elided clause), including [+V] (as CPs have the feature [+V]). In Johannessen's terms, under which a CoP[N] is the head of a NP, a CoP[Q] (conjunction phrase with the 'question particle' as head) is a CP.

In the foregoing discussion, I have assumed that the two conjuncts are clauses. This is consistent with a standard assumption about neutral polar questions: the question particle scopes over the whole clause and therefore takes the clause as its complement. However, it is possible that in fact the conjuncts might be PolPs, as argued by Yaisomanang (2012). They may also be TPs or even VPs, as it is almost impossible to distinguish a polar question in which the whole proposition is questioned from one in which the verb is questioned, if no other element is given narrow focus. In disjunctive constructions, what appear to be two non-clausal elements may indeed be conjoined:

(819) Was it *Clifford or Sydney* who turned out to have killed Myra?

However, Johannessen argues that the two conjuncts are always CPs, even when the conjuncts appear to be X⁰ elements. This requires that some material is elided, through either forward or backward deletion:

(820) John drinks beer and Mary ~~drinks~~ wine.

(821) John looked at ~~today's copy of the Times~~ and Mary read today's copy of the Times.

(Johannessen 1998: 178)

Johannessen cites Wilder's conditions on forward deletion: content identity, context identity and locality. Content identity means that the elided material must be identical to the antecedent, except for its phonology and morphosyntax. (822) is ungrammatical if *Mary* is the elided subject because the subject of the second clause is different from the subject of the first. (823) is grammatical when the verb *drink* is elided, even though it is not identical to *drinks* in the first clause, because the difference is morphosyntactic (Johannessen 1998: 179, adapted from Wilder 1997: 72):

(822) John came in and ~~John~~/**Mary* sat down.

(823) John drinks wine and his kids ~~drink~~/**drinks* Coca-cola.

Context identity is the requirement that the elided material be in the same structural position as its antecedent. (824) is ungrammatical because the elided material, although identical in form to its antecedent, differs in its structural position (Johannessen 1998: 179, adapted from Wilder 1997: 73):

(824) **The book pleased John and* ~~John~~ bought it.

Locality requires that the elided material be identified by the most local conjunct. In (825), *John* cannot be the elided subject because *Mary* intervenes between the antecedent *John* and the elided material (Johannessen 1998: 179, adapted from Wilder 1997: 74):

(825) John came in and Mary sat down and *John/Mary read a book.

Wilder further notes that backward deletion, in which the elided material is in the first conjunct, as in (821) above, requires that the elided material be right-peripheral in its clause, and that there be exact form identity between the elided material and its postcedent. In other words, the phonological and morphosyntactic differences permitted with forward deletion are not permitted with backward deletion.

Johannessen (1998) accounts for the apparent existence of coordination of smaller constituents than CP with an operation she calls 'share':

(826) *Operation share:*

If material above and/or below CoP attachment is deleted in one of the CPs in accordance with FWD and BWD [forward and backward deletion], the remaining material can be shared. The two CPs are rearranged into one CP by removing deleted material and inserting the CoP in the attachment position. The resulting structure must not violate X-bar theory.

(Johannessen 1998: 186)

In this way, she accounts for examples like (827), in which *begrüssen* assigns accusative case and *helfen* dative (Johannessen 1998: 180):

(827) Maria begrüßte und half dem/ *den Mann
 Mary greeted and helped the.DAT the.ACC man
 'Mary greeted and helped the man.'

This is a case of backwards deletion, with the object in the first clause elided under identity with the same object in the second. However, the two verbs assign different cases, and thus there is no strict form identity. If the phonological identity constraint on backwards deletion is respected, the elided object in the first clause has the wrong case: it has dative case, identical to the second clause. If the first, elided, object is assigned the correct accusative case, the identity constraint is not respected and the sentence should be ungrammatical. Johannessen therefore argues that Share takes place and case is assigned to the

object by the second conjunct *half*. German is OV, so the second conjunct is in the specifier and gives its features to the coordinate phrase, according to her analysis. Case checking takes place after the Share operation is complete, so that the structure is as in (828) (Johannessen 1998: 181):

(828) Maria [_{CoP} [_{Co'} [begrüsste] und] [half]] dem Mann

This is possibly the structure of alternative questions such as (829), in which the proposition that *it will be something* is assumed (in fact, that something will accompany the Steakhouse Grill for tea), but what is questioned is the complement of the copula. If this is derived from ellipsis, the full structure is as in (830) with conjoined CPs, and after Share the structure is as in (831). In an example such as (832), on the other hand, in which the conjoined constituents are CPs, Share presumably does not occur.

(829) Will it be chips or jacket spuds? (Birds Eye advertisement, 1982)

(830) [_{ConjP} [_{CP} will it be chips] [_{Conj'} or [_{CP} ~~will it be~~ jacket spuds]]]

(831) [_{CP} will it be [_{ConjP} [_{NP} chips] [_{Conj'} or [_{NP} jacket spuds]]]]]

(832) [_{CP} Does this Knowledge Graph let the computer understand what David Cameron is in the same way we do], or [_{CP} is it just a new, more complex algorithm]? (BBC online, 13/06/2012)

A question in which the final particle is in fact the disjunction would then have the structure in (833):

(833) [_{ConjP} [_{CP} Can I have the end piece of the roast pork] [_{Conj'} or [_{CP} ~~can I not have the end piece of the roast pork~~]]]?

A possible problem with this analysis is that content identity appears to be lacking: there is negation in the second clause that is not in the first. I suggest that this is possible because the full disjunct is elided. When a disjunct is partially elided, as in the examples Wilder cites, the elided part must be identical to its antecedent. This is because what remains is assumed to be relevant information.

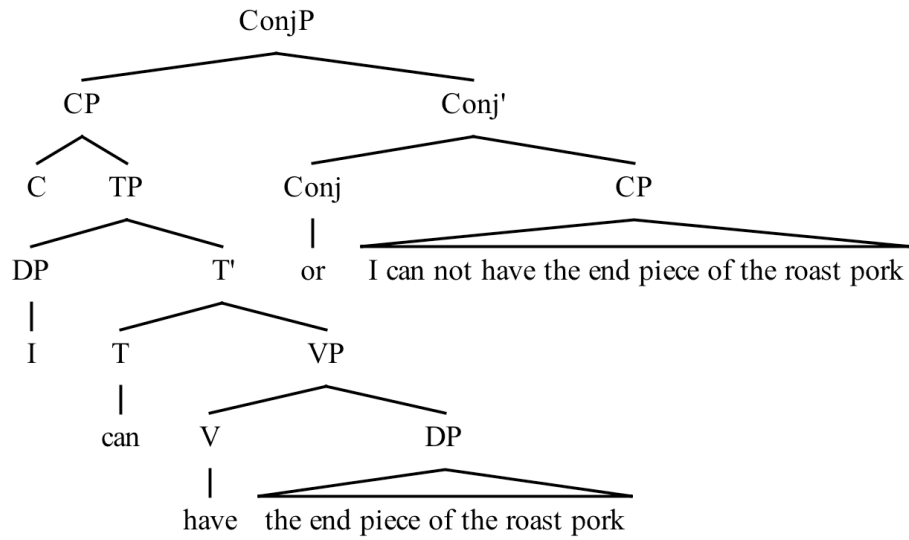
The pronounced constituents contrast with their counterparts in the first disjunct, and are the disjoined elements. In (830) above, for example, the pronounced material in the second disjunct *jacket spuds* contrasts with *chips*, the NP in the same structural position in the first disjunct. When the full disjunct is elided, nothing remains to contrast, and a ‘default’ interpretation takes over: essentially that of AnderBois (2011), described in §6.2.2 above. As AnderBois notes, the disjuncts expressed are the exhaustive, mutually exclusive list of possible options. In (834), *Juan* and *Daniel* are distinct, and the only two people who the speaker thinks can have drunk the atole (AnderBois 2009: 4):

(834) t-uy uk’ah le sa’-o’ Juan w’aa Daniel
 PFV-A.3RD drink DEF atole-DISTAL Juan W’AA Daniel
 ‘Juan or Daniel drank the atole.’

When the disjunct is not expressed, in an utterance in which the polarity is the disjoined element, as it is in polar questions, the disjunct is interpreted as the exhaustive list of propositions that are not affirmative P (the ‘set complement’ of P), which is to say $\neg P$.

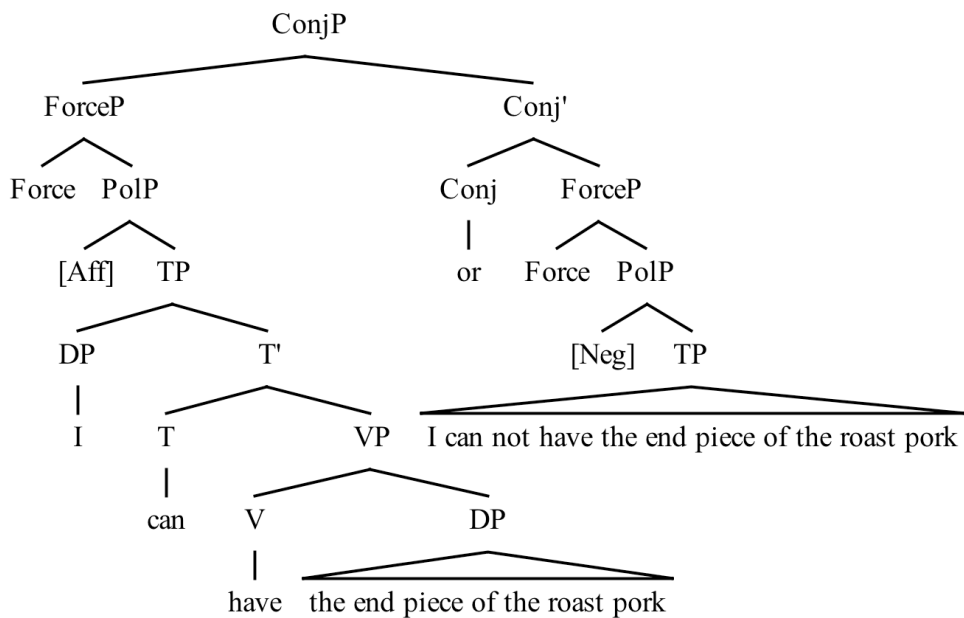
On this analysis, the structure of polar questions is therefore as follows. In a polar question in languages such as those discussed in this thesis (those with final question particles and VO order), the structure is that of the disjunction of two clauses:

(835)



The second clause is phonologically null, and interpreted as the negative equivalent of the first via the semantic mechanism outlined above. The disjunctive element is stranded clause-finally, giving it the appearance of being a final question particle. Alternatively, the complement of PolP is deleted, and the material above it, including the negative polarity, remains overt. This is straightforward deletion under identity as discussed in §6.3 above, and gives a 'question particle' that is the disjunction and negation:

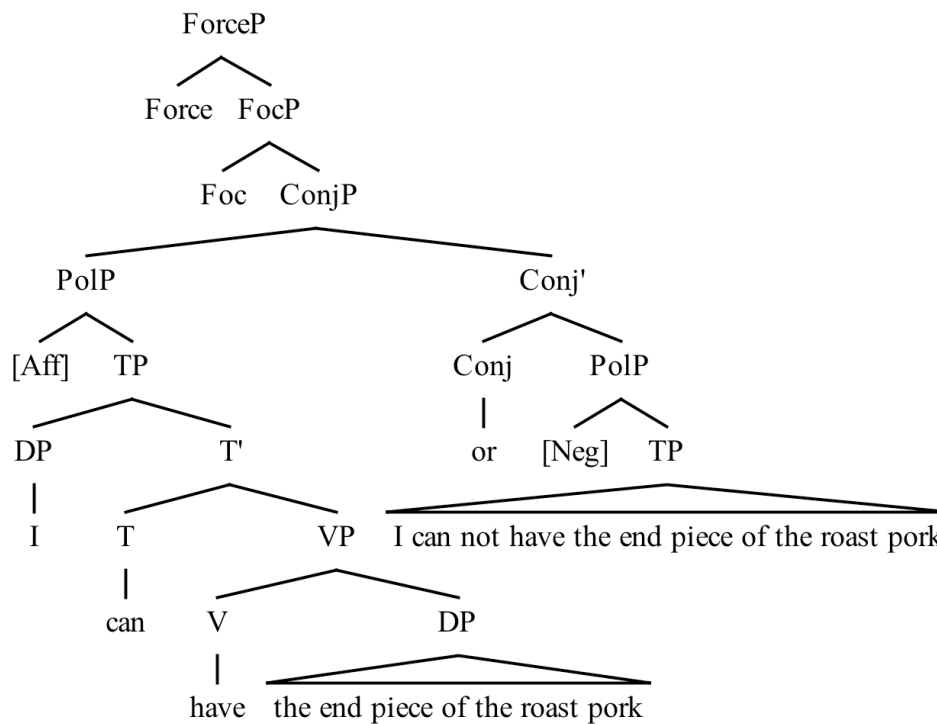
(836)



It is also possible that the disjoined constituents could be two Polarity phrases, if one does not assume that disjunction is always clausal. Yaisomanang (2012) argues for this analysis for Thai. An observation owed to Anders Holmberg (p.c.) is that this could account for the availability of some particles and not others in embedded questions. If the conjoined phrases are CPs they have the full set of heads found in main clauses, including Force, and are not embeddable. In that case, the particle would not appear in embedded clauses. If, however, the conjoined phrases are PolPs, the ConjP can be embedded. Assuming that Thai has conjoined PolPs in questions, this allows for the otherwise unexpected appearance of the question particle in embedded questions.

If the conjunction is of full clauses, then when just the complement of PolP is deleted, one would expect an overt declarative Force marker to be present in both clauses (if the language has such a Force-marking system), and Focus should be available to both clauses. If two PolPs are disjoined, the second Force element should be absent, as the Force head in the second disjunct is above the scope of the disjunction. Similarly, Focus should be unavailable in the second disjunct:

(837)



6.4. Advantages of this proposal

6.4.1. *The FOFC violation*

This analysis explains why particles can apparently violate FOFC, if they are in fact initial in an elided clause. The constraint applies only to final heads within an extended projection, not to initial heads. Specifically, it states that a head within an extended projection cannot have the movement diacritic \wedge , which causes roll-up comp-to-spec movement, if a head below it in the same extended projection does not have it. In this case Conj^0 inherits the features of CP, as argued by Johannessen (1998), including [+V]. [+V] is not associated with the movement feature, meaning that its complement remains in its position following the head, and so Conj^0 cannot inherit it.

6.4.2. *Embedded questions*

It also explains the inability of question particles to subordinate questions. True question particles are expected to function like English *if* and provide the embedded question's open polarity (though not illocutionary force, in the case of embedded questions). However, although the head inherits the features of the CP in its specifier on Johannessen's analysis, and therefore is in effect a CP, it is a matrix CP. The question particle cannot act as a subordinator because it is not a C-element; it is the disjunction. The disjunction can join two clauses but one is not subordinate to the other. Johannessen (1998) provides some tests to show that this is true, involving agreement, moveability, semantics, and like categories. Those particles that can appear in embedded questions require some other subordinating element to co-occur, as in Estonian:

(838) *ma küsisin, ta tuli või/vä
I ask.1SG.PAST she come.3SG.PAST Q

(839) ma küsisin, et kas ta tuli või/vä
I ask. 1SG.PAST that Q she come. 3SG.PAST Q
'I asked if she came' (Anne Tamm, p.c.)

The particle is permitted to *occur* in embedded questions, in its usual function of marking the disjunction of the following negative clause. Examples are given here in English to represent languages which use this type of question particle:

(840) The policeman asked me if I had seen anything suspicious or I ~~had not~~
~~seen anything suspicious.~~

It can also be present as the disjunctive particle more generally, as in (841), in which it coordinates two questions, each with their own question particle *if*:

(841) The policeman asked me if I would come quietly or if I was going to make
a scene.

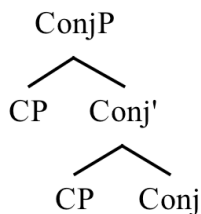
What is not permitted is for the disjunction to subordinate the embedded clause:

(842) *The policeman asked me I had seen anything suspicious or I had not seen anything suspicious.

6.4.3. *Verb patterning*

The fact that these question particles do not conform to the expected word order patterns (Greenberg 1966) noted in Chapter 2 is also explained by this proposal. In VO languages, heads are expected to precede their complements, and this is exactly what we find. It is argued above that conjunctions head a ConjP, and the two clauses are in the specifier and the complement position. The second clause, elided in questions, follows the head, as expected. This makes the converse prediction that in OV languages, where the particle is expected to follow its complement clause, the elided clause should precede the disjunction/question particle.

(843) [ConjP [CP] [Conj' [CP] Conj]]



This is not the case for Korean or Japanese. It is difficult to tell with questions, as it is not possible to ask the ‘non-elided’ form of the question in Japanese with both a positive and negative clause expressed overtly. Instead, such an utterance is interpreted as two questions, and has a correspondingly insistent tone if the particle is attached to both clauses. We can examine standard instances of the disjunction, and it is clear that the disjunctive particle does not follow its complement, as it occurs between the two disjuncts. It is possible to use *ka* ‘or’ finally, but it is optional, and the *ka* following the first disjunct is obligatory (cf. French, where it is possible to include an extra initial *ou* to give the meaning ‘either...or’). In Korean, too, the disjunction occurs after the first disjunct, not both (Han & Romero 2004: 543):

(844) Chelswu-ka [khephi-na cha-lul] masi-ess-ni?
 Chelswu-NOM coffee-or tea-ACC drink-PAST-Q
 'Is it the case that Chelswu drank coffee or tea?'

However, this is likely to be due to a property of disjunction more generally. Zwart (2009) analyses conjunction in a 214-language sample. He points out that with one co-ordinator ('monosyndetic' co-ordination) and two co-ordinated elements, there are three logically possible arrangements (2009: 1594):

(845) & A B
 A & B
 A B &

However, the first of these, & A B, does not occur according to Haspelmath (2007: 7), leaving only the types Zwart calls initial (A & B) and final (A B &). In fact, he argues that 'true' conjunctions are 'invariably of the initial type' (2007: 7). Those that appear to be final are of two kinds: ones that are actually initial, and ones that are not true co-ordinators.

Apparently-final conjunctions are those such as the Latin conjunction *-que*, which attaches to the first word of the second conjunct as a suffix. Where the second conjunct is a single word, this gives the order A B &:

(846) arma virum-que cano
 weapon.PL.ACC man.SG.ACC-and sing.1SG.PRES
 'I sing of war and of a man.' (Vergil, *Aeneid* I.1, cited in Zwart 2009: 1594)

Where the second conjunct consists of more than one word, it can be seen that the co-ordinator does not follow the second constituent; it appears in second position within that constituent, as a suffix on the first word:

(847) ingenia fecunda totius-que naturae
 mind.PL.ACC fertile.PL.ACC all.SG.GEN-and nature.SG.GEN
 capacia
 grasping.PL.ACC
 'minds that are fertile and able to grasp the entire universe.'
 (Pliny the Elder, *Natural History* II.190, cited in Zwart 2009: 1594)

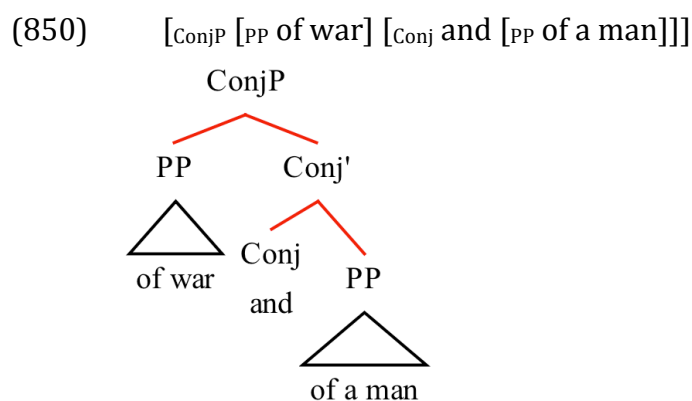
Zwart therefore counts this type of conjunction, of which he counts thirteen examples in his sample, as actually an initial type ('second-position initial'). This contradicts Haspelmath (2007), who regards this type of conjunction as postpositive as opposed to prepositive.

Of those conjunctions which are final but not 'true' conjunctions, Zwart notes that there are comitative conjunctions (which mean 'with') and summary conjunctions (which list all conjuncts and then group them as one identity) (Zwart 2009: 1594, from Bora):

(848) *Comitative:*
 Péedoró-mútsi-kye Jóáá-*ma* ájtyúm#be
 Pedro-DU-ACC Juan-*with* see.1SG
 'I see Pedro and Juan.' (Thiesen, 1996:75)

(849) *Summary:*
 Péedoró-o Jóáá -a' Perípe-é *éhdume* péé téhullévu
 Pedro-RED Juan-RED Felipe-RED *this quantity* go away
 'Pedro, Juan, and Felipe went away.' (Thiesen, 1996:75)

If these facts are taken into consideration, 'true' conjunction is always head-initial with a structure as in (850), with the conjunction as head of a ConjP, the first conjunct as its specifier and the second as its complement, as outlined in §6.3 above:



There are no languages, according to Zwart, with the FOFC-violating structure in which the conjunction is final, with head-initial immediate constituents. In the

example above, this would mean a head-final ConjP and the conjoined PPs, or at least the one in the complement position, would be initial. The lack of the first logically possible order given in (845), &AB, might suggest that the gap is independently impossible due to the structure of conjunction. If the structure given in (850) is the correct analysis of conjunction, then one conjunct must be in the specifier of ConjP, and there are argued to be no rightwards specifiers (e.g. Kayne 1994, Whitman 2008). There is, however, no such restriction on the conjunction appearing head-finally, or following the second constituent, rather than the first word of the second constituent, as in Latin, but it does not. There appears to be some independent requirement for conjunctions to occur between the two conjuncts.

6.4.4. *Phonological effects*

Recall from the discussion in Chapter 3 that Simpson & Wu (2002b) appealed to a clause-movement argument to explain otherwise puzzling phonological data from Taiwanese: the final complementiser undergoes tone sandhi, which final elements do not normally do. I rejected the idea of clause-movement for final question particles as inconsistent with FOFC, but noted that the analysis of such particles as clause-initial disjunction also accounts for the tone sandhi facts. The particle forms a tone sandhi domain with the following clause, rather than with the previous clause. I have been unable to ascertain whether the question particle, *bo*, also undergoes tone sandhi in the same way (and examining *kong* is outside the scope of this work), but if it does, it is readily explicable as a result of its tone sandhi domain.

6.5. Implications and predictions

6.5.1. *What marks question force and polarity?*

Following the analysis of questions proposed in Chapter 5, question particles should generally be supposed to encode question force or open polarity, or both.

However, final particles in VO languages, which I argue are not true question particles, encode neither. It might therefore be expected that some other mechanism be used to mark questions, a likely candidate being intonation. Many of the VO languages that have final question particles do indeed also have rising intonation, and my prediction would be that these languages would behave much like Syrian Arabic in terms of using intonation to mark questions. However, many of them are tone languages, like Thai, Chinese and Vietnamese, and so use intonation very differently. Thai has no intonational contrast between declarative and interrogative sentences, with questions indicated solely by the use of final *mǎy*, which is here argued (following Yaisomanang 2012) to be the disjunction as outlined above.

A fact that is taken into account in Chapter 7 is that there is a tone change on the particle when it is used as the question particle. Following the analysis in Chapter 5, this tone may indicate open polarity. Alternatively, we must say that in some languages, questions are not syntactically marked. This is somewhat radical, perhaps, but there is no requirement that all illocutionary force types are marked in the syntax in all languages. Many of the illocutionary types listed in Austin's (1962) and Searle's (1975) taxonomies of speech acts are not grammatically encoded, and indeed this was Austin's point: the purpose of an utterance is not linked to its form. A question may function as a question without having the form of a question, and it is only a step further to say that a language lacks such a sentence type.

6.5.2. *Why can other particles mark embedded questions?*

FOFC predicts how languages change, namely that any change must occur in a way that does not violate the constraint, as discussed in Chapter 3: §1.3. Specifically, any change from head-initial to head-final must occur bottom-up, beginning with the lowest head in the EP. If it begins at the top, a structure that violates FOFC is immediately created with a head-final phrase dominating a head-initial phrase. FOFC thus prevents final question particles in VO languages

from being reanalysed as complementisers because this would produce a FOFC-violating structure. However, where the particle is initial, or final in an OV language, no such violation occurs as a result of the reanalysis of the particle as a C head. The particle therefore begins as a disjunction of the proposition, or an elliptical clause requesting that the hearer identify the proposition as true or not true, and is either reanalysed on analogy with other complementisers or is not.⁹³

6.5.3. Predictions arising from analysing final question particles as disjunctive elements

We should see different behaviour from those particles that are reanalysed as C elements, compared to those that are not. For example, we would expect that particles in OV languages and those that are initial in VO languages should be less restricted than VO...Q particles in the contexts in which they can occur. Ten predictions are listed below that follow from this analysis.

Embedded questions

As discussed in section 6.4.2 above, disjunctive elements are not able to subordinate indirect questions, although they may appear within such questions as the disjunction. Grammaticalised question particles, on the other hand, are likely to be able to do so, although the discussion at the end of Chapter 5 should be taken into account: some particles may mark question force and be independently barred from embedded questions.

Negative questions

The structure for questions that I support is that of the disjunction of a positive and negative element in which the negative element is elided, and where the disjoined elements may be clauses or PolPs, as discussed in Chapter 7. For this

⁹³ Although this does not account for second position particles, Anders Holmberg (p.c.) notes that these are often focus markers rather than question particles (e.g. Bulgarian, Latin, Finnish). In any case, I leave this issue for future work.

reason, a particle that is really the disjunction should not occur in negative questions:

(851) *Isn't he coming or not?

It is possible that the negative clause could come first and the positive clause be elided, but this is unlikely due to the negative clause being the more marked member of the set. Similarly, it is odd to say in English #*Isn't he coming or is he?*. A particle that is reanalysed as a C element should be able to occur in negative questions, a development Aldridge (2011) notes in Mandarin, for instance.

Alternative questions

Just as it is impossible in English to ask **Would you prefer rice or chips or not?*, it should be impossible for the disjunction to mark an alternative question in VO...Q languages. The disjunction is between the polarity of the clauses, but an alternative question disjoins constituents such as DPs. Note that such questions may superficially be possible, but the answer to them will be *yes* or *no*, rather than one of the alternatives: that is, the disjunction forces the polar question reading. If the particle is a true question particle, and no longer the disjunction, this prohibition may disappear. Some question particles may also be infelicitous in alternative questions if they mark open polarity, however, as alternative questions have affirmative polarity.

Wh-questions

For similar reasons, disjunction particles are not expected to mark *wh*-questions. These question some constituent, not the polarity of the sentence, and the two are incompatible: **Who are you or not?* There need not be any such incompatibility with grammaticalised particles, although the same issue about open polarity remains. Cheng (1991) notes that many languages have a polar question particle and no overt *wh*-particle, meaning that the lack of a particle in

wh-questions is not necessarily indicative of the presence or absence of disjunction.

Biased questions

As noted in section 6.2.4, alternative questions have to be neutral to be felicitous. This indicates that disjunctive elements should be ungrammatical in biased questions where the questioner is fairly sure of the answer. However, it is possible that the deletion of the second clause allows for bias towards a positive answer. An attested English example that provides a comparable situation is in (852), where the asker certainly expected a positive answer, but employed the disjunctive *or*:⁹⁴

(852) Did you have a good holiday, or?

NPI licensing

NPIs must be licensed in order to be grammatical, and are not permitted in affirmative contexts. They are permitted in questions, and a fully grammaticalised question particle should act as an NPI licensor. One that is actually a disjunction should not license NPIs, as it does not c-command the NPI located in its specifier. I would expect sentences containing an NPI to be ungrammatical in VO...Q languages.

Intonation

If the particle is the disjunction, some other question-marking strategy might be present, such as intonation. However, as AnderBois (2011) shows, it is perfectly possible to derive a question interpretation without any overt marking device. Gunlogson (2001) and the other research summarised in Chapter 5: §2.1.2 discusses a wealth of empirical data that suggest that question intonation is not

⁹⁴ I do not speculate here about whether the speaker used the disjunction *or* as a particle or simply 'tailed off'. Cf. Mulder & Thompson (2008) i.a. on final *but* in Australian English.

necessary for successful question communication and is very often not present in questions.

Optionality

If the question is marked by some other device, such as intonation, it is possible that the question particle is optional. This would be the case only for those languages which encode question force/open polarity with intonation, however: in some languages questions are a function only of the semantic interpretation discussed by AnderBois (2011), and in these languages the disjunction may be obligatory. Furthermore, those languages with a grammaticalised question particle may also have an optional particle for other reasons (such as also having a special question intonation).

Overt form

It should be possible, if the particle is the disjunction, to ask the 'non-elided' form of the question: *Are you coming or are you not coming?*, although doing so may have certain pragmatic effects, as in English. If the particle is grammaticalised, this may no longer be possible, as the particle is expected to lose its disjunctive ability, and some other disjunction may be required to perform this function.

Disjunctive counterpart

A particle which is a disjunction might be expected to have a homophonous disjunctive counterpart. A grammaticalised particle may have diverged very far from its origin as the disjunction and the relation may be less clear. As illustrated in section 6.2.1 above, there is often homophony, but this is not the case for all VO...Q particles. It is possible that the phonological changes associated with grammaticalisation can take place without full reanalysis.

6.6. Conclusion

This chapter has argued that final polar question particles in VO languages are instances of the disjunction and provided an analysis of such constructions. Such an argument has certain advantages, which I discussed in section 6.4, and makes testable predictions, given in section 6.5. In this work, I am unable to examine historical data, but a further prediction is that grammaticalised question particles should undergo the sort of processes that we see in grammaticalisation more generally: phonological reduction, semantic bleaching, and changes in syntactic properties. For example, see Munaro & Poletto (2005: 254), who argue just this for Italian sentential particles.

The predictions made in section 6.5 are tested in Chapter 7, when the analysis outlined here is applied to a VO...Q language, Thai, and compared with OV...Q languages.

Chapter 7. Question Particles in Thai

This chapter shows how the proposal advanced in the previous chapter works in practice for a VO language with final question particles. Thai is one such language, and as discussed in Chapter 6 its question particle resembles the negative particle. It is thus a good candidate for analysis, and should be regarded as a ‘case study’. Other VO languages with final question particles are predicted to conform to a similar analysis. In section 7.2, two OV languages with final particles (Turkish and Japanese) are examined. As stated at the end of Chapter 6, they are predicted to behave differently from the VO...Q languages and the predictions given there should not hold for them, if the particle has been reanalysed as a ‘real’ question particle in the C domain.

7.1. Thai

7.1.1. Thai question particles

As noted in Chapter 2, Thai marks YNQs with one of several obligatory final particles, including those repeated in (853) (Iwasaki & Ingkaphirom 2005: 279):

(853) mǎy
rǔu
rǔu-plàaw
rǔu-yaŋ

(854) Examples of *mǎy* and *rǔu-plàaw* are given in (855) and (856):⁹⁵

(855) nát khàp rót mǎy/ máy
Nath drive car Q
Will Nath drive/ Does Nath drive?

⁹⁵ Thai data given in this chapter is provided by Somphob Yaisomanang (p.c.), unless otherwise stated.

- (856) nát khàp rôt rǎu plàaw
 Nath drive car Q
 Does/ Did Nath drive?

These particles are answered with the verb in the question and can be considered the ‘basic’ question particles in Thai. In addition to these particles, there are several other particles (or tags, according to Iwasaki & Ingkaphirom 2005), which are formed from one of the basic particles *mǎy* and *rǎu* and mark biased questions. These are given in (857) and (858) (Yaisomanang 2012):

- (857) *Combined particles with mǎy:*

chây-mǎy
 thùuk-mǎy
 ciŋ-mǎy
 nêε-mǎy

- (858) *Combined particles with rǎu:*

rǎu-mây
 rǎu-plàaw
 chây-rǎu
 thùuk-rǎu
 ciŋ-rǎu
 nêε-rǎu
 chây-rǎu-mây
 thùuk-rǎu-mây
 ciŋ-rǎu-mây
 nêε-rǎu-mây
 chây-rǎu-plàaw
 thùuk-rǎu-plàaw
 ciŋ-rǎu-plàaw
 nêε-rǎu-plàaw
 mây-chây-rǎu
 mây-thùuk-rǎu
 mây-ciŋ-rǎu
 mây-nêε-rǎu

These combined particles are also sentence final, as illustrated in (859):

(859) nát khàp rôt chây mǎy
 Nath drive car Q
 Is it right that Nath drives?/ Nath drives, doesn't he?

The particles in (857) are confirmation particles, used when the speaker has some expectation of the answer because they have some information which leads them to believe that the expected answer is the case. Those in (858) are also confirmation particles, but are used when the speaker has some assumption or expectation that they seek to confirm.

Yaisomanang (2012) follows Peyasantiwong (1981: 53) and terms *mǎy* and *rǎu* the two 'basic' particles.⁹⁶ These are the negation with a different tone (namely that of the disjunction) and the disjunction respectively, and he analyses their syntax as such. He claims that a covert *rǎu* connects two PolPs or other focussed constituents, the second of which is headed by the negation *mây*. The question that is actually pronounced is a 'reduced question' on his analysis, leaving the negation sentence-finally. He argues that a further reduction provides the A-not-A question construction (Yaisomanang 2012):

(860) khàp mây khàp
 drive NEG drive
 'Does (he) drive?'

The association of the question particle with the negation, he argues, is the reason why there is a strong constraint against *mǎy* appearing in a negative question (Yaisomanang 2012):

(861) nát khàp rôt mǎy/máy
 Nath drive car Q
 'Nath drives, or not?'

(862) *nát mây khàp rôt mǎy/máy
 Nath NEG drive car Q
 'Doesn't Nath not drive?/Nath doesn't drive, or not?'

⁹⁶ Yaisomanang counts a particle as basic if 'it can stand alone after a clause to form a YNQ'.

Yaisomanang claims that the particle is composed of the negation and a covert disjunction, with the meaning ‘or not’. The disjunctive feature introduced by the covert *rǎu* joins two PolPs that must have differing polarities. The negative word *mây* prevents the question particle *mây* from marking a question because the unpronounced second clause is negative, so the pronounced clause must be affirmative. Yaisomanang analyses the underlying form of the question in (861) as in (863):

(863) *nát* *khàp rôt* *rǎu* *mây khàp* *rôt*
 Nath drive car or NEG drive car
 ‘Nath drives a car or Nath does not drive a car.’

In fact, Yaisomanang analyses all of the particles as having disjunction as part of their meaning. This disjunction is overt in *rǎu-plàaw* ‘or empty’ (meaning ‘or not’), *rǎu-mây* ‘or not’ and all of the particles in (858). It is covert in *chây-mây*, *thùuk-mây*, *ciη-mây* and *nêε-mây*. These are analysed as *chây-(rǎu) mây* ‘right (or) not’, *thùuk-(rǎu) mây* ‘true (or) not’, *ciη-(rǎu) mây* ‘real (or) not’ and *nêε-(rǎu) mây* ‘sure (or) not’. However, these particles can appear in negative questions, and as discussed above are more like tags in their use. Such examples indicate that they should not receive the same analysis as *mây* and are rather ‘outside’ the main clause.

This is supported by the two types of answer available in Thai. The foregoing discussion distinguishes two classes of question particle: one with the meaning ‘or not’ and the other with the meaning ‘true or not true’ (or similar). The first type is answered by repeating or negating the verb, as in (864), and the second by repeating or negating the verbal adjective used in the question particle, as in (865) (Yaisomanang 2012). This indicates that the question is in fact just the ‘true or not true’ tag:

(864) nát khàp rít mǎy
 Nath drive car Q
 'Does Nath drive?'

khàp/ mây khàp
 drive NEG drive
 'Yes/No.'

(865) nát khàp rít chây-(rǎu) mǎy
 Nath drive car Q
 'Nath drives, doesn't he?'

chây/ mây chây
 right NEG right
 'Right/No.'

This is consistent with the theory of questions adopted in this thesis, in which a question asks the listener to 'fill in' the value of a variable, and in the case of polar questions this means to say which of two options is the correct one. The answer is one of the two items connected by the disjunction, which in Thai may be a positive or negative verb, or a positive or negative verbal adjective.

This analysis of Thai is similar to Aldridge's (2011) proposal for Mandarin, in that its question particle is derived from the negation, and there is covert disjunction involved in forming questions. She, too, notes that in earlier stages of the development of the question particle (i.e. before it became fully grammaticalised, on her account) it could not occur with negative predicates. Other observations made by Aldridge (2011) also apply to Thai. For instance, the well-known fact that using the particle in *wh*-questions gives an indefinite reading for the *wh*-element is parallel to the situation in Thai, where *wh*-words occurring with both types of question particle are interpreted as indefinites:

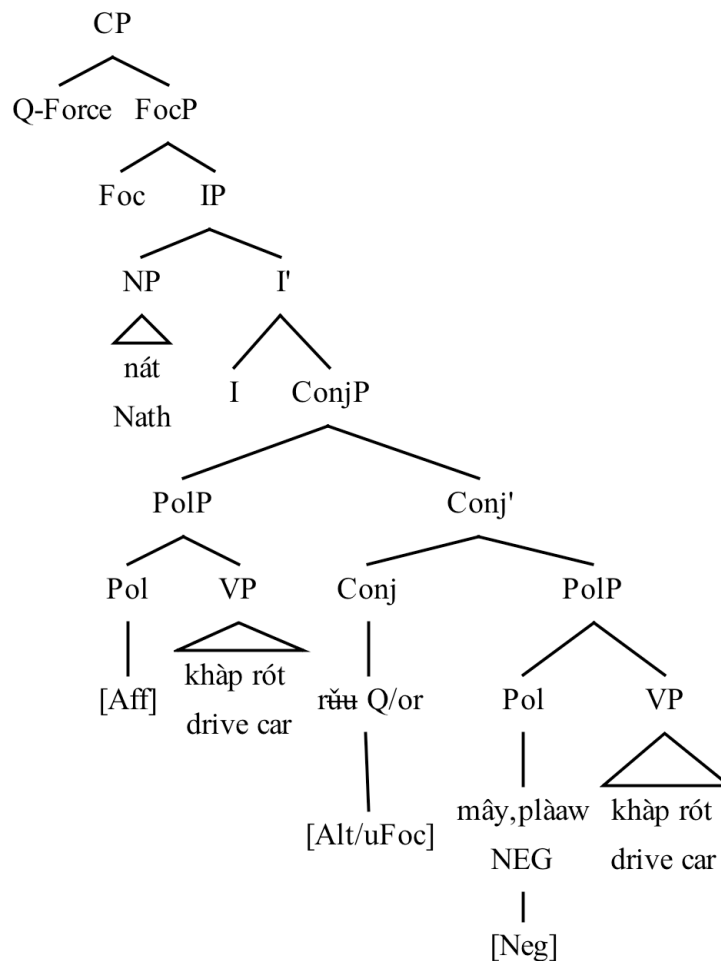
(866) nát chòp khray mǎy/máy
 Nath like who Q
 'Does Nath like anyone/someone?'
 *'Who does Nath like?'

(719) Nát kin aray chây mǎy/máy
Nath eat what Q
'Nath ate something, right?'
*'What did Nath eat?'

Aldridge notes that *ye* 'or' could appear with the negative existential verb that developed into the question particle, and Thai similarly can have an overt disjunction marker. This is because it has a number of question particles which can overtly include the disjunction *rǎu*, as listed in (858). The Thai particles are not derived from existential verbs, however, so there can be no parallel with the fact that the Mandarin particle began to occur with non-existential predicates over time. The 'true-or-not-true' type are verbal adjectives, but they do not negate the previous clause. Instead, they are themselves a combination of statement and negative counterpart.

Yaisomanang (2012) gives an analysis of Thai which is broadly consistent with Aldridge (2011):

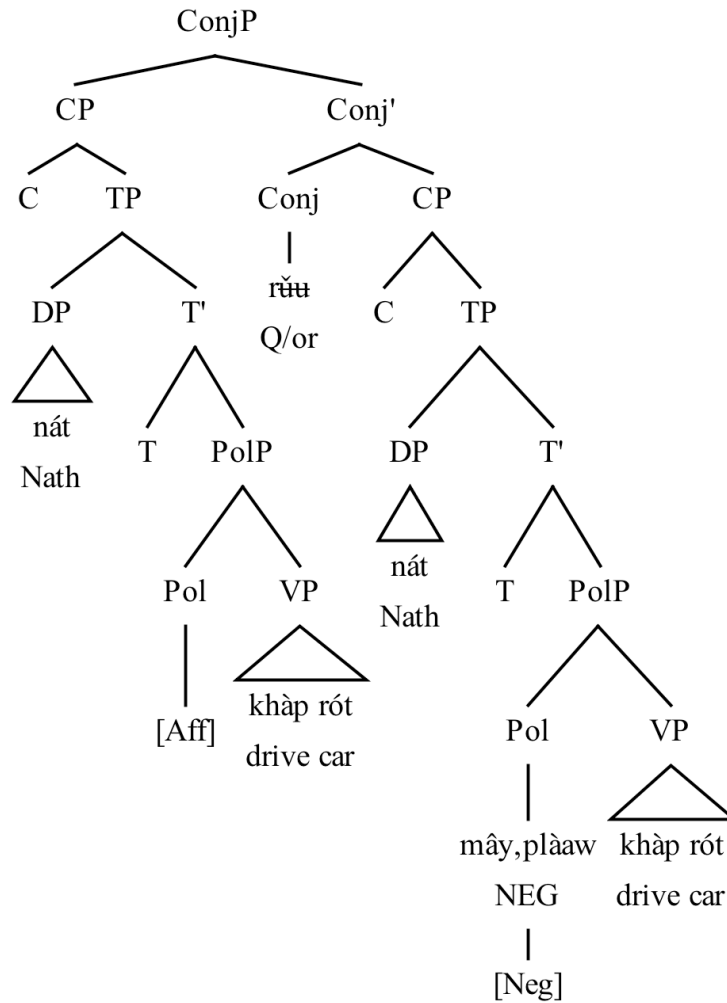
(867)



Yaisomanang assumes the conjunction of PolPs, one affirmative and one negative. He argues that there is an uninterpretable Focus feature on the conjunction head, which is probed and raises to FocP covertly. The polarity variable that constitutes this head is identified as the questioned information. This variable is bound by the Q-Force operator in C. His account differs from Aldridge's structure for Mandarin in that the particle *mǎy* is in Pol rather than *v*, as it is a the negation proper and not a verb. Nevertheless, the same process postulated by Aldridge can derive the question *Náth khàp rôt mǎy?* 'Does Nath drive?', by deleting the second VP under identity and stranding the negation in Pol. The crucial difference for Thai is that the particle cannot occur in negative questions, indicating that it is not grammaticalised: it remains the negation, not a true question particle.

It is possible to claim the structure for Thai shown in (868) with conjoined CPs rather than PolPs:

(868)



This structure lacks Q-Force and does not have the polarity variable that is focussed in (867). It is not a question in any syntactic sense, and must be interpreted by some other mechanism. On AnderBois's (2011) proposal for Yucatec Maya, the omission of the second disjunct provides this possibility as an empty disjunct is interpreted as the complement of the first. As a result, the sentence adds nothing to the commitment set of the speaker and is interpreted as a question. The structure in (868) has the benefit of allowing the conjunction of two complete propositions. Johannessen (1998) argues that all conjunction is between two CPs, and this structure is the simplest if one assumes her analysis.

However, to derive the correct word order the negation must raise, perhaps to FocP. If this is not syntactically a question, there is no motivation for this raising. I follow Yaisomanang in adopting the structure in (867).

The basic Thai question particle, *mǎy*, is therefore argued to be an instance of just the type of ‘particle’ proposed in the previous chapter: that is, one which is a stranded element in a disjunctive structure. The next section examines Thai more closely to determine whether the predictions made in Chapter 6 regarding such questions are true of this particular language.

7.1.2. *Testing the predictions*⁹⁷

In Chapter 6, several predictions were made that follow from the analysis of polar questions as the disjunction of a proposition and its negation:

- (869) *Predictions arising from equating the question particle and the disjunction:*
- a. The particle should not occur in embedded questions.
 - b. The particle should not occur in negative questions.
 - c. The particle should not occur in alternative questions.
 - d. The particle should not occur in *wh*-questions.
 - e. The particle may not occur in biased questions.
 - f. Particle questions should not license an NPI.
 - g. There may be a special polar interrogative intonation.
 - h. The particle may be optional.
 - i. It should be possible to pronounce the second disjunct.
 - j. The particle should be homophonous with the disjunction or negation (or both).

Thai, if its question particle is in fact the disjunction and the negation rather than a true question particle, should bear out these predictions. This section shows that, broadly speaking, this is the case.

⁹⁷ Thai data in this section are provided by Somphob Yaisomanang (p.c.) unless otherwise indicated.

Can the particles appear in embedded questions?

In a disjunctive construction both disjuncts are equal, with neither subordinate to the other. If the form of Thai questions is that of a disjunction, the particle should not be able to subordinate questions. Note that in English, it would be acceptable to have a disjoined negative *within* the embedded question; the restriction is against the disjunction having a subordinating function: *I didn't know whether the hospital would be closed or not*. In fact, all of the Thai particles listed above can appear in embedded questions. YNQs can be embedded under verbs that take a complement, such as *rúu* 'know' and *khaw-cay* 'understand'. Iwasaki & Ingkaphirom (2005: 288-9) give the examples in (870) and (871):

(870) mây rúu wâa loonᵇbaan cà pìt rú-plàaw
NEG know COMP hospital CM close Q
'I didn't know whether the hospital would be closed.'

(871) mây rúu mǎankan khun pen kaphó rú-plàaw
NEG know same 2 COP ulcer Q
'(The doctor said,) "I don't know if you've got a peptic ulcer or not".'

The examples in (872)–(874) (Yaisomanang, p.c.) show a true indirect question with the particles *mǎy*, *rúu plàaw* and *chây mǎy*:

(872) chǎn thǎam nát wâa kháw kin sôm mǎy/ máy
I ask Nath COMP he eat orange Q
'I asked Nath if he had eaten an orange/ if he would eat an orange.'

(873) chǎn thǎam nát wâa kháw kin sôm rúu plàaw
I ask Nath COMP he eat orange Q
'I asked Nath if he had eaten an orange.'

(874) chǎn thǎam nát wâa kháw kin sôm chây mǎy/máy
I ask Nath COMP he eat orange Q
'I asked Nath if he had eaten an orange/ if it was right that he had eaten an orange.'

This is also true of speculative questions, which are embedded in Thai (as in English):

(875) chǎn sǒŋ-sǎy wâa nát khàp rót dây mǎy/ máy
 I wonder COMP Nath drive car POT Q
 'I wonder if Nath could drive.'

(876) chǎn sǒŋ-sǎy wâa nát kin khâaw ìm rǎu plàaw
 I wonder COMP Nath eat rice full Q
 'I wonder if Nath ate his fill of food.'

(877) chǎn sǒŋ-sǎy wâa nók nǎawtaay chây mǎy/ máy
 I wonder COMP bird cold die Q
 'I wonder if it was right that the bird froze to death.'

At first sight, then, Thai appears to fail the first prediction. One potentially important fact here is the presence of *wâa*: it is glossed as a complementiser in (870) and (872)–(877), derived from the verb 'say'. It appears as a quotative marker with verbs of speech and cognition, including *bòok* 'tell', *phûut* 'speak', *thǎam* 'ask', *klàaw* 'state', *àthíbaay* 'explain', *khít* 'think', *chûa* 'believe', *daw* 'guess' and *rúu* 'know' (Iwasaki & Ingkaphirom 2005: 262):⁹⁸

(878) hěn kyay-khay kô phûut wâa khǎan yak
 see everyone LP speak say/COMP write difficult
 'I hear people say that (Japanese) is difficult to write.'

(879) àthíbaay dríŋ wâa mii alay
 explain drinksay/COMP have what
 'I explain what drinks we have.'

(880) khít wâa cà hǎa ɲaan tham thii-níi mâak
 think say/COMP CM look.for work do here more
 kwàa há
 than SLP
 'I think I will look for work here.'

As well as a complementiser, *wâa* may appear as a 'semantically weak' lexical verb meaning 'think' or 'say' (dependent on context):

⁹⁸ *Cà* in (880) is within the complement clause, but it causes the complementiser *thii* to appear optionally where it is otherwise not required and the two clauses are juxtaposed (2005: 256). *Kô* in (878) is a linking particle that can be placed before the second clause to 'show a functional linkage' between two clauses that would otherwise be juxtaposed with no complementiser (2005: 253).

(881) *kháy-kháy kô wàa man yùu nay saphàap thí-wâa*
 everyone LP say 3 stay in condition SBR
kháp-khêp
 narrow
 ‘Everyone said that they (=the workers) lived in very confined conditions.’

(882) *law kô mây lú cà wâa yaŋŋay*
 1 LP NEG know CM say how
 ‘I don’t know what to say.’

Wâa is used in all the examples cited here except for (871), which is direct speech. However, Yaisomanang (p.c.) states that it is possible to omit it from embedded polar questions, although it appears to be more natural to include it. While the situation is not absolutely clear-cut, and in some cases *mây* does appear to be able to embed questions, it is often true that another complementiser *wâa* is present. This can be observed in many of the languages discussed in Chapter 2 that required a separate question-embedding element. The partial ability of the question particle to mark embedded questions, however, is not something that I have a good explanation for. The structure in (867) provides an explanation for why the particle cannot mark embedded questions in general in this type of language: the polarity variable has to be bound by Q, in Force. Embedded questions lack a Force projection and therefore also lack Q. If the variable is not bound, the derivation crashes. As noted in Chapter 2, Thai is very unusual in being a VO language that allows embedded final question particles, and in fact it is the only one that I have been able to find.⁹⁹ Perhaps Thai simply does not have an overt question subordinator, although this too would make it unusual among the world’s languages. A more detailed analysis of this language and any other similar languages might shed more light on this problem.

⁹⁹ Willson (2005) states that the question particle can occur in final position in embedded questions in Marshallese, a VO language. However, I learnt of this fact too late to include discussion of it in this thesis.

Are the particles used to mark negative questions?

This section argues that the Thai particle cannot appear in negative questions because of its meaning ‘or not’. If the particle is equivalent to the disjunction, the elided clause must have the opposite polarity from the non-elided clause. Therefore, if the non-elided clause is negative, the elided clause must be positive. This entails that if the particle is the disjunction and negation (‘or not’), as is suggested for Thai *mǎy*, it should not be able to occur in negative questions at all. The negation in the second clause would give the ungrammatical underlying meaning in (883), contrasted with (884):

(883) *You don’t like spinach or not?
#You do not like spinach or you do not like spinach?

(884) You like spinach or not?
You like spinach or you do not like spinach?

(883) contrasts two clauses which are both negative, giving rise to an ill-formed question. There is no way to answer (883) with ‘yes’, meaning ‘yes, I like spinach’ (recall e.g. Holmberg’s (2012) analysis of yes/no replies as involving ellipsis of the clause under identity. (883) would fail to be answerable affirmatively because the resulting sentence would be the ill-formed #*Yes, I don’t like spinach*).

As discussed above, in Thai, the ‘or not’ question particle *mǎy* cannot be used in negative questions. This is consistent with its analysis as meaning ‘or not’:

(885) *nát mǎy khàp rót mǎy/ máy
Nath NEG drive car Q

The other question particles can be used in negative questions, including *rǎu plàaw*, which means ‘or not’ (literally ‘or empty’). This is perhaps unexpected but may be due to the meaning of the particle. The negative element of the particle is not the negation itself, but rather a metaphorical use of ‘empty’ that may reverse

the polarity of a negative proposition rather than negate an otherwise affirmative proposition.¹⁰⁰

(886) nát mây chòp dòk-bua rǎu plàaw
Nath NEG like lotus Q
'Doesn't Nath like lotuses?'

The 'true-or-not-true' particles are expected to be able to appear in negative questions, as no conflict arises when tags are used in negative questions. They should confer a bias, and this is indeed the case:

(887) sèt-tha-kít mây dii khên chây mǎy/ máy
economy NEG good ascend/ASP Q
The economy doesn't get better, right?

Are the particles used to mark alternative questions?

If the particle is equivalent to the disjunction of the negation, it should not mark alternative questions, although of course the disjunction itself is present. A tag question equally should not be able to appear in alternative questions, as there is no single proposition to question the truth-value of:

(888) *Do you prefer rice or chips or not?

(889) *You prefer rice or chips, isn't it/right/don't you?

Alternative questions are often ambiguous between the alternative reading and a yes/no reading:

(890) (In a Chinese restaurant, a diner announces a deep-seated fear of egg noodles.)
Waitress: Would you prefer rice or chips (instead)? (yes/no question)

(891) (In the same restaurant, another diner orders a dish that is accompanied by either rice or chips.)
Waitress: Would you prefer rice or chips? (alternative question)

¹⁰⁰ Yaisomanang (2012) suggests that a covert 'Is it because' is present in some negative questions with *rǎu plàaw*, meaning that there is no conflict of negation. The form of (886) would therefore be something like 'Is it because Nath doesn't like lotuses, or is it not because of that?'

In fact (889) above is acceptable with the tag 'don't you', but only if the question is interpreted as a yes/no question. It cannot be interpreted as an alternative question.

This ambiguity is resolved by context, by certain words (e.g. 'prefer' leans towards an alternative reading, although not necessarily), and principally by intonation in English, with an alternative question having rising intonation on the first and all non-final disjuncts, and a fall on the last disjunct (cf. Chapter 5 and references cited there). One important point to note is that an alternative reading is preferred where the two alternatives are salient: the alternatives are on the menu, in (891) above, or previously referred to in the discourse. A yes/no reading is preferred where the alternatives are new information such as new choices, in (890) above, or an out-of-the-blue question. In practice, it is often not necessary to disambiguate: a person asked an alternative question but who interprets it as a yes/no question is very likely to give fuller information after their yes/no answer, thereby answering both types of question at once. In (890), the diner is likely to answer *Yes please, I'll have rice/chips* or *No thanks*. Note that it is somewhat infelicitous for the diner to reply simply *Chips*, indicating that it is a yes/no question, just as it is highly infelicitous for the diner in (891) to answer *Yes please*.

This ambiguity means that it is important to ensure that an alternative question really is just that, by controlling the context and determining what the expected answer is. An alternative question marked with a final particle might become a yes/no question with the addition of the particle:

(892) Do you prefer De Niro or Pacino?
Pacino – I loved him in Dog Day Afternoon.

(893) Do you prefer De Niro or Pacino (out of everyone) *or not*?
No, I like Travolta the best.

In Thai, alternative questions are not marked with a question particle. The particle *rǎu* appears, but in its role as the disjunction, not the question marker. No other question particle is possible in an alternative question.

(894) nát àan nǎŋ-sǎu kaa-tuun rǎu nǎŋ-sǎu rian
 Nath read book cartoon or book study
 'Did Nath read a comic book or a textbook?'

nǎŋ-sǎu kaa-tuun/ nǎŋ-sǎu rian
 book cartoon book study
 'A comic book/A textbook.'

If a question particle is added to an alternative question, the question must be interpreted as polar:

(895) nát àan nǎŋ-sǎu kaa-tuun rǎu nǎŋ-sǎu rian mǎy/ máy
 Nath read book cartoon or book study Q
 'Did Nath read a comic book or a textbook?'

àan/ mây àan
 read/ NEG read
 'Yes/No'

(896) nát chòp dòk-bua rǎu dòk-kùlǎap rǎu plàaw
 Nath like lotus or rose Q
 'Does Nath like lotuses or roses?'

chòp/ mây chòp
 like/ NEG like
 'Yes/No'

(897) nát pay chiaŋ-mày rǎu kruŋ-thêep chây mǎy/ máy
 Nath go Chiangmai or Bangkok Q
 'Nath goes to Chiangmai or Bangkok, right?/Is it right that Nath goes to Chiangmai or Bangkok?'

pay/ mây pay
 go/ NEG go
 'Yes/No'

Are the particles used to mark wh-questions?

As with alternative questions, it is not possible to question the polarity of a *wh*-question because some other constituent is questioned. For this reason it is not possible to ask a question like **Who are you or not?* None of the Thai question particles listed above can be used in *wh*-questions. It is possible to use *rǎu* but it does not mark the utterance as a question: it signifies intimacy between the speaker and the addressee. This in itself is further confirmation that *rǎu* is not a question particle as such, but a ‘degree marker’ (in the sense of Li 2006) or other discourse particle. If a question particle is used in a *wh*-question, the interpretation of the *wh*-element is that of an indefinite (and the question is a polar question), as is the case for languages such as Mandarin:

(898) nát chòp khray mǎy/ máy
Nath like who Q
‘Does Nath like anyone/ someone?’

(899) nát pay thii-nǎy rǎu plàaw
Nath go where Q
‘Does Nath go somewhere?’

(900) nát kin aray chây mǎy/ máy
Nath eat what Q
‘Nath ate something, right?’

Can the particle occur in biased questions?

In English, biased questions are distinguished by their different intonation (as discussed in Chapter 5) by the optional addition of a tag, and by the answers they can receive. Biased questions in English cannot be answered with an answer particle that does not match the polarity of the main clause of the question:

(901) You didn’t want any of this ice cream, did you?
No/#Yes

(902) That hurts, doesn’t it?
Yes/#No

Note that it is possible to answer the questions in (901) and (902) with the ‘unexpected’ answer, but not with neutral intonation or without adding some extra content. The following exchanges are acceptable (where upper case indicates emphatic or contradictory intonation):

(903) You didn’t want any of this ice cream, did you?
Well, I did actually/Yes, I did/YES

(904) That hurts, doesn’t it?
Not really/No, it’s OK/Not that much/NO

Yaisomanang (2012) follows Santaputra (1980) and Peyasantiwong (1981) in treating *mǎy* as an open question particle, used when ‘the speaker does not presuppose the truth in a positive sentence or the falsehood in a negative sentence to which the question particle is attached’. A question formed with the particle *mǎy* can be answered *Yes* or *No* equally (to answer ‘yes’ in Thai the verb is repeated, and to answer ‘no’ it is negated), as in examples such as (895)–(897) above. It is marginally acceptable when used in a biased question, although Yaisomanang (p.c.) deems it ‘less natural’:

(905) ?nát wîŋ maa mǎy/ máy
Nath run ASP Q
‘Did Nath run? (because he looks very tired!)’

The more colloquial particle *rǎu-plàaw* also has no expected answer, and can behave like *mǎy*, but can also be used in biased questions:

(906) nát wîŋ maa rǎu plàaw
Nath run ASP Q
‘Did Nath just run? (because he looks very tired!)’

The ‘or not’ particles therefore appear not necessarily to form biased questions. The ‘true-or-not-true’ particles, on the other hand, are used in confirmation questions and give a bias towards the polarity of the sentence, as do tags in English:

(907) nát wŭŋ maa chây mǎy/ máy¹⁰¹
 Nath run ASP Q
 'Nath just ran, right? (because he looks very tired!)

This type of particle should be treated more like a tag. The fact that the 'basic' particle *mǎy* can appear in embedded questions could be taken as evidence that it is a question particle marking open polarity. This possibility is discussed in §7.1.3 below.

Can the question contain an NPI?

Further evidence for the suggestion that the particle is the disjunction would be the inability of this type of question to license a negative polarity item (NPI). NPIs are licensed only in non-veridical contexts, which in general terms means negatives and questions. The disjunction (like tags) cannot license an NPI in the sentence to which it attaches to form a question because it does not have scope over it: the scope of the particle is only over the second, elided, clause, not the first, pronounced, clause:

- (908) Has he arrived *yet*? [Interrogative]
 (909) He hasn't arrived *yet*. [Negative declarative]
 (910) *He has arrived *yet*. [Affirmative declarative]
 (911) *He has arrived *yet*, hasn't he? [Tag question]
 (912) *[[He has arrived *yet*] [or [not]]]? [Disjunction particle]

It cannot be assumed that the translation of an English NPI functions as an NPI in Thai or any other language; the class of expressions functioning in this way must be determined for each individual language, and some languages have none at all. Thai has what appears to be an NPI, *yaŋ* 'yet'. It can also mean 'still', so care must be taken to obtain the correct reading. In an affirmative declarative, *yaŋ*

¹⁰¹ *Mǎy* and *máy* are alternative forms of the particle (*máy* can be the phonetic realisation of the particle). From now on, I show only the *mǎy* form.

can only mean ‘still’, whereas in a negative declarative the NPI meaning ‘yet’ is licensed. The same is true of questions: *yaŋ* can have the NPI reading only in negative interrogatives, with all question particles:

(913) náat yaŋ kin khâaw (yùu) mǎy
 Nath still eat rice PROG/ IMPF Q
 ‘Is Nath still eating?’

(914) náat yaŋ sǎɔn (yùu) rǎu plàaw
 Nath still teachPROG/ IMPF Q
 ‘Is Nath still teaching?’

(915) náat yaŋ àan (yùu) chây mǎy
 Nath still teachPROG/ IMPF Q
 ‘Nath is still reading, right?’

(916) *náat yaŋ mây kin khâaw mǎy
 Nath yet NEG eat rice Q
 (Ungrammatical because *mǎy* cannot occur with negation.)

(917) náat yaŋ mây sǎɔn rǎu plàaw
 Nath yet NEG teachQ
 ‘Has Nath not taught yet?’

(918) náat yaŋ mây àan chây mǎy
 Nath yet NEG read Q
 ‘Nath has not read yet, right?’

This is consistent with both the suggestion that the ‘true-or-not-true’ particles are tags, and that the ‘or not’ particles are instances of the disjunction, as neither of these is expected to license NPIs.

Is there any special question intonation?

If the particle is not a true question particle and does not mark question force or open polarity, there may be some other way to mark questions, such as with a special interrogative intonation. As discussed in Chapter 5, many languages use intonation as the sole question marking device. However, Thai questions have the same intonation as declaratives and are distinguished only by the addition of

the question particle. This is not in itself problematic: interrogative intonation is not required in all questions, as was exemplified by the discussion of English and particularly Finnish and Swedish in Chapter 5. It is unusual in that it means that Thai appears to have no formal question-marker in main clause questions. According to AnderBois' (2011) account of question interpretation via the empty disjunct this is not impossible, but it is somewhat unexpected that a language would fail to encode one of the basic illocutionary act types.

It may be noted that the question particle *mǎy* and its phonological variant *máy* have different tones from the negation *mây*. Wakefield (2010), in his discussion of Cantonese SFPs, notes that some SFPs (between three and six, according to the authors cited there, including Leung 2005[1992] and Sybesma & Li 2007) are argued to be non-segmental lexical items associated with specific syntactic slots. Tones have also been proposed to be syntactic in some African languages. Based on the discussion in Chapter 5 on the role of intonation in the syntax, the difference in tone between the question particle and the negation could be argued to be the syntactic instantiation of question force/open polarity.

Are the particles obligatory in all types of question in which they are used?

Bolinger (1978) argues that it should be possible to add *or not* to questions with no change in meaning if they are semantically composed of a proposition and the disjunction of its negation. From this it follows that a question particle that is actually the instantiation of such disjunction/negation should be optional. This would also be the case if some other element was the question-marking device, leaving the disjunction/negation as an 'optional extra'. However, as noted above, there is no such other element for Thai. This latter point may be the explanation for the fact that the use of a particle is obligatory in all types of yes/no question. They are not used in the non-polar alternative questions and *wh*-questions, as noted in this section. Notwithstanding this, in every type of question that can logically be negated, they are obligatory. If the particle is not used, the utterance can only be interpreted as a statement. Example (855) above is repeated here as (919), and without the particle as (920):

(919) náat khàp rít mǎy/ máy
Nath drive car q
Will Nath drive/ Does Nath drive?

(920) náat khàp rít
Nath drive car
'Nath drives.'

As Thai lacks any other question marking (such as rising intonation), the question is not equivalent to English 'Is he nice or not?', but to English 'He is nice or not'. Without the disjunction/negation, the sentence is indistinguishable from the declarative. Thai lacks any question intonation and so the single means of marking the question is with the 'or not' construction. This may serve to render it obligatory.

Can the full, non-elided dual-clause form be used?

If the particle in fact heads an elided second clause, it should be possible to pronounce both clauses. This is possible in English:

(921) Have you read *The Time Machine*?

(922) Have you read *The Time Machine* or have you not read *The Time Machine*?

The two sentences are logically equivalent, although there is some difference in meaning. With an unpronounced second clause, the question is completely neutral, assuming neutral intonation. The sentence in (922) with pronounced second clause conveys some extra sense of urgency, impatience or other pragmatic function. Presumably because pronouncing this clause is unnecessary, it is marked and cannot be entirely neutral. One important point to note is that the English example above contains two disjointed questions, whereas the relevant structure in Thai is the disjunction of two declaratives because there is no other way to indicate a question. According to AnderBois (2011), a question formed with a disjunction is interpreted as a question precisely because the second disjunct is empty: it is understood to mean 'everything else apart from P'

and therefore render the utterance uninformative and pragmatically a question. It is possible that if the second disjunct is pronounced, it ceases to be a question and is interpreted as an (apparently) uninformative declarative. Such a declarative is comparable to English examples such as *He'll either win or lose*, where there is some implication of *and it doesn't matter much either way*, or possibly an implied question like *...so which is it to be?*

In Thai, it is possible to pronounce the second clause and, as expected, this is a statement rather than a question:

(923) náat khàp rít rǎu náat mây khàp rít
 Nath drive car Q/or Nath NEG drive car
 'Nath drives or Nath does not drive.'

The Thai 'or not' particles are expected to pattern like examples (921) and (922) above. The 'true-or-not-true' particles are not, as they have a disjunction within them, rather than being a disjunctive element heading a new clause:

(924) You have read *The Time Machine*, true or not true?

(925) ?You have read *The Time Machine*, true or you have read *The Time Machine* not true?

(926) ?You have read *The Time Machine*, true or not true you have read *The Time Machine*?

Is the question particle homophonous with the disjunction or negation?

If the particle is equivalent to the disjunction, it should resemble the disjunction or negation marker, although historical changes may obscure this connection, as in Mandarin.¹⁰² A relatively high number of languages do have a particle that is identical to or related to the disjunction/negation, as noted in Chapter 6. This applies also to languages in which the particle is not final, or to final particles in

¹⁰² Also note that if the particle is developed from a tag question, intermediate stages might be found in a language which is in the process of developing this type of particle, and in the historical forms of languages which have it. In these stages, the 'particle' should only be possible in questions without open polarity (e.g. biased and rhetorical questions).

OV languages, not only the FOFC-violating ones. This suggests that the structure of questions proposed here can be generalised, as indicated at the end of Chapter 6, to the claim that all questions have the form P or $\neg P$. However, in most languages the particle becomes a true question particle through grammaticalisation.

The Thai ‘or not’ question particles, as discussed above, are identical to their counterparts the disjunction *rǎu* and negation *mây*, differing only in tone (in the case of *mǎy*). The ‘true-or-not-true’ particles are so called because they mean just that, with an adjectival verb meaning ‘right’, ‘true’, ‘real’, ‘sure’ etc. in disjunction with the negative particle *mây*. Either the negation or the disjunction is usually unpronounced.

7.1.3. Summary and discussion

This section has examined the evidence of Thai with reference to the predictions generated in Chapter 6. In most cases, Thai provides evidence for the hypothesis that the question particle should be analysed as the disjunction. A summary table is given below:

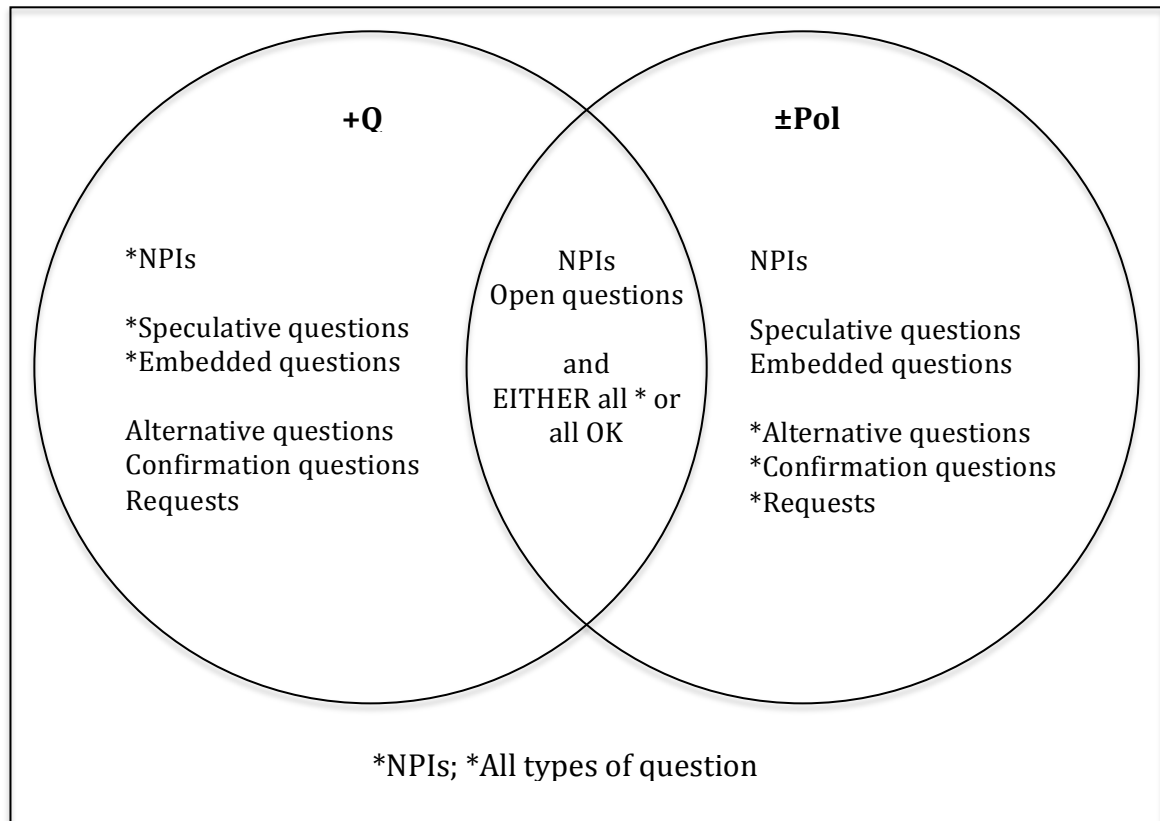
Table 15. Summary of the Thai evidence for the predictions arising from this thesis.

Prediction	Supported by Thai evidence?
The particle should not occur in embedded questions.	?
The particle should not occur in negative questions.	Yes
The particle should not occur in alternative questions.	Yes
The particle should not occur in <i>wh</i> -questions.	Yes
The particle may not occur in biased questions.	?
Particle questions should not license an NPI.	Yes
There may be a special polar interrogative intonation.	?
The particle may be optional.	No
It should be possible to pronounce the second disjunct.	Yes
The particle should be homophonous with the disjunction or negation (or both).	Yes

Table 15 shows that for six of the ten predictions, Thai provides supporting evidence. For the other four, only one is contradicted outright: the Thai question particle is not optional. Even this prediction is not absolute evidence against the hypothesis, because the obligatory nature of the particle may be determined by the fact that there is no other question-marking strategy. Although there is a tone change, the change is marked only on the particle itself, meaning that it is still required to indicate a question. The three predictions that are unclear are indicated with a question mark. In each case, the Thai data seem to falsify the hypothesis, but there is a question over the reliability of this conclusion. For instance, although the particle does occur in embedded questions, there is often also another complementiser present. Similarly, although the particle *mây* can occur in biased questions, it is marginal, whereas the other type of particle is only found in such questions. Finally, although there is no ‘interrogative intonation’, this prediction is not as strong as the others based on the conclusions of Chapter 5, meaning that a falsification of this prediction is not a falsification of the hypothesis as a whole.

An alternative possibility should be taken into account, however. In Chapter 5, the suggestion was made that ‘real’ question particles may mark either question force or open polarity (or both). Some of the Thai evidence also supports this idea. It cannot encode question force because it occurs in embedded questions, which lack illocutionary force. However, its appearance in embedded questions could be taken as a sign that the particle indicates open polarity. In addition, *mǎy* occurs only in open questions, and not in those argued to have affirmative or negative polarity (alternative, confirmation, negative and *wh*-questions). This classification would make Thai a different type of language from any of those found in Chapter 5, none of which had intonation which encoded open polarity but not question force and would represent the ‘missing combination’ noted there. However, the particle does not license NPIs, which was shown in Chapter 5 to be a good indicator of whether an element encodes open polarity. From figure 4, repeated from Chapter 5, it can be seen that the statements true of the Thai ‘question particle’ broadly indicate that it does not encode [+Q], but that they span both [+Pol/–Pol] and [±Pol], which is impossible. If it is not a question-marking device at all, this inconsistency with the characteristics of questions is not surprising:

Figure 4. Predictions made about the distribution of IQs.



The argument of this section is that the basic, neutral Thai question particle *mǎy* is the negative element in a disjunction and negation construction. In the next section, languages which do not violate FOFC (and could therefore undergo grammaticalisation of their disjunction element into a true question particle) are shown not to bear out the same predictions given in (869). This indicates that the particle in these languages is not part of a disjunction construction, although it may have its origins in the disjunction, but is instead a particle in the position they have generally been assumed to occupy: a high head in the left periphery.

7.2. Other languages: data and analysis

In this section, Turkish and Japanese are compared to Thai in terms of the predictions made in (869). These two languages are chosen because they are unrelated and both have final question particles like Thai. Unlike Thai, they both have OV order, meaning that their final question particles do not violate FOFC

and are predicted to allow the grammaticalisation of the particle.¹⁰³ In both languages, the particle is well known to be homophonous with or derived from the disjunction (in Japanese) or the negation (in Turkish). They might therefore be considered to have the same basic structure in questions as Thai does, consisting of two disjoined clauses with the second elided. It is shown, in line with my hypothesis, that this is not the case.

7.2.1. Turkish and Japanese question particles¹⁰⁴

Turkish and Japanese have OV word order and a final question particle,¹⁰⁵ *mi* in Turkish and *ka* in Japanese. This is illustrated in (927)–(928) for Turkish and (929)–(930) for Japanese:

¹⁰³ I assume that the question particles in Turkish and Japanese were originally disjunction markers as is the case for Thai, and that they have undergone a process of grammaticalisation. This is not a crucial assumption, but it is consistent with the fact that the particles are etymologically related to the disjunction. I work on this assumption in order to test the strongest possible version of the hypothesis to its limits.

¹⁰⁴ All Turkish data in this section is kindly provided by Olcay Sert, p.c., and Japanese data by Nami Kaneko, p.c., unless indicated otherwise.

¹⁰⁵ In Turkish, YNQs and alternative questions are marked with the unstressable clitic *mi*. In YNQs, it attaches to the predicate if the whole of proposition is questioned (i.e. the question is a neutral polar question) (Göksel & Kerslake 2005: 251-2, with partial glosses provided by Olcay Sert, p.c.):

- i. bahçeye ağaç dikecekler mi?
 garden.DAT tree plant.FUT.3PL Q
 'Will they plant trees in the garden?'
- ii. kedi-ler iki konserve-yi de bitir-miş-ler mi?
 cat-PL two can-ACC both finish-EV/PF-3PL Q
 'Have the cats finished both tins?'

The particle can also attach to particular phrases. If so, it questions just that phrase, and the rest is assumed by the speaker. The questioned phrase is usually placed just before predicate (a focus position) (Göksel & Kerslake 2005: 251, 255):

- iii. banka-ya sabah-leyin mi gid-ecek-sin?
 bank-DAT morning-ADV INT go-FUT-2SG
 'Will you be going to the bank *in the morning*? (Göksel & Kerslake 2005: 255)

In NPs, the particle always occurs attached to the head, and the stress pattern gives information about whether the whole phrase is questioned or just part of it. In other phrases, it occurs at the end of the phrase (although presumably this often works out as the same thing, as the head will usually be final). It can also attach to non-head constituents within these phrases (Göksel & Kerslake 2005: 255).

(927) arabayı yıkayalım mı?
 the.car wash-MODAL Q
 'Shall we wash the car?'

(928) yarın ders var mı?
 tomorrow class is.there(EXIST) Q
 'Is there class tomorrow?'

(929) Lucy-wa senshū kaze-wo hiita-n desu ka?
 Lucy-NOMlast.week cold-ACC caught Q
 'Did Lucy catch cold last week?'

(930) watasi-no yoyaku-wo raishū ni kaeraremasu ka?
 my appointment-ACC next.week to change.can Q
 'Can I change my appointment to next week?'

Turkish has variable word order, and changing it marks information as new or old. However, the unmarked order is S(O)V in verbal sentences, and Subject–Predicate in nominal sentences (Göksel & Kerslake 2005: 337):

(931) terzi elbise-m-i bitir-miş
 dressmaker dress-1SG.POSS-ACC finish-EV/PFV
 'Apparently the dressmaker has finished my dress.'

(932) hava çok soğuk
 weather very cold
 'The weather is very cold.'

The same is true of Japanese, with SOV order as in (933) (Kuno 1973: 3):

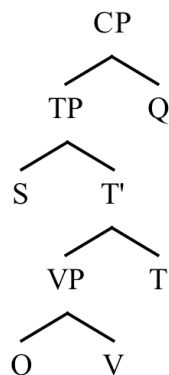
(933) John ga Mary o but-ta
 John NOM Mary ACC hit-PAST
 'John hit Mary.'

Japanese allows other word orders, including OSV, but Kuno (1973) states that SOV is far more common (a 17:1 ratio) and that there is a rigid constraint that the verb must be final.

In contrast to the situation in Thai, this combination of OV and final question particle does not violate FOFC. It is harmonic because CP and VP and all phrases

in between are head-final, as shown in (934) in a simplified tree. The head-finality is assumed to be derived via roll-up movement, so in the terminology of FOFC, all heads in the tree have the movement diacritic causing comp-to-spec movement:

(934)



According to Biberauer, Newton & Sheehan (2009a, b) and Biberauer, Sheehan & Newton (2010), language change cannot result in FOFC-violating structures, as discussed in Chapter 3: §1.3. However, if the structure is not FOFC-violating at any point, change can occur. It is therefore expected that the existence of the constraint does not restrict the final element from being analysed as a true question particle in Turkish and Japanese. There is some evidence that this is the case. The predictions made for Thai are applied to Turkish and Japanese, and it is shown that the question particles in these languages are not restricted by FOFC in their occurrence in negative, alternative or *wh*-questions, unlike the Thai question particle.

7.2.2. *Testing the predictions*

In this section, the predictions made for VO...Q languages are tested against the two OV...Q languages Turkish and Japanese. In each case, it is expected that the prediction will not necessarily be borne out. Any of them may be, however, as the predictions are unidirectional: they state 'if A then B', without the converse implication 'if not B, then not A'. It is shown that the predictions largely do not

hold for Turkish and Japanese, indicating that their question particles have undergone grammaticalisation and are C heads, not instances of the disjunction/negation.

Can the particles appear in embedded questions?

The Turkish and Japanese question particles can both introduce embedded questions. This is expected, if they are true question particles. It also indicates that they do not obligatorily encode question force, which is not present in embedded questions. They appear finally in the embedded clause, which precedes the main verb:

(935) Amerika'yı ziyaret etmiş mi diye sordum. [Turkish]
 America.ACC visit.PAST Q REP.SPEECH ask.PAST.1ST
 'I asked him if he had visited America.'

(936) watasi-wa kare-ni *The lord of the flies*-wo yonda ka
 I-NOM him-DAT *The lord of the flies*-ACC read.PAST if
 tazuneta.
 asked
 'I asked him if he had read *The lord of the flies*.' [Japanese]

In Japanese it is clear that *ka* can embed an indirect question. In the Turkish example a reported speech marker *diye* is present, which may function as a complementiser like Thai *wâa*. Speculative questions may also be embedded in Turkish, under a verb meaning 'wonder', and in this example no other complementiser is present:

(937) Romalılar kahve içer miydi merak ediyorum.
 Romans coffee drink.Q.PAST wonder.1S
 'I wonder if the Romans drank coffee.'

A special speculative question suffix *-dir* on the particle may be used instead of the verb 'wonder', as in (938). Without this speculative suffix, the question in (938) is interpreted as a simple main clause question:

- (938) Olcay tezini bitirmiş midir?
 Olcay thesis.POSS.3rd finish.PAST Q.RHET
 '(I wonder,) Has Olcay finished his thesis?'

Similarly, in Japanese, the particle can appear with *darou* 'wonder' or a rhetorical marker *na* to receive a rhetorical interpretation. If the question occurs with just the question particle *ka*, as in (941), it is grammatical but it is interpreted as an information-seeking question:

- (939) kodai roomajin-wa koohii-wo nonda-no darou ka
 the Romans-NOM coffee-ACC drank wonder Q
 'I wonder if the Romans drank coffee.'
- (940) kodai roomajin-wa koohii-wo nonda-no ka na
 the Romans-NOM coffee-ACC drank Q
 'I wonder if the Romans drank coffee.'
- (941) kodai roomajin-wa koohii-wo nonda-no ka
 the Romans-NOM coffee-ACC drank Q
 'Did the Romans drink coffee?' (interpreted as information-seeking)

Are the particles used to mark negative questions?

Unlike in Thai, the question particle in both Turkish and Japanese can mark a negative question. This indicates that the particle does not introduce an elided negative clause, as I hypothesise for Thai, following Yaisomanang (2012):

- (942) Amerika'ya gitmedin mi?
 to.America go.NEG.PAST.2ND Q
 'Haven't you visited America?'
- (943) Steve Jobs'in kim olduğunu bilmiyor musun?
 Steve Jobs who is know.NEG.PRES Q.2ND
 'Don't you know who Steve Jobs is?'
- (944) *The time machine*-wo yondakoto-ga nai-n desu ka?
The time machine-ACC have.read not Q
 'Haven't you read *The time machine*?'

In Thai, this construction would be ungrammatical due to the logical impossibility of asking $\neg P$ or $\neg P?$. In Japanese and Turkish it is perfectly

acceptable. Although *ka* is used as the disjunction and *mi* is related to the negation, it cannot be the case that the particle is either the negative head of an elided clause or the disjunction heading a ConjP containing the negative counterpart of the positive overt clause. This therefore provides evidence to support the argument that the particle in Turkish and Japanese is a true question particle.

Are the particles used to mark alternative questions?

In Thai, the question particle cannot appear in an alternative question because of the impossibility of asking a question such as *Do you want coffee or tea or not?*, where the answer is *tea* or *coffee*. In Turkish there is no such restriction: the question particle appears after each alternative, optionally joined with *yoksa* ‘or’. The second predicate may simply be the negation of the first (Göksel & Kerslake 2005: 254):

(945) Cemal okul-a git-ti mi, (yoksa) git-me-di mi?
 Cemal school-DAT go-PFV Q (or) go-NEG-PFV Q
 ‘Did Cemal go to school or not?’

(946) Ankara-ya mı İstanbul-a mı gitmek istiyorsun
 Ankara-DAT INT İstanbul-DAT Q go.INF want.PRES.2S
 ‘Do you want to go to Ankara or to İstanbul?’

Note that these questions do not simply take the form of a sentence containing a disjunction with a final particle, something like ‘You want to go to Ankara or İstanbul Q’. Instead, the particle follows the questioned constituents. A useful comparison here is Thai, which has an obligatory polar question reading if the particle is used in such questions. I suggest that if the particle is placed sentence-finally in Turkish, the polar question reading is obtained, requiring its clause-internal placement for alternative questions. English has a comparable disambiguation strategy for the two types of question, having a very clear and particular intonation for alternative questions.

In Japanese, there are two ways to ask this type of question. One appears to be a *wh*-question and the other two separate questions:

(947) John Wyndham to George Orwell to dochira-ga suki
 John Wyndham or George Orwell which-TOP prefer
 desu ka?
 Q
 'Do you prefer John Wyndham or George Orwell?'

(948) John Wyndham-ga suki desu ka? Soretomo George Orwell-ga
 John Wyndham-TOP prefer or George Orwell-TOP
 suki desu ka?
 prefer Q
 (Do you prefer John Wyndham or George Orwell?)

Are the particles used to mark wh-questions?

The Thai particle is ungrammatical in *wh*-questions due to the impossibility of negating a *wh*-question (**Who is your favourite author or not*). In Turkish, too, the question particle is not used:

(949) en sevdiğin yazar kim?
 SUPERLATIVE like.2ND author who
 'Who is your favourite author?'

(950) en sevdiğin kitap ne?
 SUPERLATIVE like.2ND book what?
 'What is your favourite book?'

(951) ne zaman mezun oldun?
 when graduate.PAST.2ND
 'When did you graduate?'

(952) bu yaz nereye gittin?
 this summer where.DAT go.PAST.2ND
 'Where did you go this summer?'

However, as Cheng (1991) shows, many languages have a YNQ particle and not a *wh*-Q particle. She argues that the implication is one-way: a language that has a *wh*-Q particle will have a YNQ particle, but a language with a YNQ particle does not necessarily have a *wh*-Q particle.

In Japanese, on the other hand, the question particle is used in *wh*-questions in exactly the same way as in polar questions:

(953) sukina sakka-wa dare desu ka?
 favourite author-NOM who Q
 'Who is your favourite author?'

(954) dono hon-ga okiniiri desu ka?
 which book-NOM favourite Q
 'Which book was your favourite?'

This provides further evidence that the question particle in Japanese, at least, is not the same sort of particle as the Thai question particle, and does not introduce an elided negative clause.

Can the particle occur in biased questions?

The Thai particle *mǎy* is strictly neutral in the answer it expects, and cannot easily be used in biased questions: Thai uses the 'true or not true' type of particle instead. The Turkish and Japanese particles, like Thai *mǎy*, are neutral in the answer they expect.

(955) a. arabayı yıkayalım mı?
 the.carwash.MOD.1PL Q
 'Shall we wash the car?'

b. (evet) yıkayalım/ (Hayır) yıkamayalım
 (yes) wash.MOD.1PL (no) wash.NEG.MOD.1PL
 'Yes, we shall wash it.'/ 'No, we shall not wash it.'

(956) a. onu seviyor musun?
 him/her love.PRES Q.2nd
 'Do you love him/her?'

b. evet, seviyorum/ hayır, sevmiyorum.
 yes love.PRES/ no love.NEG.PRES
 'Yes, I love her.'/ 'No, I don't love her.'

(957) a. sono hon-wo yomimasita ka? [Japanese]
 the book-ACC read.PAST Q
 'Did you read the book?'

b. hai yomimasita /iie, yomimasendesita
 yes read.PAST no, read.NEG
 'Yes, I did.'/'No, I didn't.'

(958) a. kare-no jyuusho-wo sitteimasu ka?
 his address-ACC know Q
 'Do you know his address?'

b. hai, sitteimasu /iie, sirimasen
 yes know no know.NEG
 'Yes, I do.'/'No, I don't.'

(959) a. kanojyo-wa eigo-wo hanasimasu ka?
 she-NOM English-ACC speak Q
 'Does she speak English?'

b. hai, hanasimasu /iie, hanasimasen
 yes speak no speak.NEG
 'Yes, she does.'/'No, she doesn't.'

However, the Turkish and Japanese question particles can also occur in biased questions as well as neutral questions. Biased questions therefore look exactly like neutral questions:

(960) aç mısın? [Turkish]
 hungry Q.2ND
 'Are you hungry?'

(961) ame-ga futteiru-n desu ka? [Japanese]
 rain-NOM is Q
 'Is it raining?' (Said if someone comes in from outside dripping wet.)

(962) suitokoon-wa suki jyanai-n desu ka?
 sweetcorn-TOP like not Q
 'Don't you like sweetcorn?' (Said if someone leaves all their sweetcorn on the side of their plate.)

In Turkish, it is possible to question the whole proposition with the particle preceding the predicate, and the resulting question is biased; some previous

supposition must indicate the answer. (963) can be used when you see someone with their coat on and (964), with the question particle in canonical clause-final position, cannot. Conversely, (964) can be used out of the blue, while (963) cannot (Göksel & Kerslake 2005: 257):

(963) sokağa *mi* çıkıyorsun?
street.DAT Q go(leave).PRES.2S
‘Are you going out?’

(964) sokağa çıkıyor *musun?*
street.DAT go(leave).PRES Q.2S
‘Are you going out?’

Alternatively, Göksel & Kerslake (2005: 257) note that the particle can be attached to the constituent just before the predicate to indicate surprise or disbelief. The whole proposition is questioned in that case, not just the constituent to which the particle is attached.

Can the question contain an NPI?

The Turkish question particle does license a Negative Polarity Item, indicating that it scopes over the whole question and that the question has open polarity:

(965) Hiç Lahmacun yedin *mi?*
ever lahmacun eat.PAST.2ND Q
‘Have you ever eaten lahmacun?’

Hiç cannot be used to mean ‘ever’ in affirmative contexts. The same form is found, but it means ‘never’:

(966) A: Kaç kez evlendin?
‘How many times did you get married?’
B: Hiç.
‘Never.’

(967) Hiç evlenmedim.
‘(I) never got married.’

However, in Japanese, it is not possible for an NPI to appear in a polar question:

(968) choushoku ni ringo (*sika) tabe-naka-tta-n desu ka?
breakfast for apple only eat-NEG-PAST- Q
'Did you have only an apple for breakfast?'

(969) anato-no kuruma ni wa watasitachi no uchi futari
your car in us of two
(*sika) nose rare nai-n desu ka?
only take can not Q
'Can you take only two of us in your car?'

Sika has to occur with a licensing negation, *nai* 'not'. The examples given in (968)-(969) require more analysis, however: (969) appears to include the negation but is not translated as a negative sentence, and furthermore it does not allow an NPI even when negation is present.

Is there any special question intonation?

Both Japanese and Turkish have a particular intonation pattern for interrogatives. Göksel & Kerslake (2005: 288) state that Turkish questions have a rise and final fall. Risa Goto (p.c.) reports rising intonation on open and alternative questions, and falling intonation on speculative and embedded questions.

Are the particles obligatory in all types of question in which they are used?

In Japanese, the question particle is usually used but is not required in all questions, perhaps with some effect on the meaning. Göksel & Kerslake (2005) do not state explicitly, but imply that the Turkish particle is obligatory. This is consistent with it being a true question particle rather than the optional pronunciation of part of an elided second disjunct.

Can the full, non-elided dual-clause form be used?

If the dual-clause form of the question is asked in Turkish, with both the positive and negative alternatives spelt out, the question particle appears on both clauses. Although disjunction can appear on both disjuncts in many languages, this is not the case for Turkish. Furthermore, a separate disjunctive element is present, again indicating that *mi* is a true question particle and not disjunction/negation, as in Thai:

- (970) Amerika'ya gittin mi yoksa gitmedin mi?
to.America go.PAST.2ND Q or go.NEG.PAST.2ND Q
'Have you visited America or have you not visited America?' [Turkish]

In Japanese, this is not possible and the resulting structure is two polar questions juxtaposed, as noted in Chapter 6:

- (971) *Journey to the centre of the earth*-wo yandakoto-ga arimasu ka?
Journey to the centre of the earth-ACC have.read
Soretomo yondakoto nai desu ka?
or have.read not Q
'Have you read *Journey to the centre of the earth*? Or have you not read
Journey to the centre of the earth?' [Japanese]

Is the question particle homophonous with the disjunction or negation?

The Japanese particle is homophonous with the disjunction *ka*, and the Turkish particle is derived from the negation *ma*. *Ka* is also used in indefinites. The fact that these two particles have an obvious counterpart in either the disjunction or the negation lends weight to the idea that they are originally such elements. Notwithstanding this, the evidence of the rest of this section indicates that they should no longer be considered to be literally the disjunction and the negation. In addition, the fact that the Turkish particle is not identical to the element from which it is derived suggests that grammaticalisation has taken place.

7.2.3. Summary and discussion

In this section we have seen that many of the predictions made for Thai-like languages do not hold for Turkish/Japanese-type languages, as is expected if their particles have undergone the process of grammaticalisation (assuming that, as is indicated by their etymology, they began as a disjunction plus negation, as in present-day Thai). Table 15 above is repeated here as table 16 with Turkish and Japanese added, where we expect 'Yes' for Thai and 'No' for Turkish and Japanese if the hypothesis is correct:

Table 16. Summary of the evidence for the predictions arising from this thesis for Thai, Turkish and Japanese.

Prediction	Supported by Thai evidence?	Supported by Turkish evidence?	Supported by Japanese evidence?
The particle should not occur in embedded questions.	?	?	No
The particle should not occur in negative questions.	Yes	No	No
The particle should not occur in alternative questions.	Yes	No?	No?
The particle should not occur in <i>wh</i> -questions.	Yes	?	No
The particle may not occur in biased questions.	?	No	No
Particle questions should not license an NPI.	Yes	No	Yes?
There may be a special polar interrogative intonation.	Yes?	Yes	Yes
The particle may be optional.	No	No	No
It should be possible to pronounce the second disjunct.	Yes	?	?
The particle should be homophonous with the disjunction or negation	Yes	Yes	Yes

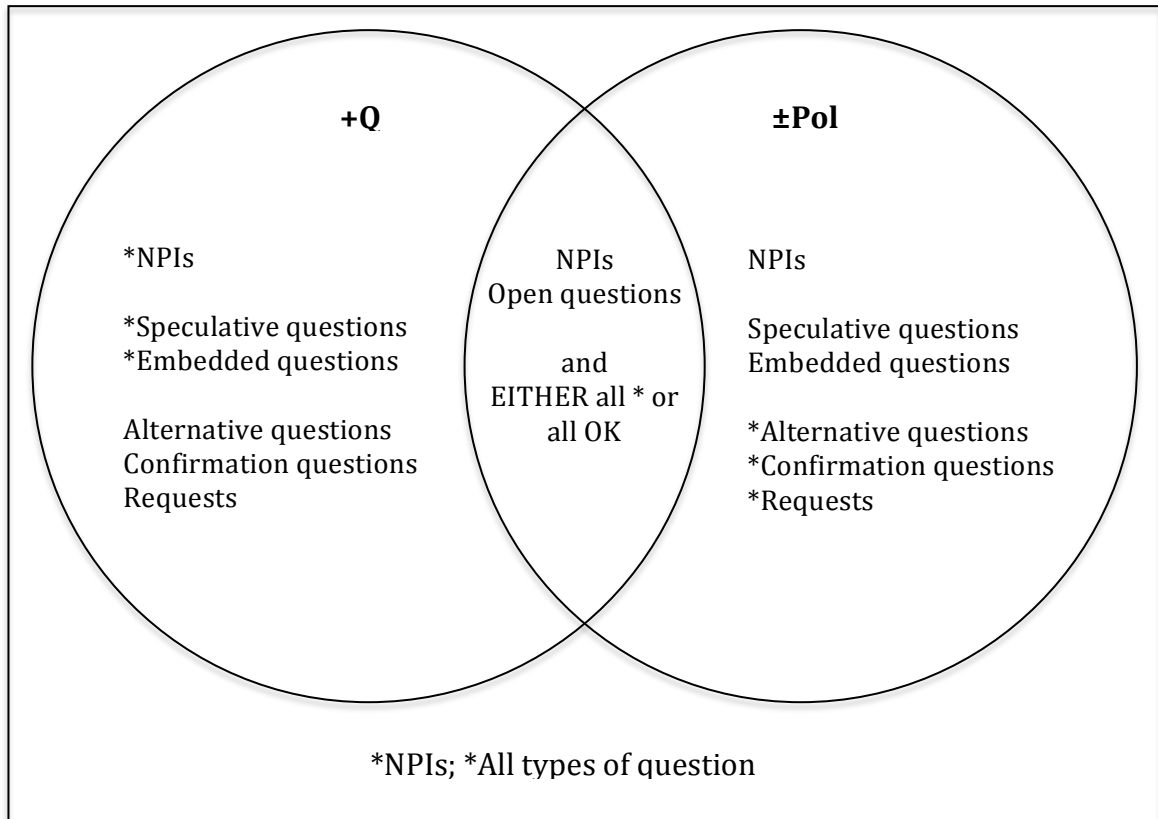
By and large, Turkish and Japanese do not conform to the predictions given in (869), lending support to the hypothesis set out here. Note that although they do conform in some cases, these predictions are unidirectional, so this is not immediately problematic. The pattern is clearest for those predictions that are harder to explain otherwise, such as occurring in negative, embedded, alternative, *wh*- and biased questions. Although they do have a special question intonation, it is not unusual to find intonation and some other question-marking device in conjunction. Furthermore, although their particles are homophonous with or derived from the negation and disjunction, this can be argued to be due to the historic origin of the particles, not their current syntactic status.

This non-conformity to the predictions is as expected, and reinforces the idea that the particle can undergo grammaticalisation if the result of such a process is not FOFC-violating. Such data in itself does not necessarily indicate a grammaticalisation process, but does show that the particles are true question particles in the left periphery, as is generally assumed. Their clear relation to the disjunction/negation, as well as the semantics of questions, is indicative of their origin as such elements, which implies that grammaticalisation has taken place. However, I do not pursue this matter here. Suffice it to say that there is a clear difference in the behaviour of final question particles in VO languages and OV languages, and that much of this difference is explained by appeal to the theory outlined in Chapter 6. There, I argued that the question particle is an instance of the disjunction in VO...Q languages, while in other languages it is merely derived from it historically.

If the particle in Turkish and Japanese is a 'true' particle, it should, according to the analysis in Chapter 5, be categorisable as encoding question force, open polarity, or both. From figure 4 below, repeated from Chapter 5, it appears that Turkish *mi* encodes force and polarity. It can appear in questions that have only one of the two features, meaning that it can encode either feature. The case for Japanese *ka* is less clear. If we disregard the fact that it cannot license an NPI,

setting this problem aside for future investigation, then it can be categorised like Turkish in marking both features:

Figure 4. Predictions made about the distribution of IQs.



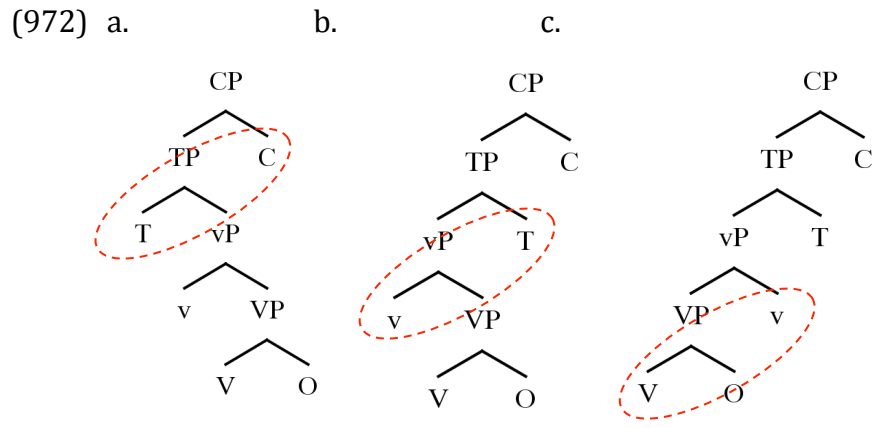
Although there are some loose ends to follow up, this chapter has shown that the predictions made at the end of Chapter 6 for Thai-like languages generally hold, and that they largely do not apply to other types of language. This is consistent with the hypothesis of this thesis: clause-peripheral question particles are derived from a disjunction/negation construction, and final question particles in VO languages retain this association. Those in OV languages and initial question particles in VO or OV languages may grammaticalise to ‘true’ question particles, which are heads in the left periphery.

Chapter 8. Conclusion

The starting point for this thesis was the observation that, although the Final-Over-Final Constraint is well-supported cross-linguistically, elements known as particles audaciously flout it. I focussed on polar question particles because these elements violate FOFC in numerous and diverse languages (Chapter 2).

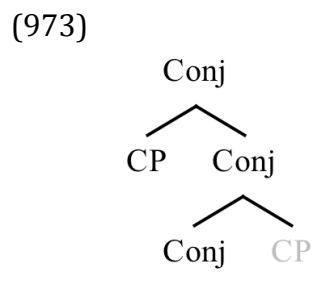
There were three possible outcomes: either FOFC is wrong and is not a linguistic universal, or it is right but does not apply to particles, or particles do not in fact violate FOFC and merely appear to do so. Some authors (Hawkins 1994, 2004; Philip 2012) have argued in favour of the first position and show that FOFC is a tendency. This proposal has some merits, but seems to be a less interesting outcome. The possibility that particles do not fall within the remit of FOFC was discussed in Chapter 3, but ultimately I sought to prove that the final outcome is the correct one: particles do not violate FOFC, despite appearances to the contrary. This hypothesis is the strongest in that it allows for no exceptions to the constraint, and all apparent exceptions must be shown to have some other explanation. As the strongest version of the constraint, it is the one that must be tested to the limit and pushed as far as it can go. When it breaks, its limit has been reached and a new explanation must be found. I have been able to push it a surprisingly long way in this thesis.

The main aim of this thesis was therefore to explain the existence of question particles in apparently FOFC-violating structures, namely those in which a final question particle occurs with VO word order. The offending structure is as in (972), repeated from Chapter 3, where the particle is represented by C and a FOFC-violation occurs at some level in the derivation:



Although the behaviour of particles with regard to FOFC was the stimulus for the investigation, the word order facts are surprising in a theory-external sense as well: heads generally pattern with the order of the verb in relation to its complement, and these particles fail to do so.

The solution that I have argued for in this thesis is that such particles are misrepresented in the diagrams in (972), and that they should instead be regarded as disjunction markers taking an elided complement clause:



The argument I have put forward is that polar questions derive from a disjunction of a proposition and its negation (Chapter 6). The question particle is in fact the disjunction marker. In most languages, this fact is obscured by the grammaticalisation of the disjunction to a true question particle in the left periphery. In VO languages with final question particles, however, this reanalysis is impossible because it would result in a FOFC-violating structure. Final question particles in VO languages therefore retain their disjunctive character (Chapter 7).

This analysis provides a very simple explanation of the apparent FOFC violation: the particle is not final, but initial. The clause preceding it is in Spec,ConjP and the particle is stranded as a result of the deletion of the second disjunct. The task then is to show why the question particle should be analysed as the disjunction. An obvious fact that provides some motivation for the claim is that in many languages, the question particle is homophonous with the disjunction marker. In addition, I illustrated in Chapter 2 the fact that the question particle is unable to mark embedded questions in VO...Q languages, while in other languages the restriction is not absolute. This restriction fits with the analysis of the particle as the disjunction.

Certain predictions are made that should hold true if this hypothesis is correct, and I showed in Chapter 7 that they do, broadly speaking, for Thai. I checked these predictions by testing them on two OV languages with final particles, Turkish and Japanese, and they did not show the same level of consistency with the predictions. I have therefore suggested a reason for polar question particles to appear to violate FOFC while still preserving it as an absolute universal, and I have shown that it has considerable explanatory power.

In addition to this main aim, I argued in Chapter 5 that Force and Polarity are the important components of polar questions and that between them they provide all the syntax of a question. A polarity variable is the questioned element in a polar question, just as a *wh*-phrase is questioned in a *wh*-question, and the variable is attracted to Spec,FocP in just the same way as the *wh*-phrase is attracted there. As a result, I argued for a simplified left periphery in which the notion of a head specifically to host a clause typing element or question morpheme (as discussed in Chapter 4) is unnecessary. I provided evidence for this claim by analysing intonation questions in a small number of languages, and in the process argued that intonation has syntactic reality. In questions it can perform the same question-marking function that in other languages or other contexts is performed by a question particle or other morphosyntactic device. Finally, I argued in Chapter 6 that disjunction is central to the notion of a polar question. This is widely recognised for the semantics of questions (e.g. Farkas &

Bruce 2010), but less often for the syntax of questions. I have argued that both the syntax and semantics of polar questions are derivable from a disjunction of a proposition and its negation.

Some consideration is in order of the way in which language learners acquire the question particle in their language. The presence or absence of a question particle is a parameter, set according to evidence from the linguistic input. According to the Subset Principle, by which the languages with a particle form a subset of the possible ways a language can be, the minimal assumption is that the language has no question particle. This assumption is corrected if evidence of the presence of a particle is encountered, and the parameter is set positively. If no such evidence is encountered, the parameter is set negatively.

In addition, the reanalysis of the disjunction as a question particle can also be explained in terms of parameter setting. Roberts & Roussou (2003) argue that functional material may be reanalysed as new functional material higher up in the structure. In order for this to happen, there must be some trigger in the form of evidence with more than one possible interpretation, and the simpler, more economical structure is preferred. The input received in the case of the disjunctive constructions considered in this thesis is of the form in (974), which may be interpreted by the child as having the structure in (975) or (976). Clearly, a structure with an elided clausal complement is less simple than one in which the particle is merged as a C element high in the clause, and therefore the reanalysis takes place. It is only prevented when this conflicts with the invariant principle FOFC.

(974) CP PRT

(975) [[CP] Q]

(976) [CP [or [~~CP~~]]]

The proposal argued for in this thesis is not without its faults. As stated, my intention was to push it and see how far it could take us in the quest to explain

these problematic counter-examples to FOFC. One issue is that much of the data is fuzzy, and a wider sample analysed in greater depth is required to tease out the details. Much of my information comes necessarily from published grammars of languages, and these rarely provide precisely the information needed to test a prediction. In addition, while this explanation works reasonably well for final polar question particles, there remain other particles that also violate FOFC, including negation particles and tense and aspect markers. It does not seem viable to extend this analysis to those elements, and yet they still violate FOFC in precisely the same way as polar question particles. Finally, there are question particles that occur in second position, either following the first word or the first constituent. These do not seem amenable to a characterisation as disjunctive elements. Anders Holmberg (p.c.) notes that they are very often focus markers as well as, or instead of, question particles. Question particles in other positions also very often have a focussing function, as in Turkish. We might therefore wish to say that these particles simply focus the questioned element in a different way, given that I argued that the polarity variable is focussed in polar questions, as the questioned element.

This thesis has aimed to demonstrate that the existence of a large class of elements that violate an otherwise universal constraint is not a reason to throw out the constraint, but a reason to look more closely at those elements and try to identify their nature. In this case, I have demonstrated a viable analysis of final polar question particles that does not involve a violation of FOFC and that sheds light on other aspects of their nature.

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