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Polar questions and interrogative particles: a crosslinguistic investigation

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Polar questions and interrogative particles: a crosslinguistic investigation

Abstract

The strategy used for forming polar questions varies across languages. In languages like Finnish and Turkish, polar questions are formed using interrogative particles, which I call *polar interrogative particles*. The main goal of this dissertation is to identify the signature properties of these interrogative particles, and to develop a full-fledged semantic analysis of them and a compositional account of the questions where they occur.

Drawing from novel data in Finnish and Turkish, I start in Chapter 2 by introducing the signature properties of polar interrogative particles. I show how these particles differ from other types of interrogative particles discussed in the semantic literature (i.e., particles like Japanese *ka* and particles like Hindi-Urdu *kyaa*). Chapter 3 focuses on presuppositions that can be found in questions. I argue that we must distinguish two types of presuppositions in questions: (i) propositional presuppositions, which can also be found in declaratives, and (ii) question-specific presuppositions, which are restricted to questions. I identify two distinct presuppositions which come with questions involving polar interrogative particles and show that both of them are instances of question-specific presuppositions. Chapter 4 provides a multi-dimensional analysis of these questions, which offers a compositional way to (i) combine the focus alternatives with the interrogative C-head and (ii) derive the presuppositions of the resulting questions. Specifically, I propose that these particles are focus markers which are interpreted within the proposition out of which a question is formed. They carry an interrogative feature which must agree with an interrogative C-head. The focus alternatives triggered by the constituent they combine with project all the way up to the interrogative C-head. In Finnish and Turkish, $C_{[+Q]}$ is a focus operator which triggers two presuppositions: an existential and an ignorance presupposition. The proposed account addresses important theoretical questions concerning the interaction between different sets of alternatives (in this case, question and focus alternatives) and presuppositions projection in questions.

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Introduction

The strategy used for forming polar questions varies across languages. For instance, in languages like English, polar questions are formed using a raising intonation and subject-auxiliary inversion, as illustrated in (1-a). In contrast, in languages like Finnish and Turkish, polar questions are formed using an interrogative particle – *-kO* in Finnish and *mI* in Turkish. These interrogative particles will be highlighted in all this dissertation, as in examples (1-b) and (1-c).

(1) a. Are you leaving ↑ ? [English]

b. Lähti-kö Mari? [Finnish]
left-PolQ Mari
'Did Mari leave?'

c. Oya Dilara'yı mı öptü? [Turkish]
Oya Dilara-ACC PolQ kiss.PAST
'Did Oya kiss Dilara?'

We find three types of interrogative particles across languages:

(i) particles like Japanese *-ka* (Kuroda 1965, Hagstrom 1998, Uegaki 2018, a.o.) which can occur in interrogatives and can also form disjunctions and indefinites in declaratives;

(ii) particles like Hindi-Urdu *kyaa* (Biezma et al. 2015, Bhatt and Dayal 2020, Dayal 2020) which are optional and are restricted to interrogatives, more specifically, to polar and alternative questions;

(iii) particles like Finnish *-kO* and Turkish *mI*, illustrated in (1-b) and (1-c) respectively, which are restricted to polar and alternative questions, and are mandatory in both matrix and embedded questions (Holmberg et al. 1993, Holmberg 2003, Holmberg 2014 on Finnish *-kO*; Kamali 2011, Atlamaz 2015, Özyıldız 2015, Kamali and Krifka 2020 on Turkish *mI*).

The first two types of interrogative particles are illustrated in example (2).

(2) a. Hanako-ga hashitta-ka? [Japanese]
Hanako-NOM ran-KA
'Did Hanako ran?'

b. Kya: Anu=ne Uma=ko kita:b [di:]↑? [Hindi-Urdu]
KYA Anu=ERG Uma=ACC book.F give.PFV.F
'Did Anu give a/the book to Uma?'

In this dissertation, I focus on the third type of interrogative particles, which I call *polar interrogative particles* (PolQs). These particles have not received much attention in the literature. Most of the

work on PolQs investigate the syntactic properties of these particles and of the questions where they occur. As far as I know, no unified semantic analysis of PolQs which captures all of their characteristic properties has been proposed yet. The main goal of this dissertation is to identify the signature properties of these particles, and to develop a full-fledged semantic analysis of them and a compositional account of the polar questions where they occur. The proposed account draws from novel data I collected in Finnish and in Turkish. These data have been collected through elicitation sessions with one Finnish native speaker and three Turkish native speakers, unless otherwise indicated.

The study of PolQs allows us to address core questions in two major research areas in semantics. The first one concerns presuppositions. It is well-known that a declarative like (3-a) which contains the definite article comes with the presupposition in (3-b). This sentence can only be uttered in a context where there is a unique relevant cake.

(3) a. Zoe brought the cake.

b. There is a unique (contextually relevant) cake.

Presuppositions are known to not be restricted to declaratives. For instance, the polar question in (4-a) retains the presupposition of its declarative counterpart given in (3-a).

(4) a. Did Zoe bring the cake?

b. There is a unique (contextually relevant) cake.

Presuppositions which have been well-studied in declaratives have received much less attention when they occur in interrogatives (Dayal 1996, Guerzoni 2003, Uegaki 2020, a.o.). Two core questions are whether the source of presuppositions is the same in declaratives and in interrogatives and how they project in interrogatives.

One characteristic property of PolQs is that they come with an existential presupposition. For instance, the polar questions in (5) and (6) both presuppose that someone left.

(5) a. Mari-**ko** lähti? [Finnish]
Mari-PolQ left
'Was it Mari who left?'

b. *Presupposition:* Someone left.

(6) a. Oya **mı** ayrildi? [Turkish]
Oya PolQ leave.PAST
'Was it Oya who left?'

b. *Presupposition:* Someone left.

Because PolQs are restricted to interrogatives, finding out what the source of these existential presuppositions is and what their projection patterns are is not an easy task. However, I will show that comparing these presuppositions with presuppositions we find in other types of questions allows us to distinguish two types of presuppositions in questions: (i) presuppositions I label *propositional* presuppositions, which can be found in declaratives, and (ii) presuppositions I label *question-specific* presuppositions, which are restricted to questions. Even though questions involving a clefted constituent are often used to paraphrase PolQ-questions, as in (5) and (6), I show that they are not equivalent. In particular, their presuppositions do not belong to the same category of presuppositions. In sum, this dissertation contributes to a better understanding of the source of presuppositions in questions and their projection behavior.

Another major research area this dissertation contributes to is the semantics of alternatives. A large number of phenomena have been argued to have a semantics that makes reference to alternatives: for instance, questions (Hamblin 1973, Karttunen 1977, Shimoyama 2001, a.o.), focus (Rooth 1992, Beck 2006, a.o.), implicatures (Chierchia 2004, Sauerland 2004, Fox 2007, a.o.) and polarity sensitive items (Krifka 1995, Lahiri 1998, Chierchia 2013, a.o.). Some core questions raised in this domain are the following: What is the source of alternatives? What are the mechanisms underlying the generation of alternatives? What is the relation between alternatives and the assertion?

How do different sets of alternatives interact?

Because they are restricted to questions, PolQs occur in environments that make use of alternatives. In addition, I show that PolQs are focus-sensitive. In both Finnish and Turkish, the constituent preceding the interrogative particle is focused, as illustrated in examples (7) and (8). The phrase containing PolQ and the focused constituent is indicated by [ ].

(7) a. *Who saw Mari?* [Finnish]

[Jenna-**ko**] näki Marin?
Jenna-PolQ see.PAST Mari.ACC
'Was it Jenna who saw Mari?'

b. *Who did Jenna see?*

[Marin-**ko**] Jenna näki?
Mari.ACC-PolQ Jenna see.PAST
'Was it Mari that Jenna saw?'

(8) a. *Who kissed Dilara?* [Turkish]

[Oya **mı**] Dilara'yı öptü?
Oya PolQ Dilara-ACC kiss.PAST
'Was it Oya who kissed Dilara?'

b. *Who did Oya kiss?*

Oya [Dilara'yı **mı**] öptü?
Oya Dilara-ACC PolQ kiss.PAST
'Was it Dilara that Oya kissed?'

Given that PolQs associate with a focused constituent, the questions where they occur involve two different types of alternative sets, i.e., alternatives coming from the question and alternatives coming from the focused expression. The proposed account of PolQs and of these questions where they occur offers a compositional way to combine these two types of alternatives with the interrogative $C_{[+Q]}$ head, thus contributing to a better understanding of the interaction between different sets of alternatives.

Additional questions specific to interrogative particles that this dissertation addresses are the following: What is the contribution of PolQs? Why are they mandatory? Why are they restricted to some types of questions?

The outline of this dissertation is the following.

Chapter 2 introduces the signature properties of PolQs and shows how they differ from other types of interrogative particles discussed in the semantic literature (i.e., particles like Japanese *ka* and particles like Hindi-Urdu *kyaa*). These are properties any analysis of PolQs and of the questions where they occur has to account for. This chapter discusses the few proposals of PolQs one can find in the literature and shows that none of them can capture this set of characteristic properties.

Chapter 3 focuses on presuppositions that can be observed in questions. I argue that we must distinguish two types of presuppositions in questions: (i) propositional presuppositions, which can also be found in declaratives, and (ii) question-specific presuppositions, which are restricted to questions. I show that these two types of presuppositions display an interesting difference when they are embedded under rogative predicates. Presuppositions that come with PolQs-questions are instances of question-specific presuppositions. An additional presupposition which I claim belong to this category is a presupposition I call ignorance presupposition. This presupposition requires that all possible answers to a question can be true for the speaker.

Chapter 4 provides a multi-dimensional analysis of PolQs-questions. I claim that PolQs are focus markers which are interpreted within the proposition out of which a question is formed. These particles carry an interrogative feature which must agree with an interrogative $C_{[+Q]}$ head. The focus alternatives triggered by the constituent they combine with project all the way up to the interrogative $C_{[+Q]}$ head. $C_{[+Q]}$ is a focus operator which triggers the presuppositions one find in PolQ-questions. I further show how the proposed account of PolQs and of the questions where they occur can capture the characteristic properties of these particles.

Chapter 5 discusses additional interesting questions that emerges from this work on PolQs, and concludes.

2

Introducing polar interrogative particles

2.1 Introduction

Two main types of interrogative particles have been studied in the semantic literature: (i) particles like Japanese *-ka* (Kuroda 1965, Hagstrom 1998, Uegaki 2018, a.o.) which can occur in interrogatives and can also form disjunctions, indefinites, etc., in declaratives, and (ii) particles like Hindi-Urdu *kyaa* (Biezma et al. 2015, Bhatt and Dayal 2020, Dayal 2020) which are restricted to interrog-

atives. In this chapter, I present the signature properties of a third type of interrogative particles, which I call polar interrogative particles (PolQs). I show that the differences between PolQs and particles of the first type are the following:

(i) Unlike *ka*, PolQs are mandatory;

(ii) Unlike *ka*, PolQs cannot occur in *wh*-questions;

(iii) Unlike *ka*, PolQs are restricted to interrogatives;

(iv) Unlike *ka*, PolQs are focus-sensitive.

And the differences between PolQs and particles of the second type of particles are the following:

(i) Unlike *kya:*, PolQs are mandatory;

(ii) Unlike *kya:*, PolQs can be embedded under all question-embedding predicates.

An additional characteristic of questions involving PolQs is that they come with an existential presupposition. All of these constitute a set of properties that any analysis of PolQs and of the questions where they occur has to account for. This chapter shows that none of the very few proposals one can find in the literature can capture the behavior of these particles. I further discuss and exclude two potential analyses of PolQs one may want to entertain. The first one is that PolQs are the spell-out of the interrogative $C_{[+Q]}$ and the second one is that PolQ-questions are the equivalent of interrogatives involving a clefted constituent (e.g., *It is Zoe who won the race?*).

2.2 Typology of interrogative particles

Two main types of interrogative particles have been studied in the semantic literature: (i) particles like Japanese *-ka* (Kuroda 1965, Hagstrom 1998, Uegaki 2018, a.o.) which can occur in interrog-

atives and can also form disjunctions, indefinites, etc., in declaratives, and (ii) particles like Hindi-Urdu *kyaa* (Biezma et al. 2015, Bhatt and Dayal 2020) which is restricted to interrogatives. This section first reviews the properties of Japanese *-ka* (Section 2.2.1) and Hindi-Urdu *kyaa* (Section 2.2.2), and then presents the signature properties of the interrogative particles investigated in this dissertation, namely PolQs (Section 2.2.3).

2.2.1 Type 1: Japanese *-KA*

Interrogative particles of the first type have also been named Q-particles. They can be found in Japanese (Kuroda 1965, Hagstrom 1998, Uegaki 2018, a.o.), in Malayalam (Jayaseelan, 2011) and in Sinhala (Kishimoto 1992, Hagstrom 1998, Slade 2011, a.o.), among other languages. This section illustrates the characteristic properties of this type of particles with Japanese *ka*.[1]

To start with, example (1) shows that *ka* can be used to form *wh*-questions, alternative questions and polar questions.[2]

(1) a. Dare-ga hashitta-ka (oshiete).
who-NOM ran-KA tell
'(Tell me) who ran?'

b. Hanakotion-ga hashitta-ka Jiro-ga hashitta-ka (oshiete).
Hanako-NOM ran-KA Jiro-NOM ran-KA tell
'(Tell me) which is true: Hanako ran or Jiro ran?'

c. Hanako-ga hashitta-ka?
Hanako-NOM ran-KA
'Did Hanako ran?' (Uegaki, 2018)

The use of *ka* is not mandatory in matrix interrogatives. One can also use another interrogative par-

[1] Some variation is attested between languages which belong to this category (see e.g., Slade 2011, 32). The crucial property which however is common to all of them is that their particles are not restricted to interrogatives, as I show in (4) for Japanese *ka*.

[2] Uegaki (2018) notes that the embedding verb *oshiete* 'tell me' is added in some of these examples because clause-final *ka* is most natural in embedded contexts for stylistic reasons. In informal speech, *no* is used instead of *ka* in a matrix interrogative.

ticle (e.g., *no*), or a raising intonation in informal speech, as illustrated in example (2). Although example (2) only involves *wh*-questions, the same is also true for other types of interrogatives, namely, alternative and polar questions.

(2) a. Hanako-ga hashitta-no?
Hanako-NOM ran-NO
'Who ran?'

b. Hanako-ga hashitta↑?
Hanako-NOM ran
'Who ran?' (Anna Alsop, p.c.)

Ka not only occurs in matrix interrogatives but also in embedded ones. Example (3) shows that *wh*-questions containing *ka* can be embedded under both responsive predicates like *shiru* 'know' and rogative predicates like *kiku* 'ask'. Again, this is also true for polar and alternative questions.

(3) a. Hanako-wa [dare-ga hashitta-ka] shitteiru.
Hanako-TOP who-NOM ran-KA know
'Hanako knows who ran.'

b. Hanako-wa [dare-ga hashitta-ka] kiita.
Hanako-TOP who-NOM ran-KA ask.PAST
'Hanako asked who ran.' (Anna Alsop, p.c.)

As previously mentioned, the main characteristic of this type of particles is that it is not restricted to interrogatives. For instance, *ka* participates in the formation of indefinites and disjunction in declaratives as well, as illustrated in (4).

(4) a. Dare-ka-ga hashitta.
who-KA-NOM ran
'Someone ran.'

b. Taro-ga Hanako-ka (matawa) Jiro-ka-o mita.
Taro-NOM Hanako-KA or Jiro-KA-ACC saw
'Taro saw Hanako or Jiro.' (Uegaki, 2018)

The following table summarizes the multiple uses of *ka*.

	Mandatory?	Polar Q? Alternative Q?	*Wh*-Q?	Embedded Q?	Q only?
Japanese	no	yes	yes	yes	no

Figure 2.1: Characteristic uses of Japanese *ka*

The main challenge is to provide a unified analysis of all of these uses. Although several analyses of Japanese *ka* can be found in the literature (e.g., Hagstrom 1998, Shimoyama 2018, Yatsushiro 2018, Slade 2011), none of them can capture its multiple uses given in Figure 2.1. To my knowledge, the first unified analysis of this particle has been proposed by Uegaki (2018). In the rest of this section, I briefly present his analysis.

Uegaki (2018) adopts a two-tier alternative semantic analysis of in-situ *wh*-questions (Beck 2006, Beck and Kim 2006). In this system, expressions have both an ordinary (o-value) and an alternative-semantic value (alt-value). For instance, the predicate *hashitta* denotes a function from individuals to truth values in the o-value, and its alt-value is the singleton set which contains this o-value, as illustrated in (5).

(5) a. $[\![\text{ hashitta }]\!]^o = \lambda x.\hat{}\, ran(x)$

b. $[\![\text{ hashitta }]\!]^{alt} = \{\lambda x.\hat{}\, ran(x)\}$

Wh-words, in contrast to other expressions like *hashitta*, are claimed to make no ordinary semantic contribution. They only introduce a set of alternatives in their alt-value. The *wh*-word *dare* 'who' is defined in (6).

(6) a. $[\![\text{ dare }]\!]^o = \text{undefined}$

b. $[\![\text{ dare }]\!]^{alt} = \{x | x \in human\}$

Uegaki (2018) proposes that the role of *ka* is always to project a set of alternatives introduced in the alternative-semantic dimension to the ordinary-semantic dimension, as defined in (7). Although this denotation for *ka* can already be found in analyses of in-situ *wh*-questions (Beck 2006, Shimoyama 2018, Kotek 2014), crucially, Uegaki (2018) extends it to all of the uses of this particle.

(7) a. $[\![\alpha \text{ ka}]\!]^o = [\![\alpha]\!]^{alt}$

b. $[\![\alpha \text{ ka}]\!]^{alt} = \{[\![\alpha]\!]^{alt}\}$

Before illustrating this analysis with an example, we provide the rule of *pointwise functional application* (Hamblin, 1973) which is required to compose the semantic values in the alternative-semantic dimension.

(8) *Pointwise Functional Application*

If the node α has $\{\beta, \gamma\}$ as the set of its daughters, $[\![\beta]\!]^{alt} \subseteq D_\sigma$, and $[\![\gamma]\!]^{alt} \subseteq D_{<\sigma,\tau>}$, then $[\![\alpha]\!]^{alt} = \{a(b) | a \in [\![\gamma]\!]^{alt} \wedge b \in [\![\beta]\!]^{alt}\}$

Let us now consider the *wh*-question in (9-a), which has the simplified structure in (9-b). The step-by-step composition of this question is given in (10). As shown in (10-c), it denotes a set of propositions of the form *that x ran* with *x* a human.

(9) a. Dare-ga hashitta-ka?
who-NOM ran-KA
'Who ran?'

b. [$_{CP}$ [dare-ga hashitta]-ka]

(10) a. $[\![$ hashitta $]\!]^o = \lambda x.\hat{}\, ran(x)$

$[\![$ hashitta $]\!]^{alt} = \{\lambda x.\hat{}\, ran(x)\}$

b. $[\![$ dare-ga hashitta $]\!]^o =$ undefined

$[\![$ dare-ga hashitta $]\!]^{alt} = \{\hat{}\, ran(x) | x \in human\}$

c. $[\![$ dare-ga hashitta-ka $]\!]^o = \{\hat{}ran(x)|x \in human\}$

$[\![$ dare-ga hashitta-ka $]\!]^{alt} = \{\{\hat{}ran(x)|x \in human\}\}$

This analysis easily extends to polar questions. The polar question in (11-a) whose simplified structure is given in (11-b) is interpreted as in (11-c). That is, it denotes a singleton-set which contains the proposition *that Hanako ran*. Versions of the singleton analysis for polar questions have been proposed by Biezma and Rawlins (2012), Roberts (2012) and Roelofsen and Farkas (2015), among others.

(11) a. Hanako-ga hashitta-ka?
Hanako-NOM ran-KA
'Did Hanako ran?'

b. [$_{CP}$ [Hanako-ga hashitta]-ka]

c. $[\![$ Hanako-ga hashitta-ka $]\!]^o = \{\hat{}ran(h)\}$

$[\![$ Hanako-ga hashitta-ka $]\!]^{alt} = \{\{\hat{}ran(h)\}\}$

Up to now, we have shown how Uegaki's (2018) analysis of *ka* captures its uses in *wh*-questions and polar questions.[3] We now turn to its non-interrogative uses. When *ka* participates in the formation of an indefinite, as in (12), the semantic composition clashes due to a type-mismatch. As illustrated in (13), the semantic values of the predicate *hashitta* cannot combine with the semantic values of *dare-ka*.

(12) Dare-ka-ga hashitta.
who-KA-NOM ran
'Someone ran.'

(13) a. $[\![$ dare-ka $]\!]^o = \{x|x \in human\}$

$[\![$ dare-ka $]\!]^{alt} = \{\{x|x \in human\}\}$

[3] I refer the reader to (Uegaki, 2018, 20) for the derivation of alternative questions.

b. $[\![\text{ hashitta }]\!]^o = \lambda x.\hat{}\, ran(x)$

$[\![\text{ hashitta }]\!]^{alt} = \{\lambda x.\hat{}\, ran(x)\}$

c. $[\![\text{ dare-ka-ga hashitta }]\!]^o = ??$

$[\![\text{ dare-ka-ga hashitta }]\!]^{alt} = ??$

To save the derivation, Uegaki (2018) proposes that when a *ka*-phrase combines with a set-incompatible predicate, it is type-shifted by a (cross-categorial) existential closure operator, which turns a set into an existential quantifier having this set as its domain. On this analysis, the sentence in (12) has the simplified LF in (14-a). Combining the indefinite with the existential closure operator, we obtain the semantic values in (14-b), which can now compose with the semantic values of the predicate *hashitta*. As a result, we derive the interpretation in (14-c) for the sentence in (12).

(14) a. [[[dare-ka] $\exists$] hashitta]

b. $[\![\text{ [dare-ka] } \exists\,]\!]^o = \lambda P.\lambda w.\exists x \in human[P_w(z)]$

$[\![\text{ [dare-ka] } \exists\,]\!]^{alt} = \{\lambda P.\lambda w.\exists x \in human[P_w(z)]\}$

c. $[\![\, (12)\,]\!]^o = \lambda w.\exists x \in human[ran_w(x)]$

$[\![\, (12)\,]\!]^{alt} = \{\lambda w.\exists x \in human[ran_w(x)]\}$

Recall that the particle *ka* can also participate in the formation of the disjunction, as in (15). Uegaki (2018) assumes that in *ka*-disjunctions, *ka* occurs in each disjunct, and the disjunctive head can be phonologically null (written as $\varnothing$ in (16-a)).[4] On this analysis, the sentence in (15) has the simplified LF in (16-a). As a result, we derive for this sentence the interpretation in (16-b). For details about this derivation, I refer the reader to (Uegaki, 2018, 21).

(15) Hanako-ka Jiro-ka-ga hashitta.
Hanako-KA Jiro-KA-NOM ran

[4]See e.g., Slade (2011), Mitrovic and Sauerland (2014), Szabolcsi (2015), on the structure of complex coordinations.

'Either Hanako or Jiro ran.'

(16) a. [[[Hanako-ka ∅ Jiro-ka] ∃] hashitta]

b. $[\![(15)]\!]^{o} = \lambda w.ran_w(h) \vee ran_w(j)$

$[\![(15)]\!]^{alt} = \{\lambda w.ran_w(h) \vee ran_w(j)\}$

In this section, I have reviewed the characteristic properties of the first type of interrogative particles, illustrating them with Japanese *ka*. In addition, I have presented Uegaki's (2018) uniform analyis of all of the uses of this particle. Next, I turn to the second type of interrogative particles discussed in the literature. Among other differences, one crucial difference between particles of the second type and particles of the first type is that the former are restricted to interrogatives.

2.2.2 Type 2: Hindi-Urdu *kya:*

I illustrate the properties of the second type of interrogative particles by discussing Hindi-Urdu *kya:* (Biezma et al. 2015, Bhatt and Dayal 2020). Bhatt and Dayal (2020) mention that other possible candidates are similar particles in Odia and Bangla (Syed and Dash, 2017), Italian *che* and Slovenian *kaj*. To determine whether these interrogative particles truly belong to this type, further investigation is required.

Example (17) shows that questions in Hindi-Urdu are formed using a raising intonation on the verb (17-a), optionally co-occuring with the interrogative particle *kya:* (17-b).[5]

[5] As shown in (i), *kya:* can also function as a *wh*-word meaning 'what'.

(i) Anu=ne Uma=ko kya: [diya:]↓?
Anu=ERG Uma=ACC what give.PFV
'What did Anu give to Uma?'

Biezma et al. (2015) show that the interrogative particle *kya:* and the *wh*-word *kya:* do not share the same prosody. Specifically, the former has a flat intonation, whereas the latter *kya:* has a H* pitch accent. Whether these two *kya:* are accidentally homophonous or have a deeper connection is not addressed in Biezma et al. (2015) or in Bhatt and Dayal (2020).

(17) a. Anu=ne Uma=ko kita:b [di:]↑?
Anu=ERG Uma=ACC book.F give.PFV.F
'Did Anu give a/the book to Uma?'

b. Kya: Anu=ne Uma=ko kita:b [di:]↑?
KYA Anu=ERG Uma=ACC book.F give.PFV.F
'Did Anu give a/the book to Uma?' (Bhatt and Dayal, 2020)

In contrast to Japanese *ka*, the use of *kya:* is restricted to polar questions (17-b) and alternative questions (18-a). Example (18-b) shows that *kya:* cannot occur in *wh*-questions. As in polar questions, the use of *kya:* in alternative questions is optional.

(18) a. (Kya:) tum ca:i pi-yoge↑ ya: coffee?
KYA you tea drink-FUT.2MPL or coffee
'Will you drink tea or (will you drink) coffee?'

b. *Kya: kis=ne uma=ko kita:b di:?
KYA who=ERG Uma=DAT book.F give.PFV.F
(Int.) 'Who gave Uma a/the book?' (Bhatt and Dayal, 2020)

Another difference between Japanese *ka* and Hindi-Urdu *kya:* is the following. Unlike *ka*, *kya:* cannot occur in all embedded interrogatives. For instance, example (19) shows that *kya:* cannot be embedded under *ja:n* 'know' whether it appears in a polar question or in an alternative question.[6]

(19) a. *Anu ja:n-ti: hai [ki kya: tum ca:i piyoge].
Anu.F know.HAB.F be.PRS.SG that KYA you tea drink.FUT.2MPL
(Int.) 'Anu knows whether you will drink tea.'

b. *Anu ja:n-ti: hai [ki kya: tum ca:i piyoge ya: nahī:].
Anu.F know.HAB.F be.PRS.SG that KYA you tea drink.FUT or not
(Int.) 'Anu knows whether you will drink tea or not.' (Bhatt and Dayal, 2020)

The fact that *kya:* cannot occur in the embedded alternative question in (19-b) is particularly important. As shown in (20-a), the predicate *ja:n* cannot embed a polar question even when *kya:* is

[6] The data are actually a bit more complicated than what is presented here. For instance, *kya:* can occur in a polar question embedded under *ja:n* 'know' when this predicate is negated. I refer the reader to Bhatt and Dayal (2020) for further details.

absent. Thus, the fact that the sentence in (19-a) is ill-formed could be due to another reason (for instance, *ja:n* cannot embed questions in Hindi-Urdu). However, example (20-b) shows that alternative questions can be embedded under *ja:n* 'know' when *kya:* is absent. This suggests that the ungrammaticality of the sentence in (19-b) is due to the presence of *kya:*.

(20) a. *Anu ja:n-ti: hai [ki tum ca:i piyoge].
Anu.F know.HAB.F be.PRS.SG that you tea drink.FUT.2MPL
(Int.) 'Anu knows whether you will drink tea.'

b. Anu ja:n-ti: hai [ki tum ca:i piyoge ya: nahĩ:].
Anu.F know.HAB.F be.PRS.SG that you tea drink.FUT or not
'Anu knows whether you will drink tea or not.' (Bhatt and Dayal, 2020)

The use of *kya:* is not banned from all embedded interrogatives. For instance, example (21) shows that a polar question containing *kya:* can be embedded under the rogative predicate *pu:ch* 'ask'. Bhatt and Dayal (2020) claim that the acceptability of *kya:* in embedded interrogatives matches the availability of subject-verb inversion in English. I refer the reader to Bhatt and Dayal (2020) for details.

(21) Ṭi:car=ne Anu=se pu:ch-a: [ki kya: vo ca:i piyegi:].
teacher=ERG Anu=from ask-PFV that KYA s/he tea drink.FUT.3FSG
'The teacher asked Anu whether she would drink tea.' (Bhatt and Dayal, 2020)

Although in all of the examples given above, *kya:* appears in clause-initial position, Bhatt and Dayal (2020) show that this particle can occur in almost any clausal position, as illustrated in (22).

(22) (kya:) Anu=ne (kya:) Uma=ko (kya:) kita:b (%kya:) di: (kya:)?
KYA Anu=ERG KYA Uma=ACC KYA book.F KYA give.PFV.F KYA
'Did Anu give a/the book to Uma?' (Bhatt and Dayal, 2020)

As mentioned by Biezma et al. (2015) and Bhatt and Dayal (2020), *kya:* partitions the clause in an interesting way. When the position of *kya:* varies, the expressions that can be questioned vary as

well. Specifically, the expressions that follow *kya:* – unlike those that precede it – can be focused affecting the interpretation of the question. To illustrate this claim, I review two tests provided by Bhatt and Dayal (2020). The first test is about the formation of alternative questions. In alternative questions, the disjuncts can only involve phrases that follow *kya*. Example (23) shows that when *kya:* is clause-initial, an alternative question can be formed using any phrases in the clause. In contrast, when *kya:* is not clause-initial, alternative questions can be formed using phrases that follow *kya:* but not phrases that precede it, as illustrated in (24).

(23) **Kya:** Ram=ne Sita=ko kal kita:b di: thi: ...
KYA Ram=ERG Sita-DAT yesterday book.F give.PFV.F be.PST.F
'Had Ram given a/the book to Sita yesterday ...'

a. ya: Mina=ne?
or Mina=ERG
'or had Mina?'

b. ya: Vina=ko?
or Vina=DAT
'or to Mina?'

c. ya: parsõ?
or day.before.yesterday
'or the day before yesterday?'

d. ya: magazine?
or magazine
'or a magazine?'

(24) Ram=ne Sita=ko **kya:** kal kita:b di: thi: ...
Ram=ERG Sita=DAT KYA yesterday book.F give.PFV.F be.PST.F
'Had Ram given a/the book to Sita yesterday ...'

a. #ya: Mina=ne?
or Mina=ERG
'or had Mina?'

b. #ya: Vina=ko?
or Vina=DAT

'or to Mina?'

c. ya: parso?
or day.before.yesterday
'or the day before yesterday?'

d. ya: magazine?
or magazine
'or a magazine?'

The second test shows that negative responses can only target phrases that follow *kya:*. That is, when *kya:* is clause-initial, any phrases in the clause can be negated, as illustrated in (25). In contrast, example (26) shows that when *kya:* is not clause-initial, phrases that follow it but not those that precede it can be negated.

(25) Kya: Ram=ne Sita=ko kal kita:b di: thi:?
KYA Ram=ERG Sita-DAT yesterday book.F give.PFV.F be.PST.F
'Had Ram given a/the book to Sita yesterday?'

a. Nahĩ:, Shyam=ne di: thi:.
no Shyam=ERG give.PFV.F be.PST.F
'No, Shyam did.'

b. Nahĩ:, Uma=ko di: thi:.
no Uma=ACC give.PFV.F be.PST.F
'No, to Uma.'

c. Nahĩ:, parso di: thi:.
no day.before.yesterday give.PFV.F be.PST.F
'No, the day before yesterday.'

d. Nahĩ:, magazine di: thi:.
no magazine give.PFV.F be.PST.F
'No, he gave her a magazine.'

(26) Ram=ne Sita=ko kya: kal kita:b di: thi:?
Ram=ERG Sita=DAT KYA yesterday book.F give.PFV.F be.PST.F
'Had Ram given a/the book to Sita yesterday?'

a. #Nahĩ:, Shyam=ne di: thi:.
no Shyam=ERG give.PFV.F be.PST.F
'No, Shyam did.'

b. #Nahĩ:, Uma=ko di: thi:.
no Uma=ACC give.PFV.F be.PST.F
'No, to Uma.'

c. Nahĩ:, parso di: thi:.
no day.before.yesterday give.PFV.F be.PST.F
'No, the day before yesterday.'

d. Nahĩ:, magazine di: thi:.
no magazine give.PFV.F be.PST.F
'No, he gave her a magazine.'

These two tests suggest that *kya:*, unlike Japanese *ka*, is a focus-sensitive interrogative particle, which can associate with any phrase that follows it. To sum up, the differences between Japanese *ka* and Hindi-Urdu *kya:* are the following:

(i) Unlike *ka*, *kya:* cannot occur in *wh*-questions;

(ii) Unlike *ka*, *kya:* cannot be embedded under all question-embedding predicates;

(iii) Unlike *ka*, *kya:* is restricted to interrogatives;

(iv) Unlike *ka*, *kya:* is focus-sensitive.

These differences are highlighted in the table below which summarizes the uses of these two particles.

	Mandatory?	Polar Q? Alternative Q?	*Wh*-Q?	Embedded Q?	Q only?	Focus sensitive?
Japanese	no	yes	yes	yes	no	no
Hindi-Urdu	no	yes	no	sometimes	yes	yes

Figure 2.2: Characteristic uses of Japanese *ka* and Hindi-Urdu *kya:*

To capture the behavior of the interrogative particle *kya:*, Bhatt and Dayal (2020) claim that syntactically, *kya:* occurs in a projection above CP, called ForceP. The head of this projection – Force – carries a feature [+CTR] (perspectival center) which makes an interrogative a centered question (Dayal, 2020). Dayal's (2020) more detailed definition of ForceP will be provided very shortly. In Hindi-Urdu, *kya:* is the spell-out of this head. On this analysis, the interrogative in (27-a) has the simplified structure in (27-b). Interrogatives like (28-a) in which *kya:* does not appear in initial position share the same base structure as the interrogative in (27-a). To derive their surface structure, some expressions then move to a projection above *kya:*, as illustrated in (28-b).

(27) a. **Kya:** Anu=ne Uma=ko kita:b di:?
KYA Anu=ERG Uma=ACC book.F give.PFV.F
'Did Anu give a/the book to Uma?'

b. [$_{ForceP}$ **kya:** [$_{CP}$ $C_{[+Q]}$ [$_{TP}$ Anu=ne Uma=ko kita:b di:]]]

(28) a. Anu=ne **kya:** Uma=ko kita:b di:?
Anu=ERG KYA Uma=ACC book.F give.PFV.F
'Did Anu give a/the book to Uma?'

b. [Anu=ne$_i$ [$_{ForceP}$ **kya:** [$_{CP}$ $C_{[+Q]}$ [$_{TP}$ t_i Uma=ko kita:b di:]]]]

On the semantic side, Bhatt and Dayal (2020) claim that *kya:* combines with a set of propositions and encodes a presupposition that this set of propositions is a singleton set. When defined, it returns

the same set. Their denotation of *kya:* is given below.

(29) $[\![\textbf{kya:}]\!] = \lambda Q : \exists p \in Q[\forall q[q \in Q \rightarrow q = p]].Q$

In parallel, Dayal (2020) defines the head of the ForceP projection as in (30). $\text{Force}_{[+CTR]}$ introduces an argument whose perspective with respect to a question Q is relevant (the judge), and introduces the presupposition that Q is potentially active for this judge. In matrix interrogatives, the judge is the speaker whereas in embedded interrogatives, it is the matrix subject.

(30) $[\![\text{Force}_{[+CTR]}]\!] = \lambda Q.\lambda x : Q \text{ is P-active for } x.Q$

Because both Bhatt and Dayal (2020) and Dayal (2020) claim that *kya:* is the spell-out of $\text{Force}_{[+CTR]}$ in Hindi-Urdi, I combine these two denotations in (31). I will use this new denotation to show how their analyses capture the characteristic properties of *kya:*.

(31) $[\![\textbf{kya:}]\!] = \lambda Q.\lambda x : \exists p \in Q[\forall q[q \in Q \rightarrow q = p]] \wedge Q \text{ is P-active for } x.\ Q$

To start with, let us consider again example (32). This interrogative has the simplified LF in (33-a). On a singleton analysis for polar questions (Biezma and Rawlins 2012, Roberts 2012, Roelofsen and Farkas 2015, a.o.), we obtain a singleton set which contains the proposition *that Anu gave a book to Uma* at the level of CP, as in (33-b). When *kya:* combines with this set, it returns the same singleton set only if this question is active for the speaker, as illustrated in (33-c).

(32) **Kya:** Anu=ne Uma=ko kita:b [di:]↑
KYA Anu=ERG Uma=ACC book.F give.PFV.F
'Did Anu give a/the book to Uma?'

(33) a. $[_{ForceP}$ **kya:** $[_{CP}\ C_{[+Q]}\ [_{TP}$ Anu=ne Uma=ko kita:b [di:]↑ $]]]$

b. $[\![\text{CP}]\!] = \{\hat{}gave(book)(u)(a)\}$

c. $[\![(32)]\!] = [\![\textbf{kya:}]\!] ([\![\text{CP}]\!]) = \{\hat{}gave(book)(u)(a)\}$

Defined iff $\{\hat{}gave(book)(u)(a)\}$ is P-active for S

Recall that one characteristic property of *kya:* is that it is restricted to polar and alternative questions. The *wh*-question in (34) is ill-formed. Unlike polar questions, *wh*-questions denote sets of propositions which are not singleton-sets. As a result, when *kya:* combines with a *wh*-question, the first part of its presupposition will not be satisfied. As shown in (35), the composition clashes due to a presupposition failure.[7]

(34) *Kya: kis=ne uma=ko kita:b di:?
KYA who=ERG Uma=DAT book.F give.PFV.F
(Int.) 'Who gave Uma a/the book?'

(35) a. $[_{ForceP}$ **kya:** $[_{CP}\ C_{[+Q]}\ [_{TP}$ kis=ne uma=ko kita:b di: $]]]$

b. $[\![\ CP\ ]\!] = \{\hat{}gave(book)(u)(a), \hat{}gave(book)(u)(b), \hat{}gave(book)(u)(c)\}$

c. $[\![$ **kya:** $]\!]([\![\ CP\ ]\!]) = \#$

Another major difference between *kya:* and Japanese *ka* is that *kya:*, unlike *ka*, cannot occur in declaratives, as illustrated again in (36). Because declaratives denote propositions and not sets of propositions, example (37) shows that in this case, the semantic composition clashes due to a type-mismatch.

(36) *Kya: Anu=ne Uma=ko kita:b [di:]↓
KYA Anu=ERG Uma=ACC book.F give.PFV.F
(Int.) 'Did Anu give a/the book to Uma?'

(37) a. $[_{ForceP}$ **kya:** $[_{CP}\ C_{[-Q]}\ [_{TP}$ Anu=ne Uma=ko kita:b [di:]↓ $]]]$

b. $[\![\ CP\ ]\!] = \hat{}gave(book)(u)(a)$

c. $[\![$ **kya:** $]\!]([\![\ CP\ ]\!]) =$??

[7] Although I leave the *wh*-word in situ in the structure in (35-a), I do not want to claim that *wh*-words are necessarily interpreted in situ in Hindi-Urdu. No matter which analysis of *wh*-questions one adopts for Hindi-Urdu, a presupposition failure will be derived in (35).

Following McCloskey (2006), Bhatt and Dayal (2020) and Dayal (2020) further claim that question-embedding predicates differ in the type of complements they can take. In particular, while some predicates can only take regular CP complements which denote questions, others may also take ForceP complements which denote centered questions. In Hindi-Urdu, *ja:n* 'know' belongs to the former group, whereas *pu:ch* 'ask' belongs to the latter group, as illustrated in (38).

(38) a. *ja:n* 'know':

$[_{CP}\ C_{[+Q]}\ [_{TP}\ \ldots\ ]]$

b. *pu:ch* 'ask':

$[_{ForceP}$ **kya:** $[_{CP}\ C_{[+Q]}\ [_{TP}\ \ldots\ ]]]$

As discussed in detail in Dayal (2020), this is due to the fact that when *kya:* is embedded under *ja:n* 'know', its presupposition contradicts the assertion (39). In contrast, when *kya:* is embedded under *pu:ch* 'ask', its presupposition is consistent with the assertion, as illustrated in (40). This captures another characteristic property of *kya:*, namely that it cannot be embedded under all question-embedding predicates.

(39) a. *Anu ja:n-ti: hai [ki **kya:** tum ca:i piyoge].
Anu.F know.HAB.F be.PRS.SG that KYA you tea drink.FUT.2MPL
(Int.) 'Anu knows whether you will drink tea.'

b. *Asserts:* Anu knows the answer to the question *Will you drink tea?*.

c. *Presupposes:* The question *Will you drink tea?* is potentially active for Anu.

(40) a. Ṭi:car=ne Anu=se pu:ch-a: [ki **kya:** vo ca:i piyegi:].
teacher=ERG Anu=from ask-PFV that KYA s/he tea drink.FUT.3FSG
'The teacher asked Anu whether she would drink tea.'

b. *Asserts:* The teacher wants to know the answer to the question *Will you drink tea?*

c. *Presupposes:* The question *Will you drink tea?* is potentially active for the teacher.

The last difference between *kya:* and Japanese *ka* is that *kya:*, unlike *ka:*, is focus-sensitive. Focusing on this last property of *kya:*, Biezma et al. (2015) analyze this particle as a focus-sensitive operator which constrains the alternatives that the speaker is entertaining. Their proposal for interrogatives involving *kya:* is given below, and is couched in terms of Questions under Discussions (QUDs).

(41) $[\![[_{[Q]} [\ldots \textbf{kya:} \ m_F \ldots]]]\!]^c = [\![[\ldots \ m \ \ldots]]\!]^c$ defined only if:

a. $[\![[\ldots \ m \ \ldots]]\!]^c \subseteq \text{QUD}(M_{kya})$

b. $| [\![[\ldots \ m \ \ldots]]\!]^c \cup \text{QUD}(M_{kya}) | > 1$

c. $\text{QUD}(M_{kya}) \subseteq [\![[\ldots \ m_F \ldots]]\!]^f$

In its current version, this analysis however cannot capture all the other properties of *kya:*. What is missing at this point is a uniform analysis of all of the uses of this particle. Further work would be required to see if combining Bhatt and Dayal's (2020) and Dayal's (2020) analyses on the one hand, with Biezma et al. (2015)'s analysis on the other other hand, could yield a desirable result.

To sum up, I have reviewed in this section the characteristic properties of the second type of interrogative particles, illustrating them with Hindi-Urdu *kya:*. In addition, I have presented Bhatt and Dayal's (2020), Dayal's (2020) and Biezma et al.'s (2020) analyses of this particle. We have seen that none of them can – in its current version – account for all the characteristic properties of this particle. Next, I turn to the third type of interrogative particles, which I will be focusing on in this dissertation. The major differences between these particles and the second type of interrogative particles is that they are mandatory in both polar and alternative questions, and that they can be embedded under all types of question-embedding predicates.

2.2.3 Type 3: Polar interrogative particles

In the rest of this dissertation, I will call particles belonging to this third type polar interrogative particles (PolQ). In this section, I first present their signature properties with Finnish and Turkish, and

then discuss other languages whose interrogative particles may belong to this category as well. Unless otherwise indicated, all the data presented in this section have been collected through elicitation sessions with one Finnish speaker and two Turkish speakers.

In Finnish and Turkish, polar questions are formed using the PolQs *-kO* and *mI* respectively, as illustrated in (42).

(42) a. Lähti-kö Mari? [Finnish]
left-PolQ Mari
'Did Mari leave?'

b. Oya Dilara'yı mı öptü? [Turkish]
Oya Dilara-ACC PolQ kiss.PAST
'Did Oya kiss Dilara?'

One major difference between PolQs and other interrogative particles is that PolQs are mandatory. Example (43) shows that when the PolQs *-kO* and *mI* are absent, the polar questions are no longer well-formed.

(43) a. *Lähti Mari? [Finnish]
left Mari
(Int.) 'Did Mari leave?'

b. *Oya Dilara'yı öptü? [Turkish]
Oya Dilara-ACC kiss.PAST
(Int.) 'Did Oya kiss Dilara?'

Like Hindi-Urdu *kya:* and unlike Japanese *ka*, Finnish *-kO* and Turkish *mI* are restricted to interrogatives. None of these PolQs can participate in the formation of indefinites or disjunctions for instance.[8] PolQs are further restricted to polar questions (42) and alternative questions (44). Example (45) shows that these particles cannot participate in the formation of *wh*-questions.

[8] Atlamaz (2015) notes that Turkish *mI* can appear in certain conditionals as well, as shown below.

(i) Ali geldi **mi** gider-iz. [Turkish]
Ali come.PAST PolQ go-1PL
'We'll leave when Ali comes.'

(44) a. Lähti-**kö** Mari vai Pekka? [Finnish]
left-PolQ Mari or Pekka
'Did Mari leave or did Pekka leave?'

b. Oya Dilara'yı **mı** öptü (yoksa) Ali'yi **mi**? [Turkish]
Oya Dilara-ACC PolQ kiss.PAST or Ali-ACC PolQ
'Did Oya kiss Dilara or did she kiss Ali?'

(45) a. *Kuka-**ko** lähti? [Finnish]
who-PolQ left
(Int.) 'Who left?'

b. *Kim Dilara'yı **mı** öptü? [Turkish]
who Dilara-ACC PolQ kiss.PAST
(Int.) 'Who kissed Dilara?'

Just like in polar questions, the use of PolQs is mandatory in alternative questions. In Turkish, both instances of *mI* are obligatory.

(46) a. *Lähti Mari vai Pekka? [Finnish]
left Mari or Pekka
(Int.) 'Did Mari leave or did Pekka leave?'

b. *Oya Dilara'yı öptü (yoksa) Ali'yi? [Turkish]
Oya Dilara-ACC kiss.PAST or Ali-ACC
(Int.) 'Did Oya kiss Dilara or did she kiss Ali?'

Another important difference between Hindi-Urdu *kya:* and PolQs is that unlike *kya:*, PolQs can be

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The fact that some expressions restricted to interrogatives can appear in conditionals or in structures comparable to conditionals is quite common across languages, even in languages which do not necessarily have PolQs. For instance, French *si* can introduce both embedded questions and antecedents of conditionals.

(ii) a. Je me demande **si** Zoé viendra. [French]
I me ask whether Zoe come.FUT
'I wonder whether Zoe will come.'
b. **Si** Zoé vient, je serai contente.
if Zoe comes I be.FUT happy
'If Zoe comes, I will be happy.'

Whether these expressions should have a unified analysis in both interrogatives and conditionals is a question that is outside the scope of this dissertation.

embedded under all question-embedding predicates. This is illustrated in (47) and (48) for Finnish and Turkish respectively. As illustrated in these examples, PolQs *-kO* and *mI* can be embedded under rogative predicates like 'ask' and 'wonder' and responsive predicates like 'know' .

(47) a. Jenna kysyi [on-**ko** huomenna hyvä sää]. [Finnish]
Jenna asked is-PolQ tomorrow good weather
'Jenna asked whether tomorrow's weather will be nice.'

b. Jenna tietää [on-**ko** huomenna hyvä sää].
Jenna knows is-PolQ tomorrow good weather
'Jenna knows whether tomorrow's weather will be nice.'

(48) a. Ali [Oya *Sessizev*'i **mi** aldı] merak ediyor. [Turkish]
Ali Oya *Sessizev*-ACC PolQ buy.PAST wonder
'Ali wonders whether Oya bought *Sessizev*.'

b. Ali [Oya *Sessizev*'i **mi** aldı] biliyor.
Ali Oya *Sessizev*-ACC PolQ buy.PAST know
'Ali knows whether Oya bought *Sessizev*.'

In Finnish, PolQ *-kO* is a second position clitic (Nevis, 1986). Although in all of the examples given above, *-kO* was attached to the predicate, it can also attach to another expression affecting the interpretation of the question, as illustrated in (56). As for Turkish *mI*, it doesn't have to follow the object. Example (57) shows that it can follow another constituent – in this case, the subject – affecting the interpretation of the question as well.

(49) a. Lähti-**kö** Mari? [Finnish]
left-PolQ Mari
'Did Mari leave?'

b. Mari-**ko** lähti?
Mari-PolQ left
'Was it Mari who left?'

(50) a. Oya Dilara'yı **mı** öptü?
Oya Dilara-ACC PolQ kiss.PAST

[Turkish]

'Did Oya kiss Dilara?'

b. Oya **mı** Dilara'yı öptü?
Oya PolQ Dilara-ACC kiss.PAST
'Was it Oya who kissed Dilara?'

These examples show that PolQs, just like Hindi-Urdu *kya:* and unlike Japanese *ka* are focus-sensitive. This property of PolQs will be discussed in more details in Section 2.3.

To sum up, the differences between Japanese *ka* and PolQs are the following:

(i) Unlike *ka*, PolQs are mandatory;

(ii) Unlike *ka*, PolQs cannot occur in *wh*-questions;

(iii) Unlike *ka*, PolQs are restricted to interrogatives;

(iv) Unlike *ka*, PolQs are focus-sensitive.

And the differences between Hindi-Urdu *kya:* and PolQs are the following:

(i) Unlike *kya:*, PolQs are mandatory;

(ii) Unlike *kya:*, PolQs can be embedded under all question-embedding predicates.

These differences are highlighted in the table below which summarizes the uses of the three types of particles.

	Mandatory?	Polar Q? Alternative Q?	*Wh*-Q?	Embedded Q?	Q only?	Focus sensitive?
Japanese	no	yes	yes	yes	no	no
Hindi-Urdu	no	yes	no	sometimes	yes	yes
Finnish	yes	yes	no	yes	yes	yes
Turkish	yes	yes	no	yes	yes	yes

Figure 2.3: Characteristic uses of the three types of interrogative particles

Up to now, I have illustrated the signature properties of PolQs with Finnish *-kO* and Turkish *mI*. Although there is very few literature on these particles, they may be found in a number of other unrelated languages. For instance, other possible candidates are Quechua *chu* (Juan Carlos Romero Ventura, p.c.) and Bulgarian *li* (Rudin, 2012). To determine whether these particles are truly PolQs or rather belong to the second type of interrogative particles, further work is required. In the rest of this section, I present another instance of PolQ in a language not related to Finnish or Turkish, namely, Russian *li*. *Li*, just like Finnish *-kO* and Turkish *mI*, is restricted to interrogatives, it does not participate in the formation of e.g., indefinites and disjunction in declaratives. Example (51) further shows that *li* is restricted to polar and alternative questions.

(51) a. Prish-l-a **li** Zoj-a? [Russian]
come-PST-FEM PolQ Zoj-NOM
'Did Zoe come?'

b. Zoj-a prish-l-a **ili** net?
Zoj-NOM come-PST-FEM or not
'Did Zoe come or not?' (Lena Borise, p.c.)

Like Finnish *-kO* and Turkish *mI* and unlike Hindi-Urdu *kya:*, Russian *li* can be embedded under both rogative predicates and responsive predicates, as illustrated in (52).

(52) a. Ja spros-i-l-a [prish-l-a li Zoj-a].
1SG ask-TH-PST-FEM come-PST-FEM PolQ Zoj-NOM
'I asked whether Zoe came.'

b. Ja zna-ju [prixod-i-l-a li Zoj-a].
1SG know-PRS-1SG come-TH-PST-FEM PolQ Zoj-NOM
'I know whether Zoe came.' (Lena Borise, p.c.)

Another property that Russian *li* shares with PolQs is that it is focus-sensitive, as shown below.

(53) a. Prish-l-a li Zoj-a?
come-PST-FEM PolQ Zoj-NOM
'Did Zoe come?'

b. Zoj-a li prish-l-a?
Zoj-NOM PolQ come-PST-FEM
'Was it Zoe who came?' (Lena Borise, p.c.)

At first sight, it seems however that *li* differs from Finnish *-kO* and Turkish *mI* in that its use is not mandatory in matrix interrogatives. The polar question in (54) without *li* is well-formed. Note however that in this case, a raising intonation is required.

(54) Prishla Zoj-a↑?
come.PST Zoe.NOM
'Did Zoe come?' (Lena Borise, p.c.)

Thus, several strategies are available in Russian to form polar questions: one can either use PolQ *li* or a raising intonation. When speakers choose the PolQ strategy, the use of the interrogative particle could be mandatory. One way to verify this is to look at embedded interrogatives. Because raising intonation is a root phenomenon, this strategy is not available to embed a question. In this case, one can thus only use the PolQ strategy. Interestingly, example (55) shows that in embedded interrogatives, PolQ *li* is mandatory.

(55) a. Ja spros-i-l-a [prish-l-a *(li) Zoj-a].
1SG ask-TH-PST-FEM come-PST-FEM PolQ Zoj-NOM

'I asked whether Zoe came.'

b. Ja zna-ju [prixod-i-l-a *(li) Zoj-a].
1SG know-PRS-1SG come-TH-PST-FEM PolQ Zoj-NOM
'I know whether Zoe came (or not).' (Lena Borise, p.c.)

The above example suggests that *li* does not differ from other PolQs in the end. Russian differs from Finnish and Turkish in that it has multiple strategies to form polar questions. However, when one chooses the PolQ strategy, the use of PolQ *li* is mandatory.

To summarize, I provided in this section the characteristic properties of PolQs, showing at the same time that PolQs constitute a third type of interrogative particles. I have further identified three instances of PolQs in three unrelated languages: Finnish *-kO*, Turkish *mI* and Russian *li*. Although I limited my discussion to these three particles, PolQs are presumably more widely spread across languages than one could have previously thought. To indentify other instance of PolQs, further work is required. In the following sections, I focus on Finnish *-kO* and Turkish *mI* and I discuss in detail additional properties of PolQs and of the questions where they occur.

2.3 Focus-sensitivity

As previously mentioned, PolQs are focus-sensitive. Example (56) shows that in Finnish, when PolQ *-kO* attaches to the subject, the corresponding polar question can only be used as a follow-up question to *Who saw Mari?*. In contrast, when *-kO* attaches to the object, the corresponding polar question can only be used as a follow-up question to *Who did Jenna see?*, as shown in (57). This suggests that the subject is focused in (56) whereas the object is focused in (57). Starting from now, I will use [ ] to highlight the PolQ and the constituent it associates with.

(56) [Subject-kO]

a. *Who saw Mari?* [Finnish]

[Jenna-**ko**] näki Marin?
Jenna-PolQ see.past Mari.acc
'Was it Jenna who saw Mari?'

b. *Who did Jenna see?*

#[Jenna-**ko**] näki Marin?
Jenna-PolQ see.past Mari.acc
'Was it Jenna who saw Mari?'

(57) [Object-**kO**]

a. *Who saw Mari?*

#[Marin-**ko**] Jenna näki?
Mari.acc-PolQ Jenna see.past
'Was it Mari that Jenna saw?'

b. *Who did Jenna see?*

[Marin-**ko**] Jenna näki?
Mari.acc-PolQ Jenna see.past
'Was it Mari that Jenna saw?'

Examples (58) and (59) show that the same is true of Turkish *mI*. Specifically, the constituent preceding the particle is focused.

(58) [Subject **mI**]

a. *Who kissed Dilara?* [Turkish]

[Oya **mı**] Dilara'yı öptü?
Oya PolQ Dilara-acc kiss.past
'Was it Oya who kissed Dilara?'

b. *Who did Oya kiss?*

#[Oya **mı**] Dilara'yı öptü?
Oya PolQ Dilara-acc kiss.past
'Was it Oya who kissed Dilara?'

(59) [Object **mI**]

a. *Who kissed Dilara?* [Turkish]

#Oya [Dilara'yı **mı**] öptü?
Oya Dilara-ACC PolQ kiss.PAST
'Was it Dilara that Oya kissed?'

b. *Who did Oya kiss?*

Oya [Dilara'yı **mı**] öptü?
Oya Dilara-ACC PolQ kiss.PAST
'Was it Dilara that Oya kissed?'

To confirm the fact that these two PolQs associate with the constituent they follow, I use Bhatt and Dayal's (2020) diagnostics. Recall that the first diagnostic is about the formation of alternative questions. The following examples show that in Finnish and Turkish, alternative questions can only be formed on phrases that precede the PolQs. This is illustrated in (60) and (61) for Finnish *-kO* and in (62) and (63) for Turkish *mI*.

(60) [Zoe-**ko**] osti eilen uuden pyörän ... [Finnish]
Zoe-PolQ buy.PST yesterday new bike ...
'Did Zoe buy a new bike yesterday ...

a. vai LOU?
or Lou

b. #vai KIRJAN?
or book

c. #vai TOISSAPäIVäNä?
or day.before.yesterday

d. #vai VUOKRASI?
or sell-PST

(61) [Pyörän-**kö**] Zoe osti eilen ...
bike-PolQ Zoe buy.PST yesterday ...
'Did Zoe buy a bike yesterday ...

a. #vai LOU?
or Lou

b. vai KIRJAN?
or book

c. #vai TOISSAPäIVäNä?
or the.day.before.yesterday

d. #vai VUOKRASI?
or sell.PST

(62) [Oya **mi**] dün yeni bir bisiklet al-di ... [Turkish]
Oya PolQ yesterday new one bike buy-PST
'Is it Oya who bought a new bike yesterday ...

a. Ali **mi**?
Ali PolQ

b. #önceki gün **mü**?
before day PolQ

c. #kitap **mi**?
book PolQ

d. #sat-ti **mi**?
sell-PST PolQ

(63) Oya [dün **mü**] yeni bir bisiklet al-di ...
Oya yesterday PolQ new one bike buy-PST
'Is it yesterday that Oya bought a new bike ...

a. #Ali **mi**?
Ali PolQ

b. önceki gün **mü**?
before day PolQ

c. #kitap **mi**?
book Q

d. #sat-ti **mi**?
sell-PST PolQ

The second diagnostic is about negative responses. Again, in Finnish and Turkish, the expressions that can be negated and thus targeted for corrected are the ones precedings the PolQs. Examples (64) and (65) illustrate this test in Finnish, and example (66) and (67) in Turkish.

(64) [Zoe-**ko**] osti eilen uuden pyörän? [Finnish]
Zoe-PolQ buy.PST yesterday new bike
'Did Zoe buy a new bike yesterday?'

a. Ei, vaan Lou.
no, but Lou

b. #Ei, vaan kirjan.
no but book

c. #Ei, vaan toissapäivänä.
no but day.before.yesterday

d. #Ei, vaan vuokrasi.
no but sell-PST

(65) [Pyörän-**kö**] Zoe osti eilen?
bike-PolQ Zoe buy.PST yesterday
'Did Zoe buy a bike yesterday?'

a. #Ei, vaan Lou.
no, but Lou

b. Ei, vaan kirjan.
no but book

c. #Ei, vaan toissapäivänä.
no but day.before.yesterday

d. #Ei, vaan vuokrasi.
no but sell-PST

(66) [Oya **mi**] dün yeni bir bisiklet al-di? [Turkish]
Oya PolQ yesterday new one bike buy-PST
'Is it Oya who bought a new bike yesterday?'

a. Hayir, Ali (aldi).
no Ali bought

b. #Hayir, önceki gün.
no before day

c. #Hayir, kitap.
no book

d. #Hayir, sat-ti.
no sell-PAST

(67) Oya [dün **mü**] yeni bir bisiklet al-di?
Oya yesterday PolQ new one bike buy-PST
'Is it yesterday that Oya bought a new bike?'

a. #Hayir, Ali (aldi).
no Ali bought

b. Hayir, önceki gün.
no before day

c. #Hayir, kitap.
no book

d. #Hayir, sat-ti.
no sell-PAST

To summarize, I have shown in this section that both Finnish *-kO* and Turkish *mI* are focus-sensitive and that they associate with the expression that precedes them. Next section discusses another property shared by the interrogatives that contain these PolQs: they all come with an existential presupposition.

2.4 Existential presupposition

The polar questions in (68) and (69), in Finnish and in Turkish respectively, both presuppose that someone left. In this section, I use some well-known diagnostics to confirm the presence of this

existential presupposition.

(68) a. [Mari-**ko**] lähti? [Finnish]
Mari-PolQ left
'Was it Mari who left?'

b. *Presupposition:* Someone left.

(69) a. [Oya **mı**] ayrildi? [Turkish]
Oya PolQ leave.PAST
'Was it Oya who left?'

b. *Presupposition:* Someone left.

To start with, let us consider example (70). When the speaker does not take for granted that someone left, the two polar questions given above are infelicitous. This suggests that both of them presuppose that someone left.

(70) a. *I don't know whether someone left there.* [Finnish]

#[Mari-**ko**] sinne lähti?
Mari-PolQ there leave.PAST
'Was it Mari who left there?'

b. *I don't know whether someone left.* [Turkish]

#[Oya **mı**] ayrildi?
Oya PolQ leave.PAST
'Was it Oya who left?'

Because PolQs like *-kO* and *mI* are restricted to interrogatives, several of the P-family tests cannot be used to diagnose the presence of the existential presupposition. For instance, one cannot embed these PolQs (and the questions in which they occur) in a polar question or in the antecedent of a conditional. The questions involving PolQs cannot be embedded under negation either. The only thing we can do is to negate them, as in examples (71) and (72). In this case, both questions presuppose that someone didn't leave, suggesting that the existential presupposition is triggered

after negation composes with the proposition out of which the question is formed.

(71) a. [Mari-ko] ei lähtenyt? [Finnish]
Mari-PolQ NEG leave.PAST
'Was it Mari who didn't leave?'

b. *Presupposition:* Someone didn't leave.

(72) a. [Oya mı] ayrilmadi? [Turkish]
Oya PolQ leave.*neg*.PAST
'Was it Oya who didn't leave?'

b. *Presupposition:* Someone didn't leave.

Another well-known test to diagnose the presence of presuppositions is the 'Hey, wait a minute' test. von Fintel (2004) claims that if a sentence *S* presupposes *P*, one can respond 'Hey, wait a minute. I didn't know that P.' In examples (73) and (74), I adapt this test to Finnish and Turkish respectively. These two examples show that the polar questions containing PolQ *-kO* and PolQ *mI* both presuppose that someone left.

(73) a. [Mari-ko] sinne lähti? [Finnish]
Mari-PolQ there leave.PAST
'Was it Mari who left there?'

b. Odotapas hetki. Minä en edes tiennyt että joku lähti sinne.
wait.IMP moment I NEG even know that someone leave.PAST there
'Wait a moment. I did not even know that someone left there.'

(74) a. [Oya mı] Dilara'yı öptü? [Turkish]
Oya PolQ Dilara-ACC kiss.??
'Was it Oya who kissed Dilara?'

b. Bi saniye bi saniye, birisinin Dilara'yı öptüğünden haberim
one sec one sec someone.GEN Dilara-ACC kiss.NOM.ABL news.1S.POSS
yoktu.
not.exist.PST
'Wait a second, I had no idea that someone had kissed Dilara.'

In this section, I have discussed another characteristic property of interrogatives containing PolQs. Specifically, I have shown that these questions come with an existential presupposition. Now that we know what questions containing PolQs presuppose, I turn to the interaction of PolQs with other logical operators (in particular, quantifiers) to better understand what these particles contribute and how the questions in which they occur are interpreted.

2.5 Interaction with logical operators

As previously discussed, the position of Turkish *mI* is more flexible than the position of Finnish *-kO*. This allows us to study the interaction of PolQ *mI* with other logical operators in more details in Turkish. For this reason, this section focuses on Turkish. In Turkish, when a universal quantifier co-occurs with negation in a declarative, the narrow scope interpretation of the universal quantifier is the preferred interpretation for all speakers. This is illustrated in example (75) for quantifiers occurring both in subject position and in object position.

(75) a. **Herkes** Ankara-ya git-**mi**-yor. [Turkish]
everyone Ankara-DAT go-NEG-PRES.PROG
$\neg > \forall$: 'It is not the case that everybody is going to Ankara.'
$\%\forall > \neg$: 'Nobody is going to Ankara.'

b. Dilara lab-da **herkes**-i gor-**me**-di.
Dilara lab-LOC everyone-ACC see-NEG-PAST
$\neg > \forall$: 'It is not the case that Dilara has seen everybody at the lab.'
$\%\forall > \neg$: 'Dilara has not seen anybody at the lab.'

If we turn these declaratives into polar questions by combining PolQ *mI* with the universal quantifier, that quantifier must now take wide scope with respect to negation, as illustrated in (76). Again, examples containing both subject and object quantifiers are provided.

(76) a. [**Herkes** **mi**] Ankara-ya git-**mi**-yor?
everyone PolQ Ankara-DAT go-NEG-PRES.PROG

[Turkish]

$*\neg > \forall$: 'It is not the case that everybody is going to Ankara?'
$\forall > \neg$: 'Is everybody such that they are not going to Ankara?'

b. Dilara lab-da [**herkes**-i **mi**] gor-**me**-di?
Dilara lab-LOC everyone-ACC PolQ see-NEG-PAST

c. $*\neg > \forall$: 'Is it not the case that Dilara has seen everyone at the lab?'
$\forall > \neg$: 'Is it everyone that Dilara has not seen at the lab?'

The above examples show that combining PolQ *mI* with a universal quantifier changes the scope of that quantifier. In particular, the quantifier takes a wider scope than the one it takes in declaratives. When *mI* combines with constituents other than the quantifier, we observe an interesting constrast depending on the position of *mI* with respect to the quantifier. Specifically, when the quantifier precedes *mI* on the surface, it must take wide scope with respect to negation. Example (77) shows that this is true of both subject and object quantifiers. In contrast, example (78) shows that when *herkes* follows *mI*, it must scope under negation just like in declaratives. Again, both subject and object quantifiers pattern the same.

(77) a. **Herkes** [Ankara-ya **mi**] git-**mi**-yor? [Turkish]
everyone Ankara-DAT PolQ go-NEG-PRES.PROG

b. $*\neg > \forall$: 'It it Ankara that not everyone is going to?'
$\forall > \neg$: 'Is it Ankara that no one is going to?'

c. Lab-da **herkes**-i [Dilara **mi**] gor-**me**-di?
lab-LOC everyone-ACC Dilara PolQ see-NEG-PAST
$*\neg > \forall$: 'Is it Dilara who has not seen everybody at the lab?'
$\forall > \neg$: 'Is it Dilara who has not seen anyone at the lab?'

(78) a. [Ankara-ya **mi**] **herkes** git-**mi**-yor?
Ankara-LOC PolQ everyone go-NEG-PRES.PROG
$\neg > \forall$: 'It it Ankara that not everyone is going to?'
$*\forall > \neg$: 'Is it Ankara that no one is going to?'

b. [Dilara **mi**] lab-da **herkes**-i gor-**me**-di?
Dilara PolQ lab-LOC everyone-ACC see-NEG-PAST
$\neg > \forall$: 'Is it Dilara who has not seen everybody at the lab?'
$*\forall > \neg$: 'Is it Dilara who has not seen anyone at the lab?'

These examples show that the surface position of *mI* with respect to a universal quantifier matters and affects the interpretation of the question. This is an interesting property which may or may not shared by other PolQs. As already mentioned, because Finnish *-kO* is a second-position clitic, one cannot elicit similar examples in this language. To determine whether this property is specific to Turkisk or is shared by other PolQs, one would need to find a language with a PolQ whose syntactic position in the question is flexible, just like Turkish *mI*.

The following table summarizes the generalizations I just established.

	Declaratives	[Q_F **mI**]	[XP_F **mI**]
Q precedes XP	$\neg > Q$	$Q > \neg$	$Q > \neg$
XP precedes Q	$\neg > Q$	$Q > \neg$	$\neg > Q$

Figure 2.4: Co-occurrence with a scope-taking expression and negation

To make sure that the contrast in the last column of this table is due to the presence of PolQ *mI* and is not specific to the universal quantifier *herkes*, I elicited further examples with a different quantifier, namely *iki öğrenci* 'two students'. Example (79) shows that when this numeral co-occurs with negation in a declarative, it can be interpreted with both narrow scope and wide scope with respect to negation. If we turn these declaratives into polar questions by combining *mI* with *iki öğrenci*, the latter must now take wide scope with respect to negation, as illustrated in (81).

(79) a. **Iki** öğrenci Ankara-ya git-**mi**-yor.
two student Ankara-*dat* go-NEG-PRES.PROG
'It is not the case that two students are going to Ankara.' $\neg > 2$
'There are two students who are not going to Ankara.' $2 > \neg$

b. Dilara lab-da **iki** öğrenci gor-**me**-di.
Dilara lab-LOC two student see-NEG-PAST
'It is not the case that Dilara has seen two students at the lab.' $\neg > 2$
'There are two students that Dilara has not seen at the lab.' $2 > \neg$

(80) a. [**Iki** öğrenci **mi**] Ankara-ya git-**mi**-yor?
two student PolQ Ankara-DAT go-NEG-PRES.PROG
'Is it two students who are not going to Ankara?' 2 > ¬

b. Dilara lab-da [**iki** öğrenci **mi**] gor-**me**-di?
Dilara lab-LOC two student PolQ see-NEG-PAST
'Is it two students that Dilara has not seen at the lab?' 2 > ¬

As was the case for the universal quantifier *herkes*, the surface position of *mI* with respect to the numeral *iki öğrenci* affects the interpretation of the question. This is illustrated in example (81). When the numeral precedes *mI* on the surface, it must take wide scope with respect to negation (81-a). In contrast, when *iki öğrenci* follows *mI*, it must scope under negation (81-b).

(81) a. **Iki** öğrenci [Ankara-ya **mi**] git-**mi**-yor?
two student Ankara-DAT PolQ go-NEG-PRES.PROG.3S
'Is it Ankara that two students are not going to?' 2 > ¬

b. [Dilara **mi**] lab-da **iki** öğrenci gor-**me**-di?
Dilara PolQ lab-LOC two student see-NEG-PAST
'It is Dilara who has not seen two students at the lab?' ¬ > 2

From these examples, we can conclude that the fact that the surface position of *mI* with respect to a quantifier affects the interpretation of a question is not specific to the universal quantifier *herkes*. Thus, it should be accounted for by any analysis of Turkish *mI*. As previously mentioned, future work will determine whether this property is shared by other PolQs as well. With this section ends the discussion of the properties of PolQs and of the questions where they occur. Next, I turn to previous analyses of Finnish *-kO* and Turkish *mI*.

2.6 Previous literature

Previous literature on PolQs is sparse. Except Atlamaz (2015) and Kamali and Krifka (2020), all of the work focuses on the syntactic properties of PolQs and the structure of the questions where

they occur. As far as I know, no unified analysis of these particles taking into account all of their properties discussed in the previous sections exists. One goal of this dissertation is to provide such an analysis (see Chapter 4). In this section, I first review the literature on Finnish *-kO* and then the literature on Turkish *mI*. In parallel, I discusses the challenges for the proposed analyses.

2.6.1 Finnish

The first analysis of Finnish *-kO* that has been proposed in the literature is that this particle is the spell-out of the interrogative $C_{[+Q]}$ head. On this analysis, *-kO* attracts a constituent which attaches to it if it is a head (e.g., the finite verb in (82)) or lands in Spec,CP if it is an XP, as in (83) (Holmberg et al., 1993; Holmberg, 2003).

(82) a. Lähti-kö Mari? [Finnish]
left-PolQ Mari
'Did Mari leave?'

b. $[_{CP}\ [_{C_{[+Q]}}\ [_{V}\ \text{lähti}_i\ ]\ [_{C_{[+Q]}}\ \textbf{kö}\ ]\ ]\ [_{TP}\ \text{Mari}\ t_i\ ]\ ]$

(83) a. Mari-ko lähti?
Mari-PolQ left
'Did Mari leave?'

b. $[_{CP}\ \text{Mari}_j\ [_{C_{[+Q]}}\ \textbf{kö}\ ]\ [_{TP}\ t_j\ \text{lähti}\ ]\ ]$

Holmberg (2014) rejects this analysis (and the variant he discusses in his paper) on the basis of the sentences in (84). In these examples, *-ko* attaches to an adjective, and the two elements preceding it (i.e., the demonstrative and the adjective) do not make up a constituent. Thus, these two elements cannot move to the left of *-ko*, challenging the analysis sketched in (82) and (83).

(84) a. Siitä vanhasta-ko kirjasta te puhutte? [Finnish]
that old.ela-PolQ book.ela you talk
'Are you talking about that OLD book?'

b. Tämän toisen-**ko** ystävän autolla te lopulta menitte?
this.GEN other.GEN.PolQ friend's car.ADE you finally went
'Was it this other friend's car that you eventually went in?' (Holmberg, 2014)

Another major challenge for the analysis that *-kO* is the spell-out of the interrogative $C_{[+Q]}$ head is the following. As discussed in Section 2.2.3, *-kO* is restricted to polar and alternative questions. If this particle were the spell-out of $C_{[+Q]}$, it should also participate in the formation of *wh*-questions contrary to fact. The relevant examples are provided again below.

(85) a. Lähti-**kö** Mari?
left-PolQ Mari
'Did Mari leave?'

b. Lähti-**kö** Mari vai Pekka?
left-PolQ Mari or Pekka
'Did Mari leave or did Pekka leave?'

c. *Kuka-**ko** lähti?
who-PolQ left
(Int.) 'Who left?'

Note that this challenge does not only concern Finnish *-kO*. Given that all PolQs are restricted to polar and alternative questions, none of them can be analyzed as the spell-out of the interrogative $C_{[+Q]}$ head.

Based on the comparison of PolQ *-kO* with the focus particle *-kin* 'too, either, even' which can occur in declaratives, Holmberg (2014) proposes another syntactic analysis of *-kO*. Before discussing his analysis, let us review the relevant syntactic properties of these two particles. To begin with, example (86) shows that even though no fronting is involved with *-kin*, this focus particle can be adjoined to pretty much any syntactic category, just like *-kO*.

(86) a. Me-**kin** ajettiin Ollin isän autolla kaupunkiin.
we-too drove Olli.GEN father.GEN car.ADE town.ILL
'We, too, drove into town in Olli's father's car.'

b. Me ajettiin-**kin** Ollin isän autolla kaupunkiin.
we drove-too Olli.GEN father.GEN car.ADE town.ILL
'We drove into town in Olli's father's car, after all.'

c. Me ajettiin Ollin-**kin** isän autolla kaupunkiin.
we drove Olli.GEN-too father.GEN car.ADE town.ILL
'We drove into town in OLLI's father's car, too.'

d. Me ajettiin Ollin isän-**kin** autolla kaupunkiin.
we drove Olli.GEN father.GEN-too car.ADE town.ILL
'We drove into town in Olli's FATHER's car, too.'

e. Me ajettiin Ollin isän autolla-**kin** kaupunkiin.
we drove Olli.GEN father.GEN car.ADE-too town.ILL
'We drove into town in Olli's father's CAR, too.'

f. Me ajettiin Ollin isän autolla kaupunkiin-**kin**.
we drove Olli.GEN father.GEN car.ADE town.ILL-too
'We drove into town, too, in Olli's father's car.'

Looking at the interplay between stress and the position of the two particles, Holmberg (2014) shows that both *-kin* and *-kO* can attach to a constituent larger than the focused expression. This is illustrated in (87) for the focus particle *kin* and in (88) for PolQ *-kO*. As indicated by the use of the capital letters, in all of these examples *Olli* is focused.

(87) a. Me ajettiin OLLIN-**kin** isän autolla kaupunkiin.
we drove Olli.GEN-too father.GEN car.ADE town.ILL

b. Me ajettiin OLLIN isän-**kin** autolla kaupunkiin.
we drove Olli.GEN father.GEN-too car.ADE town.ILL

c. Me ajettiin OLLIN isän autolla-**kin** kaupunkiin.
we drove Olli.GEN father.GEN car.ADE-too town.ILL
'We went into town in OLLI's father's car, too.'

(88) a. OLLIN-ko isän autolla te ajoitte?
Olli's-PolQ father's car.ADE you drove

b. OLLIN isän-kö autolla te ajoitte?
Olli's father's-PolQ car.ADE you drove

c. OLLIN isän autolla-ko te ajoitte?
Olli's father's car.ADE-PolQ you drove
'Was it OLLI's father's car that you took?'

In addition, examples (89) and (90) show that both *-kin* and *-ko* must c-command the focused expression. When this expression follows the particles, all the corresponding sentences are ill-formed.

(89) a. *Me ajettiin Ollin-**kin** ISÄN autolla kaupunkiin.
we drove Olli.GEN-too father.GEN car.ADE town.ILL

b. *Me ajettiin Ollin-**kin** isän AUTOLLA kaupunkiin.
we drove Olli.GEN-too father.GEN car.ADE town.ILL

c. *Me ajettiin Ollin isän-**kin** AUTOLLA kaupunkiin.
we drove Olli.GEN father.GEN-too car.ADE town.ILL

(90) a. *Ollin-ko ISÄN autolla te ajoitte?
Olli's-PolQ father's car.ADE you drove

b. *Ollin-ko isan AUTOLLA te ajoitte?
Olli's-PolQ father's car.ADE you drove

c. *Ollin isän-kö AUTOLLA te ajoitte?
Olli's father's-PolQ car.ADE you drove

Based on these examples, Holmberg (2014) proposes that the focus particle *-kin* and PolQ *-kO* can both merge anywhere in the tree as long as they c-command a [Foc] feature. On this analysis, the DP 'Olli's father car' in the examples above can be analyzed as follows.

(91) a. [[[[OLLIN$_{[Foc]}$]-ko/**kin** isän]-kö/**kin** autolla]-ko/**kin**]

b. [[[[Ollin]-*ko/***kin** ISÄN$_{[Foc]}$]-kö/**kin** autolla]-ko/**kin**]

c. [[[[Ollin]-*ko/***kin** isän]-*kö/***kin** AUTOLLA$_{[Foc]}$]-ko/**kin**]

The difference between PolQ *-kO* and the focus particle *-kin* is that *-kO*, unlike *kin*, must then move to the edge of the sentence. Thus, in addition to the [uFoc] feature, Holmberg (2014) proposes that PolQ *-kO* has a interpretable [wh] feature, which must be checked again an unvalued [uwh] feature

carried by the interrogative *C*—head. For further details about this analysis (and a variant), I refer the reader to Holmberg (2014).

Although appealing, this analysis cannot capture all the properties of PolQ *-kO* discussed in the previous sections. For instance, it says nothing about the reason why *-kO* is mandatory in polar and alternative questions. More needs to be said about the contribution of this particle and about the way it combines with other elements in the question to capture its characteristic properties.

2.6.2 Turkish

This section discusses previous literature on Turkish *mI*. Before reviewing the semantic literature, I first present and discuss the two syntactic analyses that have been proposed for this particle.

Kamali (2011) first entertains the hypothesis that PolQ *mI* attaches to the expression that carries the sentence stress. In Turkish, objects, some low adverbs, subjects of unaccusatives, negated verbs and narrowly focused expressions all carry the main stress in a declarative (marked as ' in (92)). As example (92) shows, PolQ *mI* can attach to all of these expressions. .

(92) a. Ali dün yemék **mi** yap-tı?
Ali yesterday dinner PolQ make-past
'Did Ali cook dinner yesterday?'

b. Ali hızlí **mı** yemek yap-ar?
Ali fast PolQ dinner make-AOR
'Does Ali cook (dinner) fast?'

c. Ocak-ta sú **mu** kayn-ıyor?
stove-LOC water PolQ boil-PROG
'(What's this bubbling?) Is there water boiling on the stove?'

d. Ali iskambil oyná-m-ıyor **mu**?
Ali card play-NEG-PROG PolQ
'Doesn't Ali play cards?'

e. ALI **mi** dün iskambil oyna-dı?
Ali PolQ yesterday card play-PST

'Was it Ali who played cards yesterday?' (Kamali, 2011)

As discussed by Kamali (2011), on such an account, *mI* should attach to all expressions carrying a prominent accent. However, example (93) shows that this is not necessarily the case. PolQ *mI* can appear in final position in a question even when an expression which does not immediately precedes it is stressed.

(93) a. ALI iskambil oyna-dı **mı**?
Ali card play-PST PolQ
'Did ALI play cards?'

b. Ali dün ISKAMBIL oyna-dı **mı**?
Ali yesterday card play-PST PolQ
'Did Ali play CARDS yesterday?' (Kamali, 2011)

Another challenge for the prosodic account just mentioned is the following. When occurring in a noun phrase, *mI* can attach to the whole NP (94-a), to a possessor (94-b), but not to an adjective (94-c) whether it is stressed or not.[9]

(94) a. Emre Ali'nin beyaz arabası-nı **mı** aldı?
Emre Ali-GEN white car-ACC PolQ buy-PST
'Did Emre buy Ali's white car?'

b. Emre ALI'NIN **mi** beyaz arabası-nı aldı?
Emre Ali-GEN PolQ white car-ACC buy-PST
'Did Emre buy ALI'S white car?'

c. *Emre Ali'nin BEYAZ mi arabası-nı aldı?
Emre Ali-GEN white PolQ car-ACC buy-PST
(Int.) 'Did Emre buy Ali's WHITE car?' (Kamali, 2011)

To get the intended meaning in (94-c), *mI* must attach the whole NP, as shown in (95). This shows that the placement of PolQ *mI* is not only driven by prosody, it is also subject to syntactic restric-

[9] A similar pattern in prepositional phrases. PolQ *mI* cannot follow the NP and precedes the preposition, whether the NP is stressed or not. See (Kamali, 2011, 157) for details.

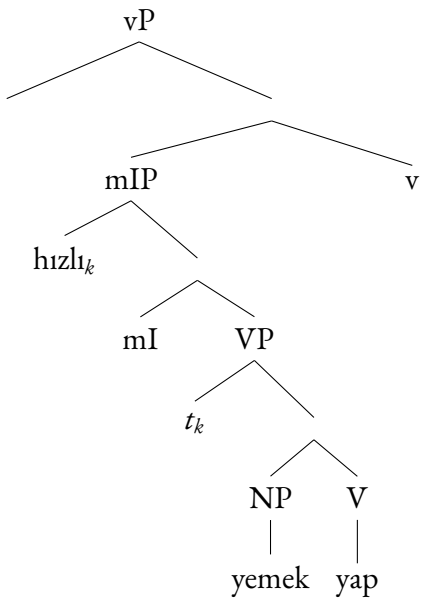


Figure 2.5: Structure of (96)

tions.

(95) Emre Ali'nin BEYAZ arabası-nı **mı** aldı?
Emre Ali-GEN white car-ACC PolQ buy-PST
'Did Emre buy Ali's WHITE car?' (Kamali, 2011)

After excluding the prosodic account, Kamali (2011) proposes that PolQ *mI* is a second-position clitic in the vP domain. On her analysis, *mI* is the head of a *mI*-phrase which is merged after VP. As a clitic, it attracts a constituent that lands in Spec,mIP. To illustrate this analysis, consider again the interrogative in (96) which contains a low adverb. The structure of this interrogative is given in Figure 2.5.

(96) Ali hızlı **mı** yemek yap-ar?
Ali fast PolQ dinner make-AOR
'Does Ali cook (dinner) fast?'

Kamali (2011) does not discuss how this new analysis captures the challenging data she provided

against the prosodic account. In particular, it is unclear how it derives examples like (94) where *mI* occurs in a noun phrase.

I now turn to a second syntactic analysis that has been proposed for PolQ *mI*. Özyıldız (2015) argues that *mI* is the head of a projection dominating TP (the label of this projection is not specified), which attracts a phrase to its specifier. On this analysis, the sentence in (97) has the base structure in (97-a). In (97-b), *mI* attracts the object to its specifier position. This movement is followed by an additional movement to the left of *mI* to derive the surface structure, as illustrated in (97-c).

(97) Tunç araba **mı** al-dı?
Tunç car PolQ buy-PST
Did Tunç buy a car?

a. [**mı** [Tunç car buy]]

b. [car_1 [**mı** [Tunç t_1 buy]]]

c. [Tunç_2 [car_1 [**mı** [t_2 t_1 buy]]]]

To motivate his analysis, Özyıldız (2015) discusses two sets of facts that I am going to present now. To begin with, Özyıldız (2015) shows that if *mI* can attach to a phrase, that phrase can independently be the target of movement operations. As previously mentioned, *mI* can appear in several positions in an interrogative. For instance, example (98) shows that it can attach to direct objects and to prepositional phrases. As illustrated in (99), these two phrases can be subject to movement operations in declaratives as well. Δ indicates the base position of these phrases.

(98) a. Tunç dün araba **mı** al-dı?
Tunç yesterday car PolQ buy-PST
'Did Tunç buy a car yesterday?'

b. Tunç araba için **mi** gel-di?
Tunç car for PolQ come-PST
'Did Tunç come for the car?'

(99) a. Araba dün Δ al-dı.
car Tunç yesterday buy-PST
'Cars, Tunç bought yesterday.'

b. Araba için Tunç Δ gel-di.
car for Tunç come-PST
'Tunç came for the car.' (Özyıldız, 2015)

Example (100) shows that when PolQ *mI* occurs between an adjective and a noun phrase, and between a noun phrase and a postposition, the resulting polar questions are ill-formed. Interestingly, the two phrases which precede *mI* in these questions (i.e., the adjective *hızlı* 'fast' and the noun phrase *araba* 'car') cannot be the target of movement operations in the corresponding declaratives, as illustrated in (101). Özyıldız (2015) take these examples to suggest that the phrases preceding *mI* are subject to a movement operation in (100) as well, yielding to the ungrammaticality of the resulting interrogatives.

(100) a. *Tunç hızlı **mı** araba-yı al-dı?
Tunç fast PolQ car-ACC buy-PST
(Int.) 'Did Tunç buy the fast car?'

b. *Tunç araba **mı** için gel-di?
Tunç car PolQ for come-PST
(Int.) 'Did Tunç come for the car?'

(101) a. (*Hızlı) Tunç [Δ araba-yı] (*hızlı) al-dı (*hızlı).
fast Tunç car-ACC fast buy-PST.3S fast
(Int.) 'Tunç bought the fast car.'

b. (*Araba) Tunç [Δ için] (*araba) gel-di (*araba).
car Tunç for car come-PST.3S car
(Int.) 'Tunç came for the car.' (Özyıldız, 2015)

The second set of facts that Özyıldız (2015) discusses concerns the interaction of *mI* with the universal quantifier *herkes*. As mentioned in Section 1.4, when *herkes* co-occurs with negation in a declarative , it must be interpreted with narrow scope with respect to negation for most speakers.

When we turn these declaratives into polar questions by combining *mI* with *herkes*, that quantifier must then take wide scope with respect to negation. For Özyıldız (2015), these examples constitute evidence that PolQ *mI* attracts the quantifier to a position above negation in (103).

(102) a. **Herkes** Ankara-ya git-**mi**-yor.
everyone Ankara-DAT go-NEG-PRES.PROG
$\neg > \forall$: 'It is not the case that everybody is going to Ankara.'
$\%\forall > \neg$: 'Nobody is going to Ankara.'

b. Dilara lab-da **herkes**-i gor-**me**-di.
Dilara lab-LOC everyone-ACC see-NEG-PAST
$\neg > \forall$: 'It is not the case that Dilara has seen everybody at the lab.'
$\%\forall > \neg$: 'Dilara has not seen anybody at the lab.'

(103) a. [**Herkes** **mi**] Ankara-ya git-**mi**-yor?
everyone PolQ Ankara-DAT go-NEG-PRES.PROG
$*\neg > \forall$: 'It is not the case that everybody is going to Ankara?'
$\forall > \neg$: 'Is everybody such that they are not going to Ankara?'

b. Dilara lab-da [**herkes**-i **mi**] gor-**me**-di?
Dilara lab-LOC everyone-ACC PolQ see-NEG-PAST
c. $*\neg > \forall$: 'Is it not the case that Dilara has seen everyone at the lab?'
$\forall > \neg$: 'Is it everyone that Dilara has not seen at the lab?'

Even though Kamali (2011) and Özyıldız (2015) do not agree regarding the specific position of *mI* in the structure, both of them propose that *mI* is generated as the head of a projection below the interrogative $C_{[+Q]}$ head and attracts the constituent it associates with to its specifier. In their current version, their analysis cannot however capture all the characteristic properties of this particle. For instance, it does not account for the fact that *mI* is mandatory in polar and alternative question, and cannot participate in the formation of *wh*-questions. As was the case for previous analyses of Finnish *-kO*, more needs to be said about the contribution of this particle and about the way it combines with other elements in the question to capture its characteristic properties.

As far as I know, the first analysis which looks more closely at the way questions involving PolQ

mI compose is due to Atlamaz (2015) He proposes that *mI* must be c-commanded by a Q(uestion) operator to be licensed. Its only contribution is to focus mark the phrase it adjoins to. At LF, it is invisible and thus, does not take part in the derivation. On this analysis, the interrogative in (104-a) has the simplified LF in (104-b).

(104) a. ALI **mi** geldi?
Ali PolQ came
'Was it Ali who came?'

b. $[_{CP}\,[_{IP}\,[_{NP}\,\text{Ali}_F\,]\,[_{VP}\,\text{geldi}\,]\,]\,[_{C^0}\,\text{Q}\,]\,]$

Atlamaz (2015) adopts a two-tier alternative semantic analysis of focus (Rooth, 1985, 1992). On this analysis, the function of focus is to evoke alternatives. Expressions come with both an ordinary (o-value) and a focus-semantic value (alt-value). The o-value of a focused expression is the same as its regular semantic value without a focus feature. And its alt-value is the set of objects of the same semantic type. In addition, Atlamaz (2015) adopts Hamblin's (1973) insight that expressions that denote sets of alternatives as their ordinary semantic value as well. On this analysis, semantic composition follows the rule of pointwise functional application, given again below.

(105) *Pointwise Functional Application*
If the node α has $\{\beta, \gamma\}$ as the set of its daughters, $[\![\beta]\!]^{alt} \subseteq D_\sigma$, and $[\![\gamma]\!]^{alt} \subseteq D_{<\sigma,\tau>}$, then $[\![\alpha]\!]^{alt} = \{a(b) | a \in [\![\gamma]\!]^{alt} \wedge b \in [\![\beta]\!]^{alt}\}$

Example (106) illustrates the step-by-step composition of the polar question in (104-a). This question is interpreted as in (106-e). That is, it denotes a singleton set which contains the proposition *that Ali came*.

(106) a. $[\![\,\text{Ali}_F\,]\!]^0 = \{Ali\}$
$[\![\,\text{Ali}_F\,]\!]^{alt} = \{Ali, Bill\}$

b. $[\![\text{ geldi }]\!]^0 = \{\lambda x.\lambda w.came(x)(w)\}$

$[\![\text{ geldi }]\!]^{alt} = \{\lambda x.\lambda w.came(x)(w)\}$

c. $[\![\text{ Ali}_F \text{ mi geldi }]\!]^0 = \{\lambda w.came(Ali)(w)\}$

$[\![\text{ Ali}_F \text{ mi geldi }]\!]^{alt} = \{\lambda w.came(Ali)(w), \lambda w.came(Bill)(w)\}$

d. $[\![\text{ Q }]\!]^0 = \{\lambda p.p\}$

e. $[\![(104\text{-a})]\!]^0 = \{\lambda w.came(Ali)(w)\}$

$[\![(104\text{-a})]\!]^{alt} = \{\lambda w.came(Ali)(w), \lambda w.came(Bill)(w)\}$

The fact that this analysis can derive the interpretation of a polar question containg PolQ *mI* is promising. However, further work is required to extend it to all of the uses of this particle and to capture its characteristic properties. Another recent semantic analysis of questions involving PolQ *mI* has been proposed by Kamali and Krifka (2020). The goal of their paper is to provide an analysis of focus and contrastive topic in both questions and assertions. To achieve this goal, they focus on Turkish where these two phenomena can be distinguished. Their proposal is couched in a framework of dynamic interpretation based on the notion of Commitment Spaces (Krifka, 2015). In polar questions, they analyze *mI* as a focus marker, licensed under the interrogative (Act) head, which attaches to the constituent that introduces alternatives. Because the goal of their paper is quite different from the goal of this dissertation, I do not provide the details of their proposal here. Note that these two semantic analyses of questions involving PolQ *mI* share a common feature. In both proposals, *mI* is analyzed as a focus marker licensed under the interrogative head. Working with this assumption, I provide in Chapter 4 a complete analysis of PolQ *mI* and the questions where it occurs. I will further show how my analysis can capture the characteristic properties of this particle.

2.7 What PolQs are not

In the last section of this chapter, I discuss and exclude two potential analyses of PolQs and of the questions where they appear. The first analysis one may consider is that PolQs are the spell-out of the interrogative $C_{[+Q]}$ head. As discussed in the previous section, this analysis (which has been proposed for Finnish *-kO*) is however not tenable. It cannot account for one of the major characteristic of PolQs, namely that they are restricted to polar and alternative questions. As illustrated again below, these particles cannot participate in the formation of *wh*-questions.

(107) a. *Kuka-**ko** lähti? [Finnish]
who-PolQ left
(Int.) 'Who left?'

b. *Kim Dilara'yı **mı** öptü? [Turkish]
who Dilara-ACC PolQ kiss.PAST
(Int.) 'Who kissed Dilara?'

Another analysis of these-questions that may come to mind is that they are the equivalent of English interrogatives involving a clefted constituent. Just like PolQs-questions, this type of questions always involve a focused expression and come with an existential presupposition, as illustrated in (108).

(108) a. Is it Zoe who went to the university?

b. *Presupposition:* Someone went to the university.

In the rest of this section, I provide two arguments against such an analysis of questions involving PolQs. To begin with, cleft sentences are known to come with an exhaustivity inference. For instance, the question in (108) comes with the inference that no one other than Zoe went to the university. What the status of this inference and its exact form are is not relevant for our discussion. Let us now consider the following examples in Finnish and Turkish. All of these questions are an-

swered positively, and crucially come with a continuation stating that the focused expression in the question is not the only individual making the proposition true. If questions involving PoQs were coming with an exhaustivity inference, these continuations should be unfelicitous. The fact that they are not suggests that these questions do not come with such an inference.

(109) a. [Mari-**ko**] lähti? Finnish
Mari-PolQ leave.PAST
'Was it Mari who left?'

b. Kyllä, ja Aino myös.
yes and Aino too
'Yes, and Aino left too.'

(110) a. [Pyörän-**kö**] Zoe osti eilen?
bike-PolQ Zoe buy.PAST yesterday
'Was it a bike that Zoe bought yesterday?'

b. Kyllä, ja potkulaudan myös.
yes and scooter.ACC too
'Yes, and she bought a scooter too.'

(111) a. [Oya **mı**] Dilara'yı öptü? [Turkish]
Oya PolQ Dilara-ACC kiss.PAST
'Was it Oya who kissed Dilara?'

b. Evet, bir de Ali öptü.
Yes, one ADD Ali kiss.PAST
'Yes, and Ali kissed her too.'

(112) a. Oya dün [*Sessizev*'i **mi**] aldı?
Oya yesterday *Sessizev*-ACC PolQ buy.PAST
'Was it *Sessizev* that Oya bought yesterday?'

b. Evet, bir de KAR'ı aldı.
yes one ADD *Kar*-ACC bought
'Yes, and she bought *Kar* too.'

As already mentioned, interrogatives involving a clefted constituent not only come with an exhaus-

tivity inference, but also with an existential presupposition. Recall that PolQs-questions come with a similar presupposition, as illustrated again below.

(113) a. [Mari-**ko**] lähti? [Finnish]
Mari-PolQ left
'Was it Mari who left?'

b. *Presupposition:* Someone left.

(114) a. [Oya **mı**] ayrildi? [Turkish]
Oya PolQ leave.PAST
'Was it Oya who left?'

b. *Presupposition:* Someone left.

I show that the existential presupposition in questions involving a clefted constituent and the existential presupposition in PolQs-questions display an interesting difference when they are embedded under rogative predicates like *wonder*. Specifically, the former seems to be shared by both illocutionary agents (i.e., the attitude holder and the speaker), whereas the latter only needs to be taken for granted by the attitude holder. To illustrate, let us first consider embedded questions involving a clefted constituent. In example (115), the polar question *Was it Zoe who went to the university?* is embedded under the rogative predicate *wonder*. This embedded question cannot be preceded by a sentence stating that the attitude holder or the speaker does not take for granted its presupposition $\pi(Q)$, as shown in (115-a) and (115-b) respectively. If however, the embedded presupposition $\pi(Q)$ is taken for granted in the context, the embedded question can be felicitously uttered, as shown in (115-c).

(115) $\pi(Q)$ = Someone went to the university.

a. #Bill doesn't know whether someone went to the university yesterday. He wonders whether it was Zoe who went there.

b. #I don't know whether someone went to the university yesterday. (But) Bill wonders

whether it was Zoe who went there.

c. Bill and I know that someone went to the university yesterday. Bill wonders whether it was Zoe who went there.

We now turn to the projection pattern of embedded questions involving PolQs. Examples (116) and (117), in Turkish and Finnish respectively, show that the embedded questions *Ali Oya mi gitti diye merak ediyor.* 'Ali wonders whether it was Oya who went there.' and *Lou mietiskelee että Zoe-ko siellä kävi.* 'Lou is wondering whether it was Zoe who went there.' cannot be felicitously uttered if the attitude holder does not take for granted their presupposition $\pi(Q)$, just like embedded questions involving a clefted constituent. However, these embedded questions can be preceded by a sentence stating that the speaker does not take for granted $\pi(Q)$. This contrasts with polar question involving a clefted constituent.

(116) $\pi(Q)$ = Someone went to school. [Turkish]

a. *Ali doesn't know whether someone went to school yesterday .*

#Ama Oya mi gitti diye merak ediyor.
but Oya PolQ go.PST C curiosity do.PRES
'But he wonders whether it was Oya who went there.'

b. *I don't know whether someone went to school yesterday.*

Ama Ali Oya mi gitti diye merak ediyor.
but Ali Oya PolQ go.PST C curiosity do.PRES
'But Ali wonders whether it was Oya who went there.'

(117) $\pi(Q)$ = Someone went to the university. [Finnish]

a. *Lou doesn't know whether someone went to the university yesterday.*

#Mutta hän mietiskelee että Zoe-ko siellä kävi.
but she.NOM wonder.PRES that Zoe-PolQ there visit.PST
'But she is wondering whether it was Zoe who went there.'

b. *I don't know whether someone went to the university yesterday.*

Mutta Lou tuossa vieressä mietiskelee että Zoe-ko siellä kävi.
but Lou.NOM there.INE close.INE wonder.PRES that Zoe-PolQ there visit.PST
'But Lou there next to me is wondering whether it was Zoe who went there.'

This distinction between embedded questions involving a clefted constituent and embedded questions involving PolQs will be further discussed in Chapter 3 and 4. For now, we take these examples to show that PolQs-questions are not the equivalent of questions involving a clefted constituent. To conclude, I have argued in this section that (i) PolQs are not the spell-out of the interrogative $C_{[+Q]}$ head and (ii) that PolQ-questions are not the equivalent of questions involving a clefted constituent in English.

2.8 Summary

In this chapter, I have presented the signature properties of the type of interrogative particles I am focusing on in this dissertation, namely PolQs. These properties are summarized again in the table below.

	Mandatory?	Polar Q? Alternative Q?	*Wh*-Q?	Embedded Q?	Q only?	Focus sensitive?
Finnish	yes	yes	no	yes	yes	yes
Turkish	yes	yes	no	yes	yes	yes

Figure 2.6: Signature properties of PolQs

An additional characteristic property of questions involving PolQs that I discuss in detail is that they come with an existential presupposition. Based on these characteristic properties, I have argued that these particles differ from two other types of interrogative particles discussed in the semantic literature, namely particles like Japane *ka* (also called Q-particles) and particles like Hindi-Urdu

kya:.

PolQs have not received much attention in the literature. As discussed in this chapter, none of the very few analyses that have been previously proposed can capture all of the properties of these particles and of the questions where they occur. In addition to these previous analyses, I have considered two additional analyses that may come to mind, namely, (i) that PolQs are the spell-out of the interrogative $C_{[+Q]}$ head, and (ii) that PolQ-questions are the equivalent of interrogatives involving a clefted constituent, and have argued that none of them are tenable.

3

Presuppositions in polar questions

3.1 Introduction

Chapter 2 ends by discussing the existential presupposition of polar questions involving a clefted constituent and polar questions involving PolQs. Specifically, I have shown that although the content of these presuppositions is the same, they display an interesting difference when embedded under rogative predicates like *wonder*. In this chapter, I argue that these two presuppositions belong

to two distinct categories. The existential presupposition of polar questions involving a clefted constituent is a *propositional* presupposition, whereas the existential presupposition of PolQs-questions is a *question-specific* presupposition. More generally, propositional presuppositions can be found in declaratives and interrogatives involving well-known presupposition triggers. In contrast, question-specific presuppositions are restricted to interrogatives. Among question-specific presuppositions, we also find the existential presupposition that comes with *wh*-questions and alternative questions. An additional presupposition which I claim belongs to this category is a presupposition I label *ignorance* presupposition. This presupposition requires that all possible answers to a question can be true for the speaker. The question-specific presuppositions that come with different types of questions are summarized in the following table.

	Wh-Q	Polar Q with PolQ	Polar Q without PolQ	Alternative Q with PolQ	Alternative Q without PolQ
Existential presupposition	✓	✓	*	✓	✓
Ignorance presupposition	✓	✓	✓	✓	✓

Figure 3.1: Question-specific presuppositions in questions

As previously mentioned, propositional presuppositions and question-specific presuppositions display an interesting difference when embedded under rogative predicates. At the end of this chapter, I discuss previous analyses of presupposition projections in questions and show that they cannot account for these two distinct patterns.

3.2 Two types of presuppositions in questions

In this section, I introduce the two types of presuppositions one can find in interrogatives. I label them as follows: (i) propositional presuppositions, which can also be found in declaratives, and (ii) question-specific presuppositions, which are restricted to questions. I discuss the first type in Section 3.2.1 and the second type in Section 3.2.2.

3.2.1 Propositional presuppositions

Propositional presuppositions are triggered by well-known presupposition triggers such as the definite article, and specific syntactic configurations such as clefting. They can be observed in declaratives, as illustrated in examples (1) and (2). The sentence in (1) can only be uttered in a context where there is a unique (relevant) cake, and the sentence in (2) in a context where someone left.[1]

(1) a. Zoe brought the cake.

b. *Presupposition:* There is a unique (contextually relevant) cake.

(2) a. It is Zoe who left.

b. *Presupposition:* Someone left.

In declaratives, P-family tests can be used to diagnose the presence of presuppositions. In particular, presuppositions are known to survive when they are embedded under negation and in the antecedent of a conditional. Example (3) shows that when the sentence in (1-a) is embedded under negation and in the antecedent of a conditional, the presupposition triggered by the definite article is inherited by the whole sentence. Example (4) shows that this is also true for the existential presup-

[1] As previously mentioned, cleft sentences also come with an exhaustivity inference. For instance, the sentence in (2) comes with the inference that no one other than Zoe left. The status of this inference and its exact form is subject to debate in the literature (see e.g., Destruel et al. (2015) for a discussion of this issue). For this reason, we leave it out of the discussion here.

position that comes with cleft sentences.

(3) a. Zoe didn't brought the cake.

b. If Zoe brought the cake, it will be delicious.

c. *Presupposition:* There is a unique (contextually relevant) cake.

(4) a. It is not Zoe who left.

b. If it is Zoe who left, Bill will be sad.

c. *Presupposition:* Someone left.

Polar questions constitute another environment where propositional presuppositions are known to survive. The two questions in (5) and (6) retain the presuppositions of their declarative counterparts given in (1) and (2) respectively.

(5) a. Did Zoe bring the cake?

b. *Presupposition:* There is a unique (contextually relevant) cake.

(6) a. Is it Zoe who left?

b. *Presupposition:* Someone left.

Although all the above examples are in English, a sentence which involves a presupposition trigger in any language arguably comes with a propositional presupposition. For instance, example (7) shows the definite article triggers a uniqueness presupposition in French as well which can be found in positive and negative sentences, and in polar questions.

(7) a. Zoé a mangé le gâteau. [French]
Zoe has eaten the cake
'Zoe has eaten the cake.'

b. Zoé n'a pas mangé le gâteau.
Zoe NE-has NEG eaten the cake

'Zoe has not eaten the cake.'

c. Est-ce que Zoé a mangé le gâteau?
it-it that Zoé has eaten the cake
'Has Zoe eaten the cake?'

d. *Presupposition:* There is a unique (contextually relevant) cake.

As previously mentioned, I claim that these propositional presuppositions we observe in polar questions should be distinguished from another type of presuppositions, namely, question-specific presuppositions. I turn to this second type of presuppositions in the next section.

3.2.2 Question-specific presuppositions

Wh-questions and alternative questions have been argued to come with an existential presupposition (Karttunen and Peters 1976, Dayal 1996, Biezma and Rawlins 2012, a.o.). For instance, the *wh*-question in (8-a) and the alternative question in (9-a) both presuppose that someone left.

(8) a. Who left?

b. *Presupposition:* Someone left.

(9) a. Did /ZOE or LOU\ leave?

b. *Presupposition:* Someone left.

These two presuppositions are tied to the presence of an interrogative element. As illustrated in examples (10) and (11), the corresponding declaratives which involve an indefinite and disjunction respectively do not come with such presuppositions.

(10) a. Someone left.

b. *Does not presuppose:* Someone left.

(11) a. Zoe or Lou left.

b. *Does not presuppose:* Someone left.

The two presuppositions in (8) and (9) thus contrast with propositional presuppositions which can be found in both declaratives and interrogatives. They are instances of question-specific presuppositions. Question-specific presuppositions are presumably present in all languages. Examples (12) and (13) show that in French, *wh*-questions and alternative questions come with an existential presupposition as well.

(12) a. Qui est parti ? [French]
who is left
'Who left?'

b. *Presupposition:* Someone left.

(13) a. Est-ce que Zoe ou Lou est partie ?
it-it that Zoe or Lou is left
'Did /ZOE or LOU\ leave?'

b. *Presupposition:* Someone left.

As discussed in Chapter 2, questions involving PolQs also come with an existential presupposition. For instance, the polar question in (14) involving Finnish *-kO* and the polar question in (15) involving Turkish *mI* both presuppose that someone left.

(14) a. [Mari-ko] lähti? [Finnish]
Mari-PolQ left
'Was it Mari who left?'

b. *Presupposition:* Someone left.

(15) a. [Oya mı] ayrildi? [Turkish]
Oya PolQ leave.PAST
'Was it Oya who left?'

b. *Presupposition:* Someone left.

Example (16) and (17) show that alternative questions involving PolQs, just like polar questions involving PolQs, come with an existential presupposition. These existential presuppositions found in PolQs-questions constitute another instance of question-specific presuppositions.

(16) a. Lähti-**kö** Mari vai Pekka? [Finnish]
left-PolQ Mari or Pekka
'Did Mari leave or did Pekka leave?'

b. *Presupposition:* Someone left.

(17) a. [Oya **mı**] ayrildi (yoksa) [Ali **mi**]? [Turkish]
Oya PolQ left or Ali PolQ
'Did Oya leave or did Ali leave?'

b. *Presupposition:* Someone left.

PolQs-questions contrast with polar questions in languages like English which do not come with such a presupposition (when they do not involve any presupposition triggers). For instance, the polar question in (18-a) does not presuppose that someone left.

(18) a. Did Zoe leave?

b. *Does not presuppose:* Someone left.

The following table summarizes the current discussion on question-specific presuppositions. The main difference between languages with PolQs and languages without PolQs concerns polar questions. While polar questions involving PolQs come with an existential presupposition, polar questions without PolQs do not. In the next section, I introduce an additional question-specific presupposition.

	Wh-Q	Polar Q with PolQ	Polar Q without PolQ	Alternative Q with PolQ	Alternative Q without PolQ
Existential presupposition	✓	✓	*	✓	✓

Figure 3.2: Question-specific presuppositions in questions (first version)

3.3 An ignorance presupposition in questions

In this section, I discuss an additional question-specific presupposition, which I call the ignorance presupposition. This presupposition requires that it is possible that all of the possible answers are true. That is, when a speaker asks a question, they are ignorant as to which possible answer is true. For instance, in a context where the relevant individuals are Zoe, Bill and Lou, the *wh*-question in (19-a) comes with the presupposition in (19-c).

(19) a. Who left?

b. *Existential presupposition:* Someone left.

c. *Ignorance presupposition:* ◇ Zoe left ∧◇ Bill left ∧◇ Lou left

Similarly, the alternative question in (20-a) comes with the ignorance presupposition in (20-c).

(20) a. Did /ZOE or LOU\ leave?

b. *Existential presupposition:* Someone left.

c. *Ignorance presupposition:* ◇ Zoe left ∧◇ Lou left

Polar questions in languages like English (which do not come with an existential presupposition) also come with an ignorance presupposition according to which both the positive and the negative answer can be true, as illustrated in (21).

(21) a. Did Zoe leave ?

b. *Ignorance presupposition:* ◇ Zoe left ∧◇ Zoe didn't leave

In what follows, I use some diagnostics to confirm the presence of this presupposition. I illustrate these tests with the polar question in (22-a) which comes with the ignorance presupposition in (22-b). To start with, example (23) shows that when the speaker does not take for granted either part of the presupposition, the question in (22-a) cannot be felicitously uttered. This suggests that this question presupposes the conjunction of both parts.

(22) a. Did Zoe go to the university yesterday?

b. *Ignorance presupposition:*
◇ Zoe went to the university yesterday ∧◇ Zoe didn't go to the university yesterday

(23) a. #I know that Zoe went to the university yesterday. Did Zoe go to the university yesterday?

b. #I know that Zoe didn't go to the university yesterday. Did Zoe go to the university yesterday?

Secondly, examples (24) and (25) show that each part of this ignorance presupposition can be challenged. The response *Zoe was at the hospital all day yesterday.* in (24-b) entails that it is not possible that she went to the university yesterday. That is, it entails the negation of the first conjunct of the presupposition. This response suggests that the listener does not share the speaker's beliefs that it is possible that Zoe went there. As for the response *Zoe worked at the lab all day yesterday.* in (25-b), it entails that it is not possible that she didn't go to the university yesterday (i.e., she must have been there). This response which entails the negation of the second conjunct of the presupposition suggests that the listener does not share the speaker's beliefs that it is possible that Zoe didn't go there. The fact that the two parts of this presupposition can be challenged shows that the polar

question in (22-a) presupposes the conjunction of both.

(24) a. Did Zoe go to the university yesterday?

b. What do you mean? Zoe was at the hospital all day yesterday.

(25) a. Did Zoe go to the university yesterday?

b. What do you mean? Zoe worked at the lab all day yesterday.

As was the case for the existential presupposition of PolQs-questions (discussed in Section 1.4), P-family tests cannot be used to diagnose the presence of the interrogative presupposition. Because this presupposition is restricted to interrogatives, it cannot be embedded in an additional polar question, in the antecedent of a conditional and under negation. More generally, P-family tests cannot be used to diagnose the presence of question-specific presuppositions.

Just like other types of questions discussed above, PolQs-questions come with an ignorance presupposition. This is illustrated in (26) and (27) for Finnish and in (28) and (29) for Turkish.

(26) a. [Mari-**ko**] lähti? [Finnish]
Mari-PolQ leave.PAST
'Was it Mari who left?'

b. *Existential presupposition:* Someone left.

c. *Ignorance presupposition:* ◇ Mari left ∧◇ Mari didn't leave

(27) a. Lähti-**kö** Mari vai Pekka?
left-PolQ Mari or Pekka
'Did Mari leave or did Pekka leave?'

b. *Existential presupposition:* Someone left.

c. *Ignorance presupposition:* ◇ Mari left ∧◇ Pekka left

(28) a. [Oya **mı**] ayrildi? [Turkish]
Oya PolQ leave.PAST
'Was it Oya who left?'

b. *Existential presupposition:* Someone left.

c. *Ignorance presupposition:* ◇ Oya left ∧◇ Oya didn't leave

(29) a. [Oya **mı**] ayrildi (yoksa) [Ali **mi**]?
Oya PolQ left or Ali PolQ
'Did Oya leave or did Ali leave?'

b. *Existential presupposition:* Someone left.

c. *Ignorance presupposition:* ◇ Oya left ∧◇ Ali left

In what follows, I illustrate the presence of this ignorance presupposition in polar questions involving PolQs using the diagnostics discussed above. Examples (30) and (31), in Finnish and Turkish respectively, show that when the speaker does not take for granted either part of the presupposition, the polar questions in (26) and (28) are not felicitous. This shows that these questions presuppose the conjunction of both parts.

(30) a. *I know that Mari left.* [Finnish]

#[Mari-**ko**] lähti?
Mari-PolQ leave.PAST

b. *I know that Mari didn't leave.*

#[Mari-**ko**] lähti?
Mari-PolQ leave.PAST

(31) a. *I know that Oya left.* [Turkish]

#[Oya **mı**] ayrildi?
Oya PolQ leave-PST

b. *I know that Oya didn't leave.*

#[Oya **mı**] ayrildi?
Oya PolQ leave-PST

As was the case for polar questions in English, each part of the ignorance presupposition that comes with PolQs-questions can be challenged. This is illustrated in examples (32) and (33) for a polar

question involving Finnish *-kO* and in (34) and (35) for a polar question involving Turkish *mI*. The response *Zoe was at the hospital all day yesterday.* entails that it is not possible that she went to the university yesterday. This response suggests that the listener does not share the speaker's beliefs that it is possible that Zoe went there. As for the response *Zoe worked at the lab all day yesterday.*, it entails that it is not possible that she didn't go to the university yesterday (i.e., she must have been there). This response suggests that the listener does not share the speaker's beliefs that it is possible that Zoe didn't go there. The fact that these two parts can be challenged shows that the polar questions in (32-a) and (34-a) presuppose the conjunction of both.

(32) a. [Mari-ko] yliopistolla eilen kävi? [Finnish]
Mari-PolQ university.ADE yesterday visit.PAST
'Was it Mari who went to the university yesterday?'

b. Mitä tarkoitat? Hän oli koko eilispäivän sairaalassa.
what mean.2SG (s)he.NOM was whole yesterday.ACC hospital.INE
'What do you mean? She was hospitalized all day yesterday.'

(33) a. [Mari-ko] yliopistolla eilen kävi?
Mari-PolQ university.ADE yesterday visit.PAST
'Was it Mari who went to the university yesterday?'

b. Mitä tarkoitat? Hän paiski hommia labrassa koko eilispäivän.
what mean.2SG (s)he.NOM work.PAST hard lab.INE whole yesterday.ACC
'What do you mean? She worked hard at the lab all day yesterday.'

(34) a. [Oya mı] dün okula gitti? [Turkish]
Oya PolQ yesterday school go.PAST
'Was it Oya who went to school yesterday?'

b. Nasıl yani? Oya dün tüm gün hastane-de-y-di.
how so Oya yesterday all day hospital-LOC-COP-PST.3S
'What do you mean? She was at the hospital all day yesterday.'

(35) a. [Oya mı] dün okula gitti?
Oya PolQ yesterday school go.PAST
'Was it Oya who went to school yesterday?'

b. Nasıl yani? Oya dün tüm gün lab-de-y-di.
how so Oya yesterday all day lab-LOC-COP-PST.3S
'What do you mean? She worked at the lab all day yesterday.'

The question-specific presuppositions that come with all type of interrogatives are summarized in the following table. Again, the main difference between languages with PolQs and languages without PolQs concerns polar questions. While polar questions involving PolQs come with an existential presupposition, polar questions without PolQs do not.

	Wh-Q	Polar Q with PolQ	Polar Q without PolQ	Alternative Q with PolQ	Alternative Q without PolQ
Existential presupposition	✓	✓	*	✓	✓
Ignorance presupposition	✓	✓	✓	✓	✓

Figure 3.3: Question-specific presuppositions in questions (final version)

3.4 Distinguishing propositional from question-specific presuppositions

As previously mentioned, propositional presuppositions and question-specific presuppositions differ when they are embedded under rogative predicates like *wonder*. Specifically, the former seems to be shared by both illocutionary agents (i.e., the attitude holder and the speaker), whereas the latter only needs to be taken for granted by the attitude holder.

Let us start by illustrating the projection pattern of propositional presuppositions. Example (36) involves as presupposition trigger the definite article. In this example, the polar question *Did Zoe bring the cake?* is embedded under the rogative predicate *wonder*. In example (37), the polar ques-

tion *Was it Zoe who went to the university?* which involves clefting is embedded under *wonder*. These embedded questions cannot be preceded by a sentence stating that the attitude holder or the speaker does not take for granted their presupposition $\pi(Q)$, as shown in (36-a)-(37-a) and (36-b)-(37-b) respectively. If however, the embedded presuppositions $\pi(Q)$ are taken for granted in the context, these embedded questions can be felicitously uttered, as illustrated in (36-c) and (37-c).

(36) $\pi(Q)$ = There is a unique (contextually relevant) cake.

a. # Bill doesn't know whether there is only one cake in the kitchen. He wonders whether Zoe brought the cake.

b. # I don't know whether there is only one cake in the kitchen. (But) Bill wonders whether Zoe brought the cake.

c. Bill and I know that there is only one cake in the kitchen. Bill wonders whether Zoe brought the cake.

(37) $\pi(Q)$ = Someone went to the university.

a. # Bill doesn't know whether someone went to the university yesterday. He wonders whether it was Zoe who went there.

b. # I don't know whether someone went to the university yesterday. (But) Bill wonders whether it was Zoe who went there.

c. Bill and I know that someone went to the university yesterday. Bill wonders whether it was Zoe who went there.

Let us now turn to question-specific presuppositions. First, I illustrate the projection pattern of the existential presupposition that comes with *wh*-questions and then discuss the projection pattern of the ignorance presupposition that comes with polar questions. Recall that *wh*-questions come with two presuppositions, an existential presupposition and an ignorance presupposition, as illustrated

again in (38).

(38) a. Who went to the university?

b. *Existential presupposition:* Someone went to the university.

c. *Ignorance presupposition:*

◇ Zoe went to the university ∧◇ Bill went to the university ∧◇ Lou went to the university

Example (39) shows that when the *wh*-question in (38-a) is embedded under *wonder*, it cannot be felicitously uttered if the attitude holder does not take for granted its presupposition $\pi(Q)$, just like questions involving a propositional presupposition. However, this embedded question can be preceded by a sentence stating that the speaker does not take for granted $\pi(Q)$. Thus, in contrast to the propositional presuppositions in (36) and (37), the question-specific presupposition $\pi(Q)$ is not shared by the speaker in (39).

(39) $\pi(Q)$ = Someone went to the university.

a. #Bill doesn't know whether someone went to the university yesterday. He wonders who went there.

b. I don't know whether someone went to the university yesterday. (But) Bill wonders who went there.

In contrast to *wh*-questions such as (38), polar questions in English only come with an ignorance presupposition when they do not involve any presupposition trigger. This is illustrated again in example (40).

(40) a. Did Zoe go to the university?

b. *Ignorance presupposition:*

$\diamond$ Zoe went to the university $\wedge$ $\diamond$ Zoe didn't go to the university

In examples (41) and (42), the above polar question is embedded under the rogative predicate *wonder*. These examples show that when the attitude holder does not take for granted either part of the presupposition $\pi(Q)$ (the first conjunct in (41) and the second conjunct in (42)), this embedded question cannot be felicitously uttered. However, this embedded question can be preceded by a sentence stating that the speaker does not take for granted $\pi(Q)$, as illustrated in (41-b) and (42-b). Thus, just like the existential presupposition of the *wh*-question in (39), the ignorance presupposition of the polar question in (40-a) is not shared by the speaker in (41).

(41) $\pi(Q)$ = $\diamond$ Zoe went to the university $\wedge$ $\diamond$ Zoe didn't go to the university

a. #Bill knows that Zoe was at the hospital all day yesterday. He wonders whether she went to the university.

b. I know that Zoe was at the hospital all day yesterday. (But) Bill wonders whether she went to the university.

(42) $\pi(Q)$ = $\diamond$ Zoe went to the university $\wedge$ $\diamond$ Zoe didn't go to the university

a. #Bill knows that Zoe worked in the lab all day yesterday. He wonders whether she went to the university.

b. I know that Zoe worked in the lab all day yesterday. (But) Bill wonders whether she went to the university.

To sum up, this section shows that when embedded under rogative predicates like *wonder*, propositional presuppositions differ from question-specific presuppositions. Specifically, in the examples discussed above, propositional presuppositions are shared by both illocutionary agents (i.e., the attitude holder and the speaker) whereas question-specific presuppositions only need to be taken for granted by the attitude holder. In the next section, I apply this test to presuppositions which are

found in PolQs-questions in order to confirm that these are question-specific presuppositions.

3.5 Presuppositions in PolQs-questions

As discussed in sections 3.2. and 3.3, polar questions involving PolQs come with both an existential and an ignorance presupposition. This is illustrated again in (43) and (44) in Finnish and Turkish respectively.

(43) a. [Mari-**ko**] lähti? [Finnish]
Mari-PolQ leave.PAST
'Was it Mari who left?'

b. *Existential presupposition:* Someone left.

c. *Ignorance presupposition:* ◇ Mari left ∧◇ Mari didn't leave

(44) a. [Oya **mı**] ayrildi? [Turkish]
Oya PolQ leave.PAST
'Was it Oya who left?'

b. *Existential presupposition:* Someone left.

c. *Ignorance presupposition:* ◇ Oya left ∧◇ Oya didn't leave

Let us first consider the existential presupposition. In examples (45) and (46), we apply the test discussed in the previous section to embedded questions involving PolQs. These examples show that the embedded PolQs-questions cannot be felicitously uttered when the attitude holder does not take for granted their presupposition $\pi(Q)$ ((45-a)-(46-a)). However, these embedded questions can be preceded by a sentence stating that the speaker does not take for granted $\pi(Q)$, as illustrated in (45-b)-(46-b). Thus, the existential presupposition that comes with PolQs-questions behaves like question-specific presuppositions.

(45) $\pi(Q)$ = Someone went to the university. [Finnish]

a. *Lou doesn't know whether someone went to the university yesterday.*

#Mutta hän mietiskelee että [Zoe-**ko**] siellä kävi.
but she.NOM wonders that Zoe-PolQ there visited
'But she is wondering whether it was Zoe who went there.'

b. *I don't know whether someone went to the university yesterday.*

Mutta Lou tuossa vieressä mietiskelee että [Zoe-**ko**] siellä kävi.
but Lou.NOM there.INE close.INE wonders that Zoe-PolQ there visited
'But Lou there next to me is wondering whether it was Zoe who went there.'

(46) $\pi(Q)$ = Someone went to school. [Turkish]

a. *Ali doesn't know whether someone went to school yesterday .*

#Ama [Oya **mı**] gitti diye merak ediyor.
but Oya PolQ go.PST C curiosity do.PRES
'But he wonders whether it was Oya who went there.'

b. *I don't know whether someone went to school yesterday.*

Ama Ali [Oya **mı**] gitti diye merak ediyor.
but Ali Oya PolQ go.PST C curiosity do.PRES
'But Ali wonders whether it was Oya who went there.'

The ignorance presupposition of PolQs-questions behaves like a question-specific presupposition as well. Examples (47)-(48) and (49)-(50) in Finnish and Turkish respectively show that when the attitude holder does not take for granted either part of their ignorance presupposition $\pi(Q)$, embedded PolQs-questions cannot be felicitously uttered. In contrast, the speaker does not need to take either part of $\pi(Q)$ for granted.

(47) $\pi(Q) = \diamond$ Zoe went to the university $\wedge \diamond$ Zoe didn't go to the university [Finnish]

a. *Lou knows that Zoe was at the hospital all day yesterday.*

#Mutta hän mietiskelee että [Zoe-**ko**] yliopistolla eilen kävi.
but she.NOM wonders that Zoe-PolQ university.INE yesterday visit.PAST
'But she is wondering whether it was Zoe who went to the university yesterday.'

b. *I know that Zoe was at the hospital all day yesterday.*

Mutta Lou tuossa vieressä mietiskelee että [Zoe-ko] yliopistolla
but Lou.NOM there.INE close.INE wonders that Zoe-PolQ university.INE
eilen kävi.
yesterday visit.PAST
'But Lou there next to me is wondering whether it was Zoe who went to the university yesterday.'

(48) $\pi(Q)$ = ◇ Zoe went to the university ∧ ◇ Zoe didn't go to the university

a. *Lou knows that Zoe worked in the lab all day yesterday.*

#Mutta hän mietiskelee että [Zoe-ko] yliopistolla eilen kävi.
but she.NOM wonders that Zoe-PolQ university.INE yesterday visit.PAST
'But she is wondering whether it was Zoe who went to the university yesterday.'

b. *I know that Zoe worked in the lab all day yesterday.*

Mutta Lou tuossa vieressä mietiskelee että [Zoe-ko] yliopistolla
but Lou.NOM there.INE close.INE wonders that Zoe-PolQ university.INE
eilen kävi.
yesterday visit.PAST
'But Lou there next to me is wondering whether it was Zoe who went to the university yesterday.'

(49) $\pi(Q)$ = ◇ Oya went to school ∧ ◇ Oya didn't go to school [Turkish]

a. *Ali knows that Oya was at the hospital all day yesterday.*

#(Ama) [Oya mı] okula gitti diye merak ediyor.
but Oya PolQ school go.PST C curiosity do.PRES
'He wonders whether it was Oya who went to school.'

b. *I know that Oya was at the hospital all day yesterday.*

Ama Ali [Oya mı] okula gitti diye merak ediyor.
but Ali Oya PolQ school go.PST C curiosity do.PRES
'But Ali wonders whether it was Oya who went to school.'

(50) $\pi(Q)$ = ◇ Oya went to school ∧ ◇ Oya didn't go to school

a. *Ali knows that Oya worked in the lab all day yesterday.*

#(Ama) [Oya **mı**] okula gitti diye merak ediyor.
but Oya PolQ school go.PST C curiosity do.PRES
'He wonders whether it was Oya who went to school.'

b. *I know that Oya worked in the lab all day yesterday.*

Ama Ali [Oya **mı**] okula gitti diye merak ediyor.
but Ali Oya PolQ school go.PST C curiosity do.PRES
'But Ali wonders whether it was Oya who went to school.'

All these examples confirm that both the existential presupposition and the ignorance presupposition of PolQs-questions are question-specific presuppositions. In Chapter 4, I will present my analysis of these two types of presuppositions we find in questions. Before turning to this proposal, I discuss two previous analyses of presuppositions projection we find in the literature: namely, Guerzoni (2003) who discusses the projection of propositional presuppositions in polar questions, and Uegaki (2020) who focuses on the projection of question-specific presuppositions which come with *wh*-questions.

3.6 Previous literature

Guerzoni (2003) discusses two possible options to analyze the projection of propositional presuppositions in questions, which she labels as follows: (i) the answer-based approach, and (ii) the question-based approach. On the answer-based approach, only the answers to a question can be semantically undefined, the question as a whole always receives a denotation. This approach is illustrated in example (52) with the polar question in (51-a) which comes with the presupposition in (51-b).

(51) a. Did Zoe bring the cake?

b. *Presupposition:* There is a unique (contextually relevant) cake.

(52) a. $[_{CP}\ \mathrm{C}_{[+Q]}\ [_{TP}$ Zoe brought the cake]]

b. $[\![\ \mathrm{TP}\ ]\!] = \lambda w : \exists!x : \mathit{cake}_w(x).\mathit{brought}_w(\iota x : \mathit{cake}_w(x))(z)$

c. $[\![\ \mathrm{C}_{[+Q]}\ ]\!] = \lambda p.\lambda q.q = p$

d. $[\![\ \mathrm{CP}\ ]\!] = \lambda q.q = \lambda w : \exists!x : \mathit{cake}_w(x).\mathit{brought}_w(\iota x : \mathit{cake}_w(x))(z)$

To connect partiality of the answers to its pragmatic effects on the question, Guerzoni (2003) assumes the following pragmatic principle.

(53) *Question Bridge Principle* (Guerzoni 2003:41)

A question is felicitous in a context c, only if it can be felicitously answered in c (i.e., if at least one of its answers is defined in c).

The question bridge principle allows Guerzoni (2003) to derive the felicity conditions of a question from the definedness conditions of its possible answers.

In contrast, on the question-based approach, the interrogative $\mathrm{C}_{[+Q]}$ head denotes a function that inherits the definedness conditions of its argument, as defined in (54-c). Composing $\mathrm{C}_{[+Q]}$ with the semantic value of the proposition in (54-b), we obtain (54-d) as the denotation of the question in (51-a). As a result, the question as a whole semantically presupposes that there is exactly one contextually relevant cake.

(54) a. $[_{CP}\ \mathrm{C}_{[+Q]}\ [_{TP}$ Zoe brought the cake]]

b. $[\![\ \mathrm{TP}\ ]\!] = \lambda w : \exists!x : \mathit{cake}_w(x).\mathit{brought}_w(\iota x : \mathit{cake}_w(x))(z)$

c. $[\![\ \mathrm{C}_{[+Q]}\ ]\!] = \lambda p.\lambda w : w \in \mathit{dom}(p).\lambda q.q = p$

d. $[\![\ \mathrm{CP}\ ]\!] = \lambda w : \underline{\exists!x : \mathit{cake}_w(x)}.$
$\lambda q.q = \lambda w : \exists!x : \mathit{cake}_w(x).\mathit{brought}_w(\iota x : \mathit{cake}_w(x))(z)$

In chapter 4, I adopt this second approach to derive the projection of propositional presuppositions in questions. Note that these two approaches do not say anything on the projection of question-

specific presuppositions. I now turn to Uegaki (2020) who focuses on the projection of this second type of presuppositions. In particular, he investigates the projection of presuppositions that come with *wh*-questions like (55) and (56).

(55) a. Who went to the university?

b. *Presupposition:* Someone went to the university.

(56) a. Which student went to the university?

b. *Presupposition:* Exactly one student went to the university.

Uegaki (2020) focuses on three predicates: *know*, *be certain* and *agree*. Example (57) and (58) show that when it is embedded under these predicates, the uniqueness presupposition that comes with *which*-questions displays the same projection pattern as the propositional presupposition triggered by the definite article. In particular, it projects to the matrix level with *know*, it projects to the attitude holder's beliefs with *be certain* and it projects to the attitude holder's and to the *with*-argument's beliefs with *agree*.

(57) a. Max knows which semanticist danced.

Presupposition: Exactly one semanticist danced.

b. Max is certain (about) which semanticist danced.

Presupposition: Max believes that exactly one semanticist danced.

c. Max agrees with Kim on which semanticist danced.

Presupposition: Max and Kim believe that exactly one semanticist danced.

(58) a. Max knows who caught the unicorn.

Presupposition: There is a unique unicorn.

b. Max is certain who caught the unicorn.

Presupposition: Max believes that there is a unique unicorn.

c. Max agrees with Kim on who caught the unicorn.

Presuppposition: Max and Kim believe that there is a unique unicorn (Uegaki, 2020)

From these examples, Uegaki (2020) concludes that question-specific presuppositions and propositional presuppositions are triggered at the same level in the structure: they are both triggered within the proposition out of which a question is formed. More specifically, he claims that question-specific presuppositions are contributing by the propositions contributing to the answers. However, recall that when they are embedded under *wonder*, these two types of presuppositions display an interesting difference. This cast doubt on the fact that both are encoded within the propositions out which a question is formed.

3.7 Summary

In this chapter, I have argued that we should distinguish two types of presuppositions in questions: (i) propositional presuppositions which can also be found in declaratives, and (ii) question-specific presuppositions which are restricted to questions. I have provided a novel diagnostic allowing us to distinguish these two types of presuppositions in questions.

Among question-specific presuppositions, we find the existential presupposition that comes with PolQs-questions. In addition, I have argued that PolQs-questions, just like other types of questions, come with an additional question-specific presupposition, namely, an ignorance presupposition. This presupposition requires that all possible answers to a question can be true for the speaker. The question-specific presuppositions that come with different types of questions are summarized in the following table.

	Wh-Q	Polar Q with PolQ	Polar Q without PolQ	Alternative Q with PolQ	Alternative Q without PolQ
Existential presupposition	✓	✓	*	✓	✓
Ignorance presupposition	✓	✓	✓	✓	✓

Figure 3.4: Question-specific presuppositions in questions

This chapter further discusses two previous analyses of presupposition projections in questions and shows that they cannot derive the distinction between propositional presuppositions and question-specific presuppositions.

4

A multi-dimensional analysis of PolQs-questions

4.1 Introduction

In Chapter 2, I have identified the signature properties of PolQs and shown how these particles differ from other types of interrogative particles discussed in the semantic literature, namely, particles

like Japanese *ka* and particles like Hindi-Urdu *kyaa*. In Chapter 3, I have discussed in detail the different types of presuppositions we find in questions, an have further argued that PolQs-questions come with two question-specific presuppositions. In this chapter, I provide a multi-dimensional analysis of PolQs-questions which derives most of these properties. Specifically, I claim that PolQs are focus markers which are interpreted within the proposition out of which a question is formed. These particles carry an interrogative feature which must agree with an interrogative $C_{[+Q]}$ head. The focus alternatives triggered by the constituent they combine with project all the way up to the interrogative $C_{[+Q]}$ head. $C_{[+Q]}$ is a focus operator which triggers both an existential and an ignorance presupposition.

4.2 Syntax of PolQs-questions

As discussed in Chapter 2, PolQs are not the spell-out of the interrogative $C_{[+Q]}$ head. If this were the case, PolQs should participate in the formation of all types of questions. In particular, these particles should participate in the formation of *wh*-questions, contrary to fact.

(1) a. *Kuka-**ko** lähti? [Finnish]
who-PolQ left
(Int.) 'Who left?'

b. *Kim Dilara'y**ı** **mı** öptü? [Turkish]
who Dilara-ACC PolQ kiss.PAST
(Int.) 'Who kissed Dilara?'

Building on Holmberg's (2014) proposal for Finnish *-kO*, I assume that PolQs can be merged anywhere in a tree as long as they c-command a [Foc] feature. In other words, they carry a [uFoc] feature that needs to agree with an interpretable [iFoc] feature in their c-command domain. In addition, PolQs carry an interrogative [iQ] feature that needs to agree with an interrogative $C_{[uQ]}$ head. In questions involving PolQs, the interrogative $C_{[uQ]}$ head selects a FocP phrase. Languages differ in

whether the PolQ-phrase must move to the specifier of FocP. While in Turkish, the *mI*-phrase can remain in situ, in Finnish, the *-kO*-phrase moves to Spec,FocP on the surface. On this analysis, the Finnish polar question in (2) has the structure in Figure 4.1 and the Turkish polar question in (3) has the structure in 4.2.

(2) [Mari-**ko**] lähti? [Finnish]
Mari-PolQ left
'Was it Mari who left?'

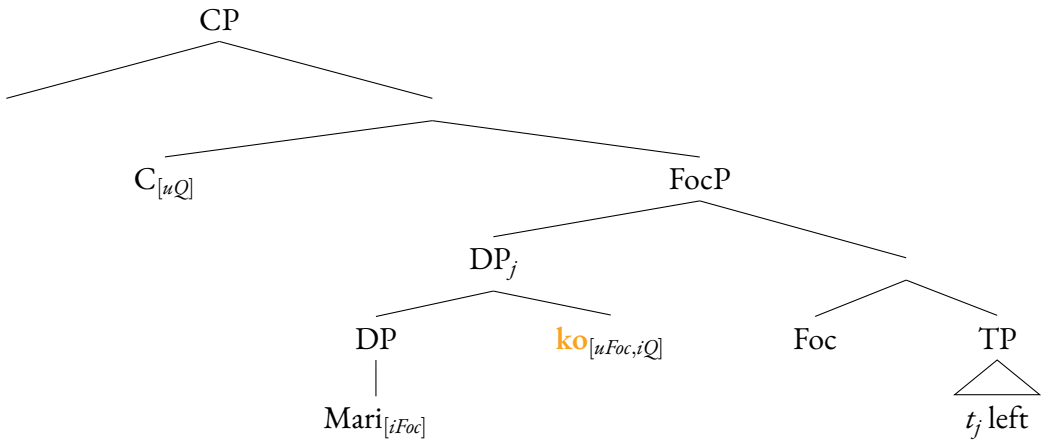


Figure 4.1: Structure of (2)

(3) [Oya **mı**] ayrildi? [Turkish]
Oya PolQ leave.PAST
'Was it Oya who left?'

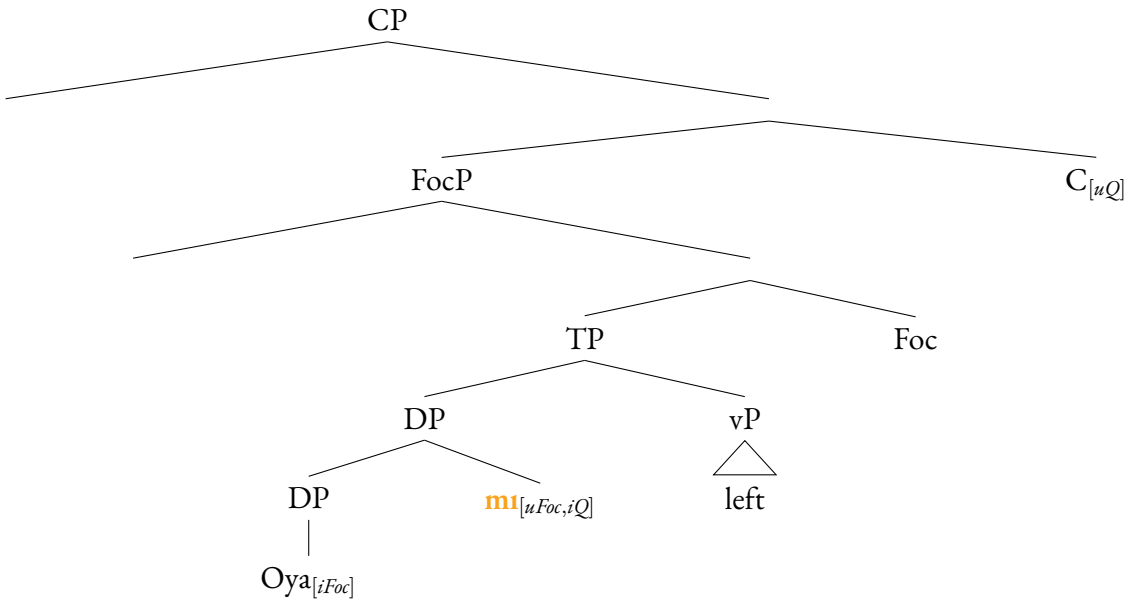


Figure 4.2: Structure of (3)

Although I assume that the focus and interrogative features are always present in the structures, I won't include them in the rest of this dissertation. To illustrate that $C_{[uQ]}$ is an interrogative head and that its feature has been checked, I will rewrite it $C_{[+Q]}$.

The reader may notice that the syntactic analysis presented above differs from Kamali's (2011) and Özyıldız's (2015) analyses of Turkish *mI*. Both of these researchers propose that this particle is generated as the head of a projection below the interrogative $C_{[+Q]}$ head and attracts the constituent it associates with to its specifier. As far as I know, there is no strong argument in favor of their analysis or in favor of mine. In order to provide a unified analyis of PolQs *mI* and *-kO*, I decided to build on Holmberg's analysis of Finnish *-kO* and to analyzed these two particles as crosscategorial particles that can attach to any constituent in the structure.

4.3 A baseline semantics for polar questions

There are two main approaches to the semantics of questions which differ in what questions denote. Groenendijk and Stokhof (1982) take questions to denote partitions over possible worlds. Given a set of possible worlds W, a partition of W consists of a set of non-overlapping cells such that the union of these cells equals to W. Two worlds belong to the same cell if and only if the proposition out of which the question is built has the same extension in these two worlds. To illustrate, let us consider the polar question in (4). This question has the LF in (5-a). Combining the proposition in (5-b) with the interrogative $C_{[+Q]}$ head defined in (5-c), we obtain (5-d) as the denotation of the question in (4). On this analysis, the intention of a question is thus a function from worlds to sets of worlds which maps every world to the set of worlds which are equivalent to it with respect to the question nucleus.

(4) Did Zoe leave?

(5) a. $[_{CP}\ C_{[+Q]}\ [_{TP}$ Zoe left $]\ ]$

b. $[\![\ \text{TP}\ ]\!] = \lambda w.left_w(z)$

c. $[\![\ C_{[+Q]}\ ]\!] = \lambda p_{<s,t>}.\lambda w.\lambda w'.[p(w) = p(w')]$

d. $[\![\ \text{CP}\ ]\!] = \lambda w.\lambda w'.[left_w(z) = left_{w'}(z)]$

e.

w: $left_w(z) = 1$
w: $left_w(z) = 0$

On the second approach, a question denotes a set of propositions which consists of the set of possible answers of this question (Hamblin 1973, Karttunen 1977). Different ways to implement this approach have been proposed in the literature. Example (6) illustrates one way to implement it for polar questions. The polar question in (4) has the LF in (6-a). Combining the proposition in (6-b)

with the interrogative $C_{[+Q]}$ head in (6-c) and then with the $OP_{Y/N}$ operator in (6-e), we obtain (6-f) as the denotation of the question in (4). That is, this question denotes a set of two propositions, consisting of its positive and its negative answer.

(6) a. $[_{CP}\ OP_{Y/N}\ [_{\varphi}\ C_{[+Q]}\ [_{TP}$ Zoe left $]\ ]\ ]$

b. $[\![\ \text{TP}\ ]\!] = \lambda w.left_w(z)$

c. $[\![\ C_{[+Q]}\ ]\!] = \lambda q_{<s,t>}.\lambda p_{<s,t>}.p = q$

d. $[\![\ \varphi\ ]\!] = \lambda p_{<s,t>}.p = \lambda w.left_w(z)$

e. $[\![\ OP_{Y/N}\ ]\!] = \lambda Q_{<st,t>}.\{\lambda w.\forall p \in Q[p(w) = p(w')]|w' \in W\}$

f. $[\![\ \text{CP}\ ]\!] = \{\lambda w.left_w(z), \lambda w.\neg left_w(z)\}$

In the past decades, several researchers have argued that a polar question does not denote a set containing both of its possible answers, as in (6), but rather denotes a singleton-set which only contains the proposition out of which the question is formed (Biezma and Rawlins 2012, Roberts 2012, Roelofsen and Farkas 2015, a.o.). Empirical arguments in favor of such an analysis come from the distinct behavior of polar questions and alternative questions, biased polar questions, the interpretation of response particles, among others. On this proposal, the polar question in (4) can be analyzed as in (7). That is, it denotes the singleton set which contains the proposition *that Zoe left*.

(7) a. $[_{CP}\ C_{[+Q]}\ [_{TP}$ Zoe left $]\ ]$

b. $[\![\ \text{TP}\ ]\!] = \lambda w.left_w(z)$

c. $[\![\ C_{[+Q]}\ ]\!] = \lambda q_{<s,t>}.\lambda p_{<s,t>}.p = q$

d. $[\![\ \text{CP}\ ]\!] = \lambda p_{<s,t>}.p = \lambda w.left_w(z)$

The question whether polar questions denote singleton-sets or sets containing both of their possible answers is outside the scope of this dissertation. For sake of consistency with the recent literature on polar questions, I adopt the singleton analysis. As shown in (6), the singleton denotation can be

mapped to the corresponding bipolar denotation by adding an extra operator if necessary.

Up to now, I have left the presuppositions that come with polar questions out of the discussion. However, recall that a polar question like (8-a) comes with the ignorance presupposition in (8-b). I propose that this presupposition is encoded within the CP-layer. Specifically, I define the interrogative $C_{[+Q]}$ head as in (9-c). Composing $C_{[+Q]}$ with the proposition in (9-b), we obtain (9-d) as the denotation of the question in (8-a). This question denotes a partial function from worlds to sets of propositions, only defined in worlds where it is possible that Zoe left and it is possible that she didn't leave.

(8) a. Did Zoe leave?

b. *Ignorance presupposition:* $\diamond$ Zoe left $\wedge \diamond$ Zoe didn't leave

(9) a. $[_{CP}\ C_{[+Q]}\ [_{TP}$ Zoe left $]\ ]$

b. $[\![\ \text{TP}\ ]\!] = \lambda w.left_w(z)$

c. $[\![\ C_{[+Q]}]\!] = \lambda q.\lambda w : \diamond q(w) \wedge \diamond \neg q(w).\lambda p.p = q$

d. $[\![\ \text{CP}\ ]\!] = \lambda w : \underline{\diamond left_w(z) \wedge \diamond \neg left_w(z)}.\lambda p.p = \lambda w.left_w(z)$

As discussed in Chapter 3, in addition to this ignorance presupposition, some polar questions come with a propositional presupposition. For instance, the question in (10-a) inherits the presupposition triggered by the definite article given in (10-b). To capture the projection of propositional presuppositions in polar questions, I adopt Guerzoni's proposal according to which the interrogative $C_{[+Q]}$ head denotes a function that inherits the definedness conditions of its argument (see Section 3.6). The new interrogative $C_{[+Q]}$ head is defined in (11-c). Once we combine $C_{[+Q]}$ with the proposition in (11-b), we obtain the interpretation in (11-d) for the question in (10-a). This question as a whole presupposes that there is exactly one contextually relevant cake, and that it is possible that Zoe brought this cake and it is possible that she did not. We thus derive the two pre-

suppositions given in (10) that this question comes with.

(10) a. Did Zoe bring the cake?

b. *Propositional presupposition:* There is a unique (contextually relevant) cake.

c. *Ignorance presupposition:* $\diamond_S$ Zoe brought the cake $\wedge \diamond_S$ Zoe didn't bring the cake

(11) a. $[_{CP}\ \mathrm{C}_{[+Q]}\ [_{TP}$ Zoe brought the cake $]\ ]$

b. $[\![\ \mathrm{TP}\ ]\!] = \lambda w : \exists!x[cake_w(x)].brought_w(\iota x : cake_w(x))(z)$

c. $[\![\ \mathrm{C}_{[+Q]}]\!] = \lambda q.\lambda w : w \in dom(q) \wedge (\diamond q(w) \wedge \diamond \neg q(w)).\lambda p.p = q$

d. $[\![\ \mathrm{CP}\ ]\!] = \lambda w :$

$$\underline{\exists!x[cake_w(x)] \wedge \diamond brought_w(\iota x : cake_w(x))(z) \wedge \diamond \neg brought_w(\iota x : cake_w(x))(z).}$$

$$\lambda p.p = \lambda w : \exists!x[cake_w(x)].brought_w(\iota x : cake_w(x))(z)$$

With this baseline analysis for polar questions and their presuppositions in hand, I turn to my analysis of PolQs-questions in the next section.

4.4 Analysis of PolQs-questions

Building on Atlamaz (2015) and Kamali and Krifka (2020), I analyze PolQs as focus markers which are interpreted within the proposition out of which the question is formed. In other words, I claim that PolQs are interpreted below the interrogative $\mathrm{C}_{[+Q]}$ head. The alternative analyis – i.e., that PolQs are interpreted above $\mathrm{C}_{[+Q]}$ – will be considered and rejected in section 4.7. These particles can combine with constituents of any semantic type as long as these constituents carry a F(ocus)-feature, as defined in (12).

(12) $[\![\ \alpha_F$ **kO/mI** $]\!]^g = \alpha$ defined iff α is F-marked

I adopt a two-tier alternative semantics analysis of focus (Rooth, 1985, 1992) according to which

the function of focus is to evoke alternatives. On this analysis, expressions come with both an ordinary (o-value) and a focus-semantic value (f-value). The f-value of an expression which does not carry any F-feature is the singleton-set that contains its ordinary semantic value, as illustrated in (13). In contrast, the f-value of an F-marked expression corresponds to the set of objects of the same semantic type. As for its o-value, it is the same as its regular semantic value without an F feature, as illustrated in (14).

(13) a. $[\![\text{Zoe}]\!]^o = z$

b. $[\![\text{Zoe}]\!]^f = \{z\}$

(14) a. $[\![\text{Zoe}_F]\!]^o = z$

b. $[\![\text{Zoe}]\!]^f = \{x | x \in D_e\}$

The focus alternatives combine in a compositional manner, via the rule of pointwise functional application, until they get factored into meaning via some operator.

(15) *Pointwise Functional Application*

If the node α has $\{\beta, \gamma\}$ as the set of its daughters, $[\![\beta]\!]^{alt} \subseteq D_\sigma$, and $[\![\gamma]\!]^{alt} \subseteq D_{<\sigma,\tau>}$, then $[\![\alpha]\!]^{alt} = \{a(b) | a \in [\![\gamma]\!]^{alt} \wedge b \in [\![\beta]\!]^{alt}\}$

In particular, the focus alternatives triggered by the constituent PolQs combine with at LF project all the way up to the focus-sensitive ~-operator. Rooth's ~-operator is defined in (16). This operator evaluates all foci in its scope unselectively and neutralizes their contribution by resetting the f-value to the o-value (Beck, 2006).

(16) If $\psi = [\sim_\Gamma \gamma]$, then:

a. $[\![\psi]\!]^o = [\![\gamma]\!]^o$

Defined iff $g(\Gamma) \subseteq [\![\gamma]\!]^f \wedge [\![\gamma]\!]^o \in g(\Gamma) \wedge \exists p[p \neq [\![\gamma]\!]^o \wedge p \in g(\Gamma)]$[1]

b. $[\![\psi]\!]^f = \{[\![\gamma]\!]^o\}$

Let us now turn to the denotation of the interrogative $C_{[+Q]}$ head. As mentioned in the previous section, I propose that question-specific presupppositions are triggered by $C_{[+Q]}$. In languages with PolQs, I defined $C_{[+Q]}$ as a focus operator which triggers both an existential presupposition and an interrogative presupposition, as in (17).

(17) $[\![C_{[+Q]}]\!]^g = \lambda\Gamma_{<st,t>}.\lambda q_{<s,t>}.\lambda w : \exists\psi \in \Gamma[\psi(w) = 1] \wedge (\diamond q(w) \wedge \diamond\neg q(w)).\lambda p.p = q$

The set Γ is identical to the set provided by the ~-operator, which is moreover dependent on the focus value of the sister node of ~.

To illustrate this analysis, let us consider again the polar question involving Finnish *-kO* in (18) and the polar question involving Turkish *mI* in (20). The step-by-step composition of the Finnish question in (18) is given in (19) and the step-by-step composition of the Turkish question in (20) is given in (21). Both questions denote partial function from worlds to sets of propositions, which are only defined in worlds in which one proposition in the alternative set $g(\Gamma)$ is true and in which both the positive answer and the negative answer can be true.

(18) [Mari-ko] lähti? [Finnish]
Mari-PolQ left
'Was it Mari who left?'

a. *Existential presupposition:* Someone left.

b. *Ignorance presupposition:* $\diamond$ Mari left $\wedge\diamond$ Mari didn't leave

(19) a. $[_{CP}\ C_{[+Q]}\ \Gamma\ [_{\psi}\ [_{FocP}\ [\ \text{Mari}_F\text{-ko}]\ [\ \lambda x\ [_{TP}\ \text{x left}\ ]]]\ \sim_\Gamma]\ ]$

b. $[\![\ \text{Mari}_F\text{-ko}\ ]\!]^g = m$

[1] In the rest of this dissertation, I will ignore the second and third conjunct of the presupposition of this operator when they are not relevant to the discussion.

c. $[\![\ \text{FocP}\ ]\!]^g = \lambda w.left_w(m)$

d. $[\![\ \psi\ ]\!]^g = \lambda w : g(\Gamma) \subseteq \{\lambda w.left_w(z) | z \in D_e\}.left_w(m)$

e. $[\![\ \text{C}_{[+Q]}\ ]\!]^g = \lambda\Gamma.\lambda q.\lambda w : \exists\psi \in \Gamma[\psi(w) = 1] \wedge (\diamond q(w) \wedge \diamond\neg q(w)).\lambda p.p = q$

f. $[\![\ \text{CP}\ ]\!]^g = \lambda w :$

$$\underline{\exists\psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond left_w(m) \wedge \diamond\neg left_w(m).}$$

$$\lambda p.p = \lambda w.left_w(m)$$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w.left_w(Mari) \\ \lambda w.left_w(Olli) \\ \lambda w.left_w(Pekka) \end{array} \right\}$$

(20) [Oya **mı**] *Sessizev*'i aldı? [Turkish]
Oya PolQ *Sessizev*-ACC buy.PST
'Was it Oya who bought *Sessizev*?'

a. *Existential presupposition:* Someone bought *Sessizev*.

b. *Ignorance presupposition:* $\diamond$ Oya bought *Sessizev* $\wedge$ $\diamond$ Oya didn't buy *Sessizev*

(21) a. $[_{CP}\ [_{\psi}\ [_{TP}\ [\ \text{Oya}_F\ \textbf{mı}\ ]\ \textit{Sessizev}\ \text{bought}\ ]\ \sim_{\Gamma}]\ C_{[+Q]}\ \Gamma\ ]$

b. $[\![\ \text{Oya}_F\ \textbf{mı}\ ]\!]^g = o$

c. $[\![\ \text{TP}\ ]\!]^g = \lambda w.bought_w(Sessizev)(o)$

d. $[\![\ \psi\ ]\!]^g = \lambda w : g(\Gamma) \subseteq \{\lambda w.bought_w(Sessizev)(z) | z \in D_e\}.bought_w(Sessizev)(o)$

e. $[\![\ \text{C}_{[+Q]}\ ]\!]^g = \lambda\Gamma.\lambda q.\lambda w : \exists\psi \in \Gamma[\psi(w) = 1] \wedge (\diamond q(w) \wedge \diamond\neg q(w)).\lambda p.p = q$

f. $[\![\ \text{CP}\ ]\!]^g = \lambda w :$

$$\underline{\exists\psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond bought_w(Sessizev)(o) \wedge \diamond\neg bought_w(Sessizev)(o)).}$$

$$\lambda p.p = \lambda w.bought_w(Sessizev)(o)$$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w.bought_w(Sessizev)(Oya) \\ \lambda w.bought_w(Sessizev)(Ali) \\ \lambda w.bought_w(Sessizev)(Dilara) \end{array} \right\}$$

In the next section, I discuss how the proposed account captures the characteristic properties of PolQs and of the questions where they occur.

4.5 Deriving the properties of PolQs and PolQs-questions

The signature properties of PolQs are summarized again in the table below.

	Mandatory?	Polar Q? Alternative Q?	*Wh*-Q?	Embedded Q?	Q only?	Focus sensitive?
Finnish	yes	yes	no	yes	yes	yes
Turkish	yes	yes	no	yes	yes	yes

Figure 4.3: Signature properties of PolQs

Given that Finnish and Turkish PolQs share the same characteristic properties, I will focus on Turkish *mI* in the rest of this section to illustrate how my analysis accounts for these properties. As mentioned in section 4.2, the main difference between Finnish PolQ-questions and Turkish PolQs-questions is syntactic. While in Turkish, the *mI*-phrase can remain in situ, in Finnish, the *-kO*-phrase moves to Spec,FocP on the surface.

PolQs are mandatory

Example (22) shows that questions which do not involve the particle *mI* are not well-formed polar questions in Turkish.

(22) *Oya *Sessizev*-i aldı? [Turkish]
Oya *Sessizev*-ACC buy.PST
(Int.) Did Oya buy *Sessizev*?

I propose that the role of PolQs is to satisfy the non-singleton requirement of the ~-operator that co-occurs with $C_{[+Q]}$. The step-by-step composition of the question in (22) is given in (23). The set of focus alternatives of the proposition that combines with ~ is a singleton-set. As a result, the presupposition of this operator is not satisfied and the question is undefined.

(23) a. $[_{CP}\ [_{\psi}\ [_{TP}$ Oya *Sessizev* bought $]\ {\sim_{\Gamma}}]\ C_{[+Q]}\ \Gamma\ ]$

b. $[\![\ \text{TP}\ ]\!]^g = \lambda w.bought_w(Sessizev)(o)$

$[\![\ \text{TP}\ ]\!]^f = \{\lambda w.bought_w(Sessizev)(o)\}$

c. If $\varphi = [{\sim_{\Gamma}}\ \gamma]$, then:

(i) $[\![\varphi]\!]^g = [\![\gamma]\!]^g$

Defined iff $g(\Gamma) \subseteq [\![\gamma]\!]^f \wedge [\![\gamma]\!]^g \in g(\Gamma) \wedge \exists p[p \neq [\![\gamma]\!]^g \wedge p \in g(\Gamma)]$

(ii) $[\![\varphi]\!]^f = \{[\![\gamma]\!]^g\}$

d. $[\![\ \psi\ ]\!]^g = \#$

Questions like (24) which involve a stressed expression are not well-formed polar questions in Turkish either. I propose that this is because underlyingly, they involve a covert exhaustification operator EXH which co-occurs with the ~-operator. EXH is defined in (25). Given a sentence φ and a set of alternatives Δ of φ, *EXH* φ asserts the conjunction of φ and the negations of all alternatives that are not entailed by the assertion.

(24) *OYA *Sessizev*-i aldı?
Oya *Sessizev*-ACC buy.PST
(Int.) Did Oya buy *Sessizev*?

(25) $[\![\ \text{EXH}\ \Delta]\!]^g(\varphi) = \lambda w.\varphi_w \wedge \forall q \in g(\Delta)\ [q_w \rightarrow \varphi \subseteq q]$

The step-by-step composition of the question in (24) is given in (26). The ~-operator which comes with EXH evaluates the F-marked expression in its scope and resets its focus semantic value to its

ordinary semantics value. Thus, the set of focus alternatives of the proposition that combines with the ~-operator that comes with $C_{[+Q]}$ is a singleton. As a result, the presupposition of this operator is not satisfied and the question is again undefined.

(26) a. $[_{CP}\,[_{\psi}\,[_{\chi}$ EXH Δ $[_{\zeta}\,[_{TP}$ Oya$_F$ *Sessizev* bought $]\,{\sim_{\Delta}}]\,]\,{\sim_{\Gamma}}]\;C_{[+Q]}\;\Gamma\,]$

b. $[\![\,\text{TP}\,]\!]^g = \lambda w.bought_w(Sessizev)(o)$

$[\![\,\text{TP}\,]\!]^f = \{\lambda w.bought_w(Sessizev)(x) | x \in D_e\}$

c. If $\varphi = [{\sim_{\Gamma}}\,\gamma]$, then:

(i) $[\![\varphi]\!]^g = [\![\gamma]\!]^g$

Defined iff $g(\Gamma) \subseteq [\![\gamma]\!]^f \wedge [\![\gamma]\!]^g \in g(\Gamma) \wedge \exists p[p \neq [\![\gamma]\!]^g \wedge p \in g(\Gamma)]$

(ii) $[\![\varphi]\!]^f = \{[\![\gamma]\!]^g\}$

d. $[\![\,\zeta\,]\!]^g = \lambda w : g(\Delta) \subseteq \{\lambda w.bought_w(Sessizev)(x) | x \in D_e\}.bought_w(Sessizev)(o)$

$[\![\,\zeta\,]\!]^f = \{\lambda w.bought_w(Sessizev)(o)\}$

e. $[\![\,\text{EXH}\,\Delta]\!]^g = \lambda p.\lambda w.p_w \wedge \forall q \in g(\Delta)\,[q_w \rightarrow p \subseteq q]$

f. $[\![\,\chi\,]\!]^g = \lambda w : g(\Delta) \subseteq \{\lambda w.bought_w(Sessizev)(x) | x \in D_e\}.$

$bought_w(Sessizev)(o) \wedge \forall q \in g(\Delta)\,[q_w \rightarrow (\lambda w.bought_w(Sessizev)(o)) \subseteq q]$

g. $[\![\,\psi\,]\!]^g = \#$

PolQs are focus-sensitive

As previously discussed, PolQs are focus-sensitive. They can attach to any constituent in the structure as long as this constituent is F-marked. In particular, in a polar question like (27), Turkish *mI* can either follow the subject or the object or can appear in final position. The position of this particle affects the interpretation of the question, and in particular the presuppositions it comes with.

(27) Oya (**mı**) *Sessizev*'i (**mi**) aldı (**mı**)?
Oya PolQ *Sessizev*-ACC PolQ buy.PST PolQ

In Section 4.4, I have shown how the proposed account captures the interpretation of a question where *mI* associates with the subject. In the following examples, I turn to the other positions of *mI*. In particular, I derive the interpretations of questions where *mI* follows the object and where *mI* occurs in final position. When *mI* follows the object, it can either associate with the object, the VP or the whole proposition out of which the question is formed. This is illustrated in examples (28)-(32).

(28) a. *What did Oya buy yesterday?*

Oya [Sessizev-i **mi**] aldı?
Oya *Sessizev*-ACC PolQ buy.PST
'Was it *Sessizev* that Oya bought?'

b. *Existential presupposition:* Oya bought something.

c. *Ignorance presupposition:* $\diamond$ Oya bought *Sessizev* $\wedge \diamond$ Oya didn't buy *Sessizev*

(29) a. $[_{CP}\,[_{\psi}\,[_{TP}$ Oya $[\,\textit{Sessizev}_F$ **mi**$]$ bought $]\,{\sim_\Gamma}]\; C_{[+Q]}\;\Gamma\,]$

b. $[\![\,\textit{Sessizev}_F$ **mi** $]\!]^g = s$

c. $[\![\,\text{TP}\,]\!]^g = \lambda w.\textit{bought}_w(s)(o)$

d. $[\![\,\psi\,]\!]^g = \lambda w : g(\Gamma) \subseteq \{\lambda w.\textit{bought}_w(z)(o) | z \in D_e\}.\textit{bought}_w(s)(o)$

e. $[\![\,\text{CP}\,]\!]^g = \lambda w :$

$$\frac{\exists \psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond \textit{bought}_w(s)(o) \wedge \diamond \neg \textit{bought}_w(s)(o)).}{\lambda p.p = \lambda w.\textit{bought}_w(s)(o)]}$$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w.\textit{bought}_w(\textit{Sessizev})(o) \\ \lambda w.\textit{bought}_w(\textit{Nineteen Eighty-Four})(o) \\ \lambda w.\textit{bought}_w(\textit{The Idiot})(\textit{Oya}) \end{array} \right\}$$

(30) a. *What did Oya do yesterday?*

Oya [Sessizev-i **mi** aldı]?
Oya *Sessizev*-ACC PolQ buy.PST

'Was it buying *Sessizev* that Oya did?'

b. *Existential presupposition:* Oya did something.

c. *Ignorance presupposition:* ◇ Oya bought *Sessizev* ∧ ◇ Oya didn't buy *Sessizev*

(31) a. $[_{CP}\ [_{\psi}\ [_{TP}$ Oya $[\ [$*Sessizev* bought$]_F$ **mi**$]\ ]\ {\sim}_{\Gamma}]\ C_{[+Q]}\ \Gamma\ ]$

b. $[\![\ [$*Sessizev* bought$]_F$ **mi** $]\!]^g = \lambda x.\lambda w.bought_w(s)(x)$

c. $[\![\ \text{TP}\ ]\!]^g = \lambda w.bought_w(Sessizev)(o)$

d. $[\![\ \psi\ ]\!]^g = \lambda w : g(\Gamma) \subseteq \{\lambda w.P_w(o)] | P \in D_{<e,st>}\}.bought_w(Sessizev)(o)$

e. $[\![\ \text{CP}\ ]\!]^g = \lambda w :$

$$\underline{\exists \psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond bought_w(s)(o) \wedge \diamond \neg bought_w(s)(o)).}$$

$$\lambda p.p = \lambda w.bought_w(s)(o)]$$

with $g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w.bought_w(s)(o) \\ \lambda w.ran_w(o) \\ \lambda w.stayed\text{-}home(o) \end{array} \right\}$

(32) a. *What happened?*

[Oya Sessizev-i **mi** aldı]?
Oya *Sessizev*-ACC PolQ buy.PAST
'Did Oya buy *Sessizev*?'

b. *Existential presupposition:* Something happened.

c. *Ignorance presupposition:* ◇ Oya bought *Sessizev* ∧ ◇ Oya didn't buy *Sessizev*

(33) a. $[_{CP}\ [_{\psi}\ [_{TP}\ [$ Oya *Sessizev* bought $]_F$ **mi** $]\ {\sim}_{\Gamma}]\ C_{[+Q]}\ \Gamma\ ]$

b. $[\![\ \text{TP}\ ]\!]^g = \lambda w.bought_w(s)(o)$

c. $[\![\ \psi\ ]\!]^g = \lambda w : g(\Gamma) \subseteq \{p | p \in D_{<s,t>}\}.bought_w(s)(o)$

d. $[\![\ \text{CP}\ ]\!]^g = \lambda w :$

$$\underline{\exists \psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond bought_w(s)(o) \wedge \diamond \neg bought_w(s)(o)).}$$

$$\lambda p.p = \lambda w.bought_w(s)(o)]$$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w.bought_w(Sessizev)(Oya) \\ \lambda w.stayed\text{-}home_w(Ali) \\ \lambda w.ran_w(Dilara) \end{array} \right\}$$

The fact that *mI* can associate with the object, the VP and the whole proposition when it attaches to the object on the surface is not a property specific to this particle. Other focus-sensitive particles like *also/even* show the same behavior in Turkish, as illustrated in example (34).

(34) Dindar amcam iskambil **de/bile** oyna-dı.
religious uncle.my cards even play-PAST
'My religious uncle also/even played cards yesterday.'

a. NP focus: . . . and he played other games.

b. VP focus: . . . and he did other things.

c. TP focus: . . . and other amazing things happened. (Kamali 2015)

Let us now turn to polar questions when *mI* appears in final position. In this case, it can either associate with the predicate (35) or the polarity head (37) (Kamali and Krifka 2020).

(35) a. *What did Oya do with Sessizev yesterday?*

Oya Sessizev-i [aldı mı]?
Oya *Sessizev*-ACC buy.PST PolQ
'Was it buying it that Oya did with *Sessizev*?'

b. *Existential presupposition:* Oya did something with *Sessizev*.

c. *Ignorance presupposition:* ◇ Oya bought *Sessizev* ∧ ◇ Oya didn't buy *Sessizev*

(36) a. $[_{CP}\ [_{\psi}\ [_{TP}$ Oya *Sessizev* [bought$_F$ mı]] ~$_\Gamma$] $C_{[+Q]}$ Γ]

b. $[\![$ bought$_F$ mı $]\!]^g = \lambda y.\lambda x.\lambda w.bought_w(y)(x)$

c. $[\![$ TP $]\!]^g = \lambda w.bought_w(s)(o)$

d. $[\![\psi]\!]^g = \lambda w : g(\Gamma) \subseteq \{\lambda w.R_w(s)(o) | R \in D_{<e,<e,st>>}\}.bought_w(s)(o)$

e. $[\![\text{CP}]\!]^g = \lambda w :$

$$\underline{\exists \psi \in g(\Gamma)[\psi(w) = 1] \wedge (\Diamond bought_w(s)(o) \wedge \Diamond \neg bought_w(s)(o))}.$$

$$\lambda p.p = \lambda w.bought_w(s)(o)]$$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w.bought_w(Sessizev)(Oya) \\ \lambda w.read_w(Sessizev)(Oya) \\ \lambda w.sold_w(Sessizev)(Oya) \end{array} \right\}$$

(37) a. *Did Oya buy Sessizev or not?*

Oya Sessizev-i aldı **mı**?
Oya *Sessizev*-ACC buy.PAST PolQ
'Did Oya buy *Sessizev*?'

b. *Existential presupposition:* Either Oya bought *Sessizev* or she didn't buy *Sessizev*.

c. *Ignorance presupposition:* ◇ Oya bought *Sessizev* ∧ ◇ Oya didn't buy *Sessizev*

(38) a. $[_{CP}\ C_{[+Q]}\ [_{PolP}\ [_{TP}$ Oya *Sessizev* bought $]\ [_{Pol} +]_F\ ]$ **mı** $\sim_\Gamma]\ \Gamma\ [_\psi\ ]$

b. $[\![\text{TP}]\!]^g = \lambda w.bought_w(Sessizev)(Oya)$

c. $[\![+]\!]^g = \lambda p.p$

d. $[\![\text{PolP}]\!]^g = \lambda w.bought_w(s)(o)$

e. $[\![\psi]\!]^g = \lambda w : g(\Gamma) \subseteq \{bought_w(s)(o), \neg bought_w(s)(o)\}.bought_w(s)(o)$

f. $[\![\text{CP}]\!]^g = \lambda w :$

$$\underline{\exists \psi \in g(\Gamma)[\psi(w) = 1] \wedge (\Diamond bought_w(s)(o) \wedge \Diamond \neg bought_w(s)(o))}.$$

$$\lambda p.p = \lambda w.bought_w(s)(o)]$$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w.bought_w(Sessizev)(Oya) \\ \lambda w.\neg bought_w(Sessizev)(Oya) \end{array} \right\}$$

Questions with final *mI*, in contrast to questions where *mI* follows the object, cannot be used out

of the blue, as illustrated in (39)-(40). The analysis presented above helps us better understand this contrast. The questions with final *mI* share the same presuppositions as the alternative questions *Did someone break the window or not?* and *Did the baby roll down the bed or not?*. These alternative questions, just like questions with final *mI*, are infelicitous in such contexts, suggesting that this infelicitousness should be derived from the presuppositions.

(39) *Hearing a sudden crash in the next room, I run, open the door and ask:* (Kamali 2015)

a. Biri cam-ı **mı** kır-dı?
someone window-ACC PolQ break-PAST
'Did someone break the window?'

b. #Biri cam-ı kır-dı **mı**?
someone window-ACC break-PAST PolQ

(40) *Hearing a sudden crash in the next room, I run, open the door and ask:*

a. Bebek yatak-tan **mı** yuvarlan-dı?
baby bed-ABL PolQ roll-PAST
'Did the baby roll down the bed?'

b. #Bebek yatak-tan yuvarlan-dı **mı**?
baby bed-ABL roll-PAST PolQ

PolQs appear in polar and alternative questions

Recall that PolQ *mI* also participates in the formation of alternative questions. In alternative questions, the use of *mI* is mandatory, just like in polar questions. I propose that alternative questions in Turkish are disjunctions of polar questions. Similar analyses of alternative questions have been proposed by Uegaki (2014) for Japanese alternative questions, Enguehard (2020) for English alternative questions, and Mayr (2020) for Polish alternative questions, among others. The step-by-step composition of the question in (41) is provided in (42). In each disjunct, *mI* satisfies the non-singleton requirement of the ~-operator that co-occurs with $C_{[+Q]}$. The disjunction is interpreted as a generalized disjunction (Partee and Rooth 1983), as defined in (42-d). Composition the

semantic values of the two CPs with the semantic value of the disjunction, we derive in (42-e) the desired interpretation of the alternative question in (41).

(41) [Oya **m1**] *Sessizev*-i aldı (yoksa) [Ali **m1**]?
Oya PolQ *Sessizev*-ACC buy.PST or Ali PolQ
'Was it Oya who bought *Sessizev* or was it Ali?'

(42) a. $[_{CoordP}\,[_{CP_1}\,[_{\psi}\,[_{TP}\,[\,\text{Oya}_F\ \textbf{m1}]\ \textit{Sessizev}\ \text{bought}\,]\sim_\Gamma]\ C_{[+Q]}\ \Gamma\,]\ [_{Coord^0}\ \text{or}]$
$[_{CP_2}\,[_{\psi}\,[_{TP}\,[\,\text{Ali}_F\ \textbf{m1}]\ \textit{Sessizev}\ \text{bought}\,]\sim_\Gamma]\ C_{[+Q]}\ \Gamma\,]]$

b. $[\![\,\text{CP}_1\,]\!]^g = \lambda w:$

$$\underline{\exists\psi \in g(\Gamma)[\psi(w)=1] \wedge (\diamond \textit{bought}_w(s)(o) \wedge \diamond\neg \textit{bought}_w(s)(o))}.$$

$$\lambda p.p = \lambda w.\textit{bought}_w(s)(o)$$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w.\textit{bought}_w(\textit{Sessizev})(\textit{Ali}) \\ \lambda w.\textit{bought}_w(\textit{Sessizev})(\textit{Oya}) \end{array} \right\}$$

c. $[\![\,\text{CP}_2\,]\!]^g = \lambda w:$

$$\underline{\exists\psi \in g(\Gamma)[\psi(w)=1] \wedge (\diamond \textit{bought}_w(s)(a) \wedge \diamond\neg \textit{bought}_w(s)(a))}.$$

$$\lambda p.p = \lambda w.\textit{bought}_w(s)(a)$$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w.\textit{bought}_w(\textit{Sessizev})(\textit{Ali}) \\ \lambda w.\textit{bought}_w(\textit{Sessizev})(\textit{Oya}) \end{array} \right\}$$

d. $[\![\,\text{or}\,]\!]^g = \lambda Q.\lambda Q'.\lambda w.\lambda p.Q(w)(p) \vee Q'(w)(p)$

e. $[\![\,(41)\,]\!]^g = \lambda w:$

$$\underline{\exists\psi \in g(\Gamma)[\psi(w)=1]}$$

$$\underline{\wedge(\diamond \textit{bought}_w(s)(o) \wedge \diamond\neg \textit{bought}_w(s)(o)) \wedge (\diamond \textit{bought}_w(s)(a) \wedge \diamond\neg \textit{bought}_w(s)(a))}.$$

$$\lambda p.p = \lambda w.\textit{bought}_w(s)(o) \vee p = \lambda w.\textit{bought}_w(s)(a)$$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w.\textit{bought}_w(\textit{Sessizev})(\textit{Ali}) \\ \lambda w.\textit{bought}_w(\textit{Sessizev})(\textit{Oya}) \end{array} \right\}$$

PolQs can be embedded under both rogative and responsive predicates

Recall that PolQs can be embedded under both rogative and responsive predicates. This is illustrated again in (43) for Turkish *mI*.

(43) a. Ali [[Oya **mı**] *Sessizev*-i aldı] merak ediyor. [Turkish]
Ali Oya PolQ *Sessizev*-ACC buy.PST] wonder
'Ali wonders whether Oya bought *Sessizev*.'

b. Ali [[Oya **mı**] *Sessizev*-i aldı] biliyor.
Ali Oya PolQ *Sessizev*-ACC buy.PST] know
'Ali knows whether Oya bought *Sessizev*.'

In Chapter 3, I have shown that presuppositions coming with PolQs-questions are anchored to the attitude holder's beliefs when they are embedded under a rogative predicate like *wonder*. The embedded question in (43-a) thus comes with the two presuppositions in (44).

(44) a. *Existential presupposition:* Ali believes that someone bought *Sessizev*.

b. *Interrogative presupposition:* Ali believes that
[$\diamond$ Oya bought *Sessizev* $\wedge$ $\diamond$ Oya didn't buy *Sessizev*]

In contrast, when a PolQ-question is embedded under a responsive predicate like *know*, its presuppositions project to the matrix level. The embedded question in (43-b) comes with the two presupposition in (45).

(45) a. *Existential presupposition:* Someone bought *Sessizev*.

b. *Interrogative presupposition:* $\diamond$ Oya bought *Sessizev* $\wedge$ $\diamond$ Oya didn't buy *Sessizev*

Again, the projection pattern of the presuppositions coming with PolQs-questions is the same as the projection pattern of question-specific presuppositions. For instance, the existential presupposition of the *wh*-question *Who bought Sessizev?* also projects to the matrix level when embedded under *know*.

(46) a. Zoe knows who bought *Sessizev*.

b. *Existential presupposition:* Someone bought *Sessizev*.

I now turn to the analysis of the two embedding questions in (43). To begin with, I define the question-embedding predicate *wonder* as in (47). Just like other attitude predicates (Heim 1992), $wonder_w(Q)(x)$ presupposes that *x believes* $\pi(Q)$.

(47) For any question Q which presupposes $\pi(Q)$,
$[\![\text{ wonder }]\!]^g(Q)(x)(w)$ is defined iff $Dox^x_w \subseteq \pi(Q)$

As previously mentioned, the singleton denotation of polar questions must sometimes be mapped to the corresponding bipolar denotation (Biezma and Rawlins 2012, Uegaki 2018, a.o.) to avoid some type mismatch or other composition issues. In particular, this extra operation is necessary in accounting for question-embedding. One way to retrieve this bipolar denotation is to combine the singleton denotation of the question with the operator defined in (48).

(48) $[\![\text{ OP}_{Y/N}]\!] = \lambda Q.\lambda w.\{\lambda w.\forall p \in Q(w)[p(w) = p(w')]|w' \in W\}$

To illustrate how this analysis works, let us consider again the embedded question in (49). The semantic value of the embedded CP is given in (50-b). Composing (50-b) with the operator in (48), we obtain the semantic value in (50-c). This resulting semantic value then combines with the predicate *wonder* defined in (47) and the matrix subject. As a result, we obtain in (53) the desired interpretation for the embedded question in (49).

(49) Ali [[Oya **mı**] *Sessizev*-i aldı] merak ediyor.
Ali Oya PolQ *Sessizev*-ACC buy.PST] wonder
'Ali wonders whether Oya bought *Sessizev*.'

(50) a. $[_{TP}$ Ali $[_{\zeta}$ OP$_{Y/N}$ $[_{CP}$ $[_{\psi}$ $[_{TP}$ [Oya$_F$ **mı**] *Sessizev* bought] ~$_{\Gamma}$] $C_{[+Q]}$ Γ]] wonder]

b. $[\![\text{ CP }]\!]^g = \lambda w$:

$$\underline{\exists\psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond bought_w(s)(o) \wedge \diamond\neg bought_w(s)(o))}.$$

$$\lambda p.p = \lambda w.bought_w(s)(o)$$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w.bought_w(Sessizev)(Oya) \\ \lambda w.bought_w(Sessizev)(Ali) \\ \lambda w.bought_w(Sessizev)(Dilara) \end{array} \right\}$$

c. $[\![\zeta]\!]^g = \lambda w :$

$$\underline{\exists\psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond bought_w(s)(o) \wedge \diamond\neg bought_w(s)(o))}.$$

$$\{\lambda w.bought_w(s)(o), \lambda w.\neg bought_w(s)(o)\}$$

d. $[\![\,(49)\,]\!]^g = \lambda w :$

$$\underline{Dox_a^w \subseteq (\exists\psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond bought_w(s)(o) \wedge \diamond\neg bought_w(s)(o)))}.$$

$$wonder(\{\lambda w.bought_w(s)(o), \lambda w.\neg bought_w(s)(o)\})(a)$$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w.bought_w(Sessizev)(Oya) \\ \lambda w.bought_w(Sessizev)(Ali) \\ \lambda w.bought_w(Sessizev)(Dilara) \end{array} \right\}$$

Recall that when a polar question like (51-a) which involves the propositional presupposition in (51-b) is embedded under the rogative predicate *wonder*, this presupposition seems to be shared by both illocutionary agents, namely the attitude holder and the speaker (see Chapter 3 for a detailed discussion of this). That is, a speaker who utters the sentence *Lou wonders whether it was Zoe who went to the university.* usually believes the presupposition in (51-b).

(51) a. Was it Zoe who went to the university?

b. *Propositional presupposition:* Someone went to the university.

c. *Ignorance presupposition:*

◇ Zoe went to the university ∧ ◇ Zoe didn't go to the university

Note that the proposed account does not capture this effect. It derives for the embedded question in (52) the interpretation in (53). That is, this embedded question can only be uttered in a context where the attitude holder (in this case, Lou) believes that someone went to the university. Nothing in this denotation requires the speaker to share this belief.

(52) Lou wonders whether it was Zoe who went to the university.

(53) $[\![(51\text{-a})]\!]^g = \lambda w :$

$$\underline{Dox_l^w \subseteq (\exists \psi \in g(\Gamma)[\psi(w) = 1] \wedge}$$
$$\underline{(\diamond went_w(\iota x : university_w(x))(z) \wedge \diamond \neg went_w(\iota x : university_w(x))(z)))}.$$
$$wonder(\{\lambda w : \exists \psi \in g(\Gamma)[\psi(w) = 1].went_w(\iota x : university_w(x))(z),$$
$$\lambda w : \exists \psi \in g(\Gamma)[\psi(w) = 1].\neg went_w(\iota x : university_w(x))(z)\})(l)$$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w.went_w(\iota x : university_w(x))(Zoe) \\ \lambda w.went_w(\iota x : university_w(x))(Bill) \\ \lambda w.went_w(\iota x : university_w(x))(Max) \end{array} \right\}$$

Although in most contexts (as in the ones discussed in Chapter 3), the speaker seems to believe propositional presuppositions which come with embedded questions, the following example shows that this is not necessarily the case. When one makes explicit that the speaker and the attitude holder do not share the same beliefs, it becomes possible to felicitously utter an embedded question involving a propositional presupposition, as shown below.

(54) I don't know whether someone went to the university yesterday. But Lou believes that someone went there, and she wonders whether it was Zoe.

This example shows that the analysis in (53) derives the desired presuppositions for embedded questions involving propositional presuppositions as well. What remains to be accounted for is this effect we observe with propositional presuppositions but not with question-specific presuppositions.

This effect which is reminiscent of Heim's (1992) 'spill-over' effect discussed for attitude predicates will be investigated in future research.

Now that I have shown how the proposed account captures the interpretation of PolQs-questions embedded under rogative predicates like *wonder*, I turn to PolQs-questions embedded under responsive predicates like *know*. The meaning of *know* can be paraphrased as 'to know the answer of'. To retrieve the answer of a question, I adopt Dayal's (1996) answerhood operator ANS defined in (55). ANS is a partial function from questions to propositions which presupposes the existence of a unique most informative true member of the question denotation. When defined, it returns the most informative true answer.

(55) $[\![\text{ANS}]\!] = \lambda Q.\lambda w :$
$\exists p[p(w) = 1 \wedge p \in Q(w) \wedge \forall q[q \in Q(w) \wedge p \subseteq q]].$
$\iota p[p(w) = 1 \wedge p \in Q(w) \wedge \forall q[q \in Q(w) \wedge p \subseteq q]]$

The predicate *know* is defined in (56). As a factive predicate, it presupposes the truth of its complement.

(56) $[\![\text{know}]\!] = \lambda p.\lambda x.\lambda w : p(w) = 1.know(p)(x)$

To see how these pieces combine together, consider again the embedded PolQs-question in (57). The step-by-step composition of this question is provided in (58). First, the operator $\text{OP}_{Y/N}$ composes with the embedded CP in (58-b). The resulting denotation given in (58-c) then combines with ANS, as illustrated in (58-d). Finally, (58-d) combines with *know* and the matrix subject. As a result, we derive the interpretation in (58-e) for the embedded question in (57).

(57) Ali [[Oya **mı**] *Sessizev*-i aldı] biliyor.
Ali Oya PolQ *Sessizev*-ACC buy.PST] know
'Ali knows whether Oya bought *Sessizev*.'

(58) a. $[_{TP}$ Ali $[_{\chi}$ ANS $[_{\zeta}$ OP$_{Y/N}$ $[_{CP}$ [$[_{TP}$ [Oya$_F$ m1] *Sessizev* bought] ~$_\Gamma$] $C_{[+Q]}$ Γ]]] knows]

b. $[\![\text{CP}]\!]^g = \lambda w :$

$$\underline{\exists \psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond bought_w(s)(o) \wedge \diamond \neg bought_w(s)(o))}.$$

$$\lambda p.p = \lambda w.bought_w(s)(o)$$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w.bought_w(Sessizev)(Oya) \\ \lambda w.bought_w(Sessizev)(Ali) \\ \lambda w.bought_w(Sessizev)(Dilara) \end{array} \right\}$$

c. $[\![\zeta]\!]^g = \lambda w :$

$$\underline{\exists \psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond bought_w(s)(o) \wedge \diamond \neg bought_w(s)(o))}.$$

$$\{\lambda w.bought_w(s)(o), \lambda w.\neg bought_w(s)(o)\}$$

d. $[\![\chi]\!]^g = \lambda w :$

$$\underline{\exists \psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond bought_w(s)(o) \wedge \diamond \neg bought_w(s)(o)) \wedge}$$

$$\underline{\exists p[p(w) = 1 \wedge p \in \{\lambda w.bought_w(s)(o), \lambda w.\neg bought_w(s)(o)\} \wedge}$$

$$\underline{\forall q[q \in Q(w) \wedge p \subseteq q]}].$$

$$\iota p[p(w) = 1 \wedge p \in \{\lambda w.bought_w(s)(o), \lambda w.\neg bought_w(s)(o)\} \wedge$$

$$\forall q[q \in Q(w) \wedge p \subseteq q]]$$

e. $[\![(57)]\!] = \lambda w :$

$$\underline{\exists \psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond bought_w(s)(o) \wedge \diamond \neg bought_w(s)(o)) \wedge}$$

$$\underline{\exists p[p(w) = 1 \wedge p \in \{\lambda w.bought_w(s)(o), \lambda w.\neg bought_w(s)(o)\} \wedge}$$

$$\underline{\forall q[q \in Q(w) \wedge p \subseteq q]}].$$

$$know(\iota p[p(w) = 1 \wedge p \in \{\lambda w.bought_w(s)(o), \lambda w.\neg bought_w(s)(o)\} \wedge$$

$$\forall q[q \in Q(w) \wedge p \subseteq q]])(a)$$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w.bought_w(Sessizev)(Oya) \\ \lambda w.bought_w(Sessizev)(Ali) \\ \lambda w.bought_w(Sessizev)(Dilara) \end{array} \right\}$$

The resulting interpretation does not provide the desired interpretation for the embedded question in (57) yet. In particular, if the attitude holder knows the true answer to the question, they cannot be ignorant as to whether which answer is true at the same time (i.e., the ignorance presupposition cannot be met). To my knowledge, there are two possible ways to deal with this issue. One option is to anchor the possibility modal which is part of the ignorance presupposition to the speaker. In this case, the ignorance presupposition of a question like *Oya **mı** Sessizev'i aldı?* 'Was it Oya who bought *Sessizev*?' would have the following form: $\diamond_S$ Oya bought *Sessizev* $\wedge \diamond_S \neg$ Oya bought *Sessizev* leave. Such a presupposition would no longer be incompatible with the fact that the attitude holder knows the true answer to the embedded question in (57). Another option could be that the answerhood operator ANS filters the ignorance presupposition of the embedded question. In this case, the ignorance presupposition would no longer be present when the embedded CP combines with the predicate *know*, yielding the desired interpretation for the embedded question in (57). Further research is required to evaluate the consequences of these two possible options in order to determine which analysis is the correct one.

Interaction with other logical operators

To begin with, let us consider PolQs-questions involving negation. The polar question in (59-a) comes with the two presuppositions in (59-b).

(59) a. Oya **mı** ayril-ma-di? [Turkish]
Oya PolQ leave-NEG-PAST
'Was it Oya who didn't leave?'

b. *Existential presupposition:* Someone didn't leave.

Ignorance presuppposition: ◇ Oya didn't leave ∧ ◇ Oya left

In Turkish, negation occurs above vP and below TP, as suggested by the order of the morphemes on the verb (e.g., Ouhalla 2011, Jeretic 2020). The underlying structure of the polar question in (59-a) is given in (60-a). Composing the negative proposition in (60-b) with *mI*-phrase and then with the ~-operator and the interrogative $C_{[+Q]}$ head, we derive (60-f) as the interpretation of the question in (59-a), as expected.

(60) a. $[_{CP}\ [_{\psi}\ [_{\zeta}\ [\ \text{Oya}_{F}\ \textbf{mı}\ ]\ [\ \lambda x\ [_{TP}\ \neg\ [_{vP}\ \text{x left}\ ]]]]\ \sim_{\Gamma}]\ C_{[+Q]}\ \Gamma\ ]$

b. $[\![\ \text{TP}\ ]\!]^{g} = \lambda w.\neg \mathit{left}_{w}(x)$

c. $[\![\ \zeta\ ]\!]^{g} = \lambda w.\neg \mathit{left}_{w}(o)$

d. $[\![\ \psi\ ]\!]^{g} = \lambda w : g(\Gamma) \subseteq \{\lambda w.\neg \mathit{left}_{w}(z) | z \in D_{e}\}.\neg \mathit{left}_{w}(o)$

e. $[\![\ \text{C}_{[+Q]}\ ]\!]^{g} = \lambda\Gamma.\lambda q.\lambda w : \exists \psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond q(w) \wedge \diamond\neg q(w)).\lambda p.p = q$

f. $[\![\ \text{CP}\ ]\!]^{g} = \lambda w :$

$$\underline{\exists \psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond\neg \mathit{left}_{w}(o) \wedge \diamond \mathit{left}_{w}(o))}.$$

$$\lambda p.p = \lambda w.\neg \mathit{left}(o)$$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w.\neg \mathit{left}_{w}(\mathit{Oya}) \\ \lambda w.\neg \mathit{left}_{w}(\mathit{Ali}) \\ \lambda w.\neg \mathit{left}_{w}(\mathit{Dilara}) \end{array} \right\}$$

Let us now turn to the interaction of PolQs with quantifiers. In particular, recall that when PolQ *mI* co-occurs with a quantifier like *herkes* 'every', the surface position of *mI* with respect to that quantifier matters and affects the interpretation of the question. The interpretation of the different types of declaratives and interrogatives containing both negation and the universal quantifier are summarized again in the following table.

	Declaratives	[Q_F **mI**]	[XP_F **mI**]
Q precedes XP	$\neg > Q$ $^{\%}Q > \neg$	$Q > \neg$	$Q > \neg$
XP precedes Q	$\neg > Q$ $^{\%}Q > \neg$	$Q > \neg$	$\neg > Q$

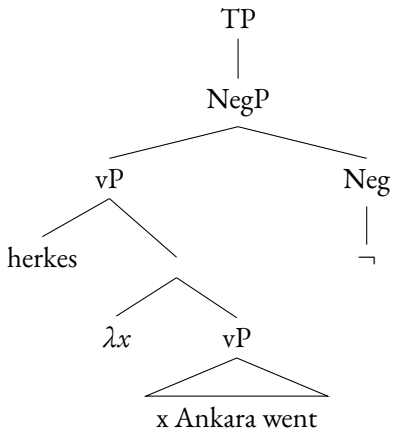
Figure 4.4: Co-occurrence with a scope-taking expression and negation

As indicated in the above table, when the universal quantifier *herkes* co-occurs with negation in a declarative, it must scope under negation for most speakers. The relevant example is given again in (61).

(61) **Herkes** Ankara-ya git-**mi**-yor.
everyone Ankara-DAT go-NEG-PRES.PROG.3S
'It is not the case that everybody is going to Ankara.' $\neg > \forall$
$^{\%}$'Nobody is going to Ankara.' $^{\%}\forall > \neg$

This suggests that for most speakers, the universal quantifier must reconstruct under negation at LF, as illustrated in (62-a). With this structure, we derive for the sentence in (61) the interpretation in (62-b).

(62) a.



b. $[\![(61)]\!] = \neg\forall x[human(x) \rightarrow went\text{-}to(a)(x)]$

To derive the interpretation of *mI*-questions involving both *herkes* and negation (schematized in the second and third column of the above table), I adopt Kratzer's (1991) implementation of Rooth's (1992) theory. In this system, the ordinary value of a (non-complex) constituent α is its usual denotation, which is derived by applying the interpretation function. For the secondary value, a designated assignment function h is invoked. The F feature of a focused expression carries an index which serves as a distinguished variable subject to interpretation by h. h maps the variable on α onto an object of the same semantic type as $[\![\alpha]\!]^g$.

(63) a. $[\![\alpha]\!]^g = [\![\alpha]\!]$ if α is assignment-independent, and $g(A)$ otherwise

$[\![\alpha]\!]^{g,h} = [\![\alpha]\!]^g$

b. $[\![\alpha_{Fi}]\!]^g = [\![\alpha]\!]^g$

$[\![\alpha_{Fi}]\!]^{g,h} = h(i)$

The secondary value of a complex constituent is then derived recursively by applying the usual semantic rules to its subconstituents. The rules of functional application and predicate abstraction are defined in this system as follows.

(64) *Functional application:*

If A is a branching node with daughters B of type $< \gamma, \tau >$ and C of type γ,

a. $[\![A]\!]^g = [\![B]\!]^g([\![C]\!]^g)$

b. $[\![A]\!]^{g,h} = [\![B]\!]^{g,h}([\![C]\!]^{g,h})$

(65) *Predicate abstraction:*

If A is a branching node with daughters B and a numerical index i,

a. $[\![A]\!]^g = \lambda x.[\![B]\!]^{g[x/i]}$

b. $[\![A]\!]^{g,h} = \lambda x.[\![B]\!]^{g[x/i],h}$

To illustrate how this system works, let us consider again the polar question in (66). The step-by-step composition of this question is given in (67).

(66) Oya **mı** ayrildi? [Turkish]
Oya PolQ leave.PAST
'Was it Oya who left?'

(67) a. $[_{CP}\,[_{\varphi}\,[_{TP}\,[\,\text{Oya}_{Fi}$ **mı** $]$ left $]\,{\sim_\Gamma}]\,C_{[+Q]}\,\Gamma\,]$

b. $[\![\,\text{Oya}_{Fi}$ **mı** $]\!]^g = o$

$[\![\,\text{Oya}_{Fi}$ **mı** $]\!]^{g,h} = h(i)$

c. $[\![\,\text{TP}\,]\!]^g = \lambda w.left_w(o)$

$[\![\,\text{TP}\,]\!]^{g,h} = \lambda w.left_w(h(i))$

d. If $\varphi = [\sim_\Gamma \gamma]$, then:

(i) $[\![\varphi]\!]^g = [\![\gamma]\!]^g$

Defined iff $g(\Gamma) \subseteq [\![\{\gamma]\!]^{g,h'} | h' \in H\} \wedge [\![\gamma]\!]^g \in g(\Gamma) \wedge \exists p[p \neq [\![\gamma]\!]^g \wedge p \in g(\Gamma)]$

(ii) $[\![\varphi]\!]^{g,h} = [\![\gamma]\!]^g$

e. $[\![\varphi]\!]^g = \lambda w : g(\Gamma) \subseteq \{\lambda w.left_w(h(i)) | h \in H\}.left_w(o)$

$[\![\varphi]\!]^{g,h} = \lambda w : g(\Gamma) \subseteq \{\lambda w.left_w(h(i))|h \in H\}.left_w(o)$

f. $[\![\ \mathrm{C}_{[+Q]}\ ]\!]^g = \lambda\Gamma.\lambda q.\lambda w : \exists\psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond q(w) \wedge \diamond\neg q(w)).\lambda p.p = q$

$[\![\ C_{[+Q]}\ ]\!]^{g,h} = [\![\ C_{[+Q]}\ ]\!]^g$

g. $[\![\ \mathrm{CP}\ ]\!]^g = \lambda w :$

$$\underline{\exists\psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond left_w(o) \wedge \diamond\neg left_w(o))}.$$

$$\lambda p.p = \lambda w.left_w(o)$$

with $g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w.left_w(Oya) \\ \lambda w.left_w(Ali) \\ \lambda w.left_w(Oya) \end{array} \right\}$

$[\![\ \mathrm{CP}\ ]\!]^{g,h} = [\![\ \mathrm{CP}\ ]\!]^g$

Now that I have illustrated the composition of a simple polar question within this system, I turn to the polar question in (68) in which *mI* combines with the universal quantifier *herkes*. This question has the underlying structure in (69-a). Combining the negative proposition in (69-b) with the *mI*-phrase in (69-c), and then with the ~-operator and the interrogative $\mathrm{C}_{[+Q]}$ head, we obtain the denotation in (69-e) for the polar question in (68), as expected.

(68) [**Herkes** **mi**] Ankara-ya git-**mi**-yor?
everyone Q Ankara-DAT go-NEG-PRES.PROG.3S
'Is everybody such that they are not going to Ankara?' $\forall > \neg$

(69) a. $[_{CP}\ [_{\varphi}\ [\ \text{everyone}_{Fi}\ \textbf{mi}\ ]\ [\ \lambda x\ [_{TP}\ \neg\ [_{vP}\ \text{x Ankara go}\ ]]]]\ \sim_{\Gamma}]\ C_{[+Q]}\ \Gamma\ ]$

b. $[\![\ \mathrm{TP}\ ]\!]^g = \lambda w.\neg is\text{-}going\text{-}to_w(a)(x)$

$[\![\ \mathrm{TP}\ ]\!]^{g,h} = \lambda w.\neg is\text{-}going\text{-}to_w(a)(x)$

c. $[\![\ \text{everyone}_{Fi}\ \textbf{mi}\ ]\!]^g = \lambda P.\lambda w.\forall x[human_w(x) \rightarrow P(x)]$

$[\![\ \text{everyone}_{Fi}\ \textbf{mi}\ ]\!]^{g,h} = h(i)$

d. $[\![\varphi]\!]^g = \lambda w : g(\Gamma) \subseteq \{h(i)(\lambda x.\neg is\text{-}going\text{-}to_w(a)(x))|h \in H\}.$

$$\forall x[human_w(x) \rightarrow \neg is\text{-}going\text{-}to_w(a)(x)]$$

$[\![\varphi]\!]^{g,h} = [\![\varphi]\!]^g$

e. $[\![\text{ CP }]\!]^g = \lambda w :$

$$\underline{\exists \psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond \forall x[human_w(x) \rightarrow \neg is\text{-}going\text{-}to_w(a)(x)] \wedge}$$

$$\underline{\diamond \neg \forall x[human_w(x) \rightarrow \neg is\text{-}going\text{-}to_w(a)(x)])}.$$

$$\lambda p.p = \lambda w. \forall x[human_w(x) \rightarrow \neg is\text{-}going\text{-}to_w(a)(x)]$$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w. \forall x[human_w(x) \rightarrow \neg is\text{-}going\text{-}to_w(a)(x)] \\ \lambda w. \exists x[human_w(x) \rightarrow \neg is\text{-}going\text{-}to_w(a)(x)] \end{array} \right\}$$

$[\![\text{ CP }]\!]^{g,h} = [\![\text{ CP }]\!]^g$

When the *mI*-phrase precedes the universal quantifier on the surface, it takes wide scope over it at LF. In that case, the universal can reconstruct under negation just like in declaratives. We derive for the question the interpretation $\neg > \forall$, as shown in (71).

(70) [Ankara-ya **mi**] **herkes** git-**mi**-yor? $\neg > \forall$
Ankara-LOC PolQ everyone go-NEG-PRES.PROG.3S
'It it Ankara that not everyone is going to?'

(71) a. $[_{CP}\ [_{\psi}\ [\ \text{Ankara}_{Fi}\ \textbf{mi}\ ]\ [\ \lambda x\ [_{TP}\ \neg\ [_{vP}\ \text{everyone}\ [\ \lambda y\ [\ y\ x\ \text{go}\ ]]]]]]\ {\sim}_{\Gamma}]\ C_{[+Q]}\ \Gamma\ ]$

b. $[\![\text{ CP }]\!]^g = \lambda w :$

$$\underline{\exists \psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond \neg \forall x[human_w(x) \rightarrow is\text{-}going\text{-}to_w(a)(x)] \wedge}$$

$$\underline{\diamond \forall x[human_w(x) \rightarrow is\text{-}going\text{-}to_w(a)(x)])}.$$

$$\lambda p.p = \lambda w. \neg \forall x[human_w(x) \rightarrow is\text{-}going\text{-}to_w(a)(x)]$$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w. \neg \forall x[human_w(x) \rightarrow is\text{-}going\text{-}to_w(Ankara)(x)] \\ \lambda w. \neg \forall x[human_w(x) \rightarrow is\text{-}going\text{-}to_w(Izmir)(x)] \\ \lambda w. \neg \forall x[human_w(x) \rightarrow is\text{-}going\text{-}to_w(Istanbul)(x)] \end{array} \right\}$$

In contrast, when the *mI*-phrase follows the universal quantifier on the surface, it scopes under it at LF. In that case, the universal quantifier cannot reconstruct to its base position, as illustrated in the structure in (73-a). In that case, we derive for the question in (72) the interpretation $\forall > \neg$ given in (73-b).

(72) **Herkes** [Ankara-ya **mi**] git-**mi**-yor?
everyone Ankara-DAT Q go-NEG-PRES.PROG.3S
'Is it Ankara that no one is going to?' $\forall > \neg$

(73) a. $[_{CP}\ [_{\psi}\ [\ \text{everyone}\ [\ \lambda y\ [\ \text{Ankara}_{Fi}\ \textbf{mi}\ ]\ [\ \lambda x\ [_{TP}\ \neg\ [_{vP}\ y\ x\ \text{go}\ ]]]]]]\ {}_{\sim\Gamma}]\ C_{[+Q]}\ \Gamma\ ]$

b. $[\![\ \text{CP}\ ]\!]^g = \lambda w :$

$$\underline{\exists \psi \in g(\Gamma)[\psi(w) = 1] \wedge (\Diamond \forall x[human_w(x) \rightarrow \neg is\text{-}going\text{-}to_w(a)(x)] \wedge}$$
$$\underline{\Diamond \neg \forall x[human_w(x) \rightarrow \neg is\text{-}going\text{-}to_w(a)(x)]).}$$
$$\lambda p.p = \lambda w. \forall x[human_w(x) \rightarrow \neg is\text{-}going\text{-}to_w(a)(x)]$$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w. \forall x[human_w(x) \rightarrow \neg is\text{-}going\text{-}to_w(Ankara)(x)] \\ \lambda w. \forall x[human_w(x) \rightarrow \neg is\text{-}going\text{-}to_w(Izmir)(x)] \\ \lambda w. \forall x[human_w(x) \rightarrow \neg is\text{-}going\text{-}to_w(Istanbul)(x)] \end{array} \right\}$$

The fact that *mI* freezes the scope of the universal quantifier in (72) is not specific to this particle. This is a property that *mI* shares with other quantifier in the language. Example (74) illustrates the phenomenon of scope rigidity between two quantifiers in Turkish declaratives (data from Demirok 2019).

(74) a. **Bi** çocuk **her** elma-yı ye-di.
a child every apple-ACC eat-PST.3SG
'A child ate every apple.' ✓$\exists > \forall$; *$\forall > \exists$

b. **Her** elma-yı **bi** çocuk ye-di.
every apple-ACC a child eat-PST.3SG
'Every apple was eaten by a different child.' *$\exists > \forall$; ✓$\forall > \exists$

PolQs cannot participate in the formation of wh-questions

The previous section shows that PolQs like *mI* can interact with other logical operators. One may thus expect them to be able to interact with *wh*-words as well. However, as discussed in Chapter 2, PolQs are restricted to polar and alternative questions. They cannot participate in the formation of *wh*-questions, as illustrated again in (75).

(75) a. *Kim **mı** Dilara'yı öptü? [Turkish]
who PolQ Dilara-ACC kiss.PAST
(Int.) 'Who kissed Dilara?'

b. *Kim Dilara'yı **mı** öptü?
who Dilara-ACC PolQ kiss.PAST
(Int.) 'Who kissed Dilara?'

The intuition here is that there exists a competition between what the *wh*-word and the *mI*-phrase contribute in a question. In particular, both contribute a set of alternatives. In a question like (75-a), these sets of alternatives are redundant, whereas in a question like (75-b), they are incompatible.

However, deriving the incompatibility of these two interrogative elements is not an easy task. The main reason is that in standard analyses of *wh*-questions, the *wh*-word is interpreted as an indefinite and overtly or covertly moves to be interpreted above the interrogative $C_{[+Q]}$ head. In contrast, I have shown in this chapter that PolQ *mI* is interpreted below $C_{[+Q]}$. Thus, these two elements cannot easily combine with each other in a question like (75-a). In the literature, we find analyses of *wh*-questions according to which *wh*-words are interpreted within the proposition out of which the question is formed. Versions of such analyses have been proposed by Beck (2006), Kotek (2014), Mayr (2014), among others. For instance, Beck (2006) defines the Q(uestion)-operator in *wh*-questions as in (76-c). This operator states that the denotation of the question is equivalent to the set derived from the secondary value of *who left* where one quantifies over designated assign-

ments h.

(76) a. Who left?

b. [Q_1 [who_1 left]]

c. If X = [Q_i Y] then $[\![\text{X}]\!]^g = \lambda p.\exists x[p = [\![Y]\!]^{g,h[x/i]}]$

Clearly, this question operator is incompatible with polar questions, and more specifically with PolQs-questions. As a result, one cannot adopt analyses of *wh*-in-situ questions to derive the incompatibility of the *wh*-word and PolQs in questions like (75).

Another possible line of inquiry could be the following. The difference between the interrogative $C_{[+Q]}$ head found in *wh*-questions and in PolQs-questions is that the former selects a TP and denotes a total function, as in (77-a), whereas the latter selects a FocP and denotes a partial function, as in (77-b). In that case, we could maintain a standard analysis of *wh*-questions according to which *wh*-words are interpreted above the interrogative $C_{[+Q]}$,

(77) a. *Wh*-questions:

$[\![\text{C}_{[+Q]}]\!]^g = \lambda q.\lambda w.\lambda p.p = q$

b. PolQs-questions:

$[\![\text{C}_{[+Q]}]\!]^g = \lambda\Gamma.\lambda q.\lambda w : \exists \psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond q(w) \wedge \diamond \neg q(w)).\lambda p.p = q$

If one assume that the existential presupposition of *wh*-questions is contributed by the *wh*-words (Chierchia and Liao 2012), the incompatibility of the *wh*-words and *mI* in questions like (75) could come from a redundancy of the existential presupposition (75-a) or an incompatibility of these existential presuppositions (75-b). The details of the implementation of such potential analysis are left for future research. More generally, data like (89) raise important questions regarding what varies across languages and across different types of questions. For instance, does the interrogative $C_{[+Q]}$ head varies across different types of questions ? Do interrogative elements vary in the way

they combine with the interrogative $C_{[+Q]}$ head in a question?

4.6 Prediction: Intervention effects

In *wh*-in-situ languages, when some logical operator like the focus particle *only* precedes the *wh*-word, the resulting *wh*-question is ill-formed (Beck 2006, Mayr 2014, a.o.). This is illustrated in (78-a) for Korean. When the *wh*-word moves accross the focus particle, the question becomes fully acceptable, as illustrated in (78-b).

(78) a. *Minsu-man nuku-lûl po-ss-ni? [Korean]
Minsu-only who-ACC see-PAST-Q
'Who did only Minsu see?'

b. Nuku-lûl Minsu-man po-ass-ni?
who-ACC Minsu-only see-PAST-Q
'Who did only Minsu see?' (Beck, 2006)

The focus particle *only* is not the only operator which causes intervention effects. Other focus particles like *even* and *also*, and other logical operators like *every*, *no*, *few*, are also known to trigger intervention effects. In addition, intervention effects are also observed in languages with *wh*-movement. In these languages, multiple *wh*-questions become ill-formed if one of the *wh*-words follows the intervening operator, as illustrated in (79).

(79) a. Wen hat der Hans wo gesehen? [German]
whom has the Hans where seen
'Who did Hans see where?'

b. *Wen hat niemand wo gesehen?
whom has nobody where seen
'Who did nobody see where?' (Beck, 1996)

To my knowledge, intervention effects have only been discussed for *wh*-questions. In this section, I show that polar questions involving PolQ *mI* show similar intervention effects. Specifically, the

mI-phrase cannot be preceded by a focus particle, except when they associate with the same expression. This is illustrated in examples (80) and (81) for the focus particles *sadece* 'only' and *bile* 'even' respectively.

(80) Q = *sadece* ('only')

a. [**Sadece** Oya **mı**] dün yemek yap-tı?
only Oya PolQ yesterday dinner make-PAST
'Was it only Oya who made dinner yesterday?'

b. *__Sadece__ Oya [dün **mü**] yemek yap-tı?
only Oya yesterday PolQ dinner make-PAST

c. *__Sadece__ Oya dün [yemek **mi**] yap-tı?
only Oya yesterday dinner PolQ make-PAST

d. *__Sadece__ Oya dün yemek yap-tı **mı**?
only Oya yesterday dinner make-PAST PolQ

(81) Q = *bile* ('even')

a. [Oya **bile** **mı**] dün yemek yap-tı?
Oya even PolQ yesterday dinner make-PAST
'Was it even Oya who made dinner yesterday?'

b. *Oya **bile** [dün **mü**] yemek yap-tı?
Oya even yesterday PolQ dinner make-PAST

c. *Oya **bile** dün [yemek **mi**] yap-tı?
Oya even yesterday dinner PolQ make-PAST

d. *Oya **bile** dün yemek yap-tı **mı**?
Oya even yesterday dinner make-PAST PolQ

As is the case in *wh*-questions, when *mI*-phrases are scrambled across the focus particles, the questions become fully acceptable. This is illustrated in examples (82) and (83) for *sadece* 'only' and *bile* 'even' respectively.

(82) Q = *sadece* ('only')

a. [Dün mü] **sadece** Oya yemek yap-tı?
yesterday PolQ only Oya dinner make-PAST
'Was it yesterday that only Oya made dinner?'

b. Oya [dün mü] **sadece** yemek yap-tı?
Oya yesterday PolQ only dinner make-PAST
'Was it yesterday that Oya made only dinner?'

(83) Q = *bile* ('even')

a. [Dün mü] Oya **bile** yemek yap-tı?
yesterday PolQ Oya even dinner make-PAST
'Was it yesterday that even Oya made dinner?'

b. Oya [dün mü] yemek **bile** yap-tı?
Oya yesterday PolQ dinner even make-PAST
'Was it yesterday that Oya made even dinner?'

In what follows, I show how my analysis of PolQs-questions captures these intervention effects. To begin with, let us consider again the ill-formed polar question in (84). The step-by-step composition of this question is given in (85). The ~-operator which comes with the focus particle *only* evaluates all the F-marked expressions in its scope and neutralizes their contribution by resetting the focus semantic value to the ordinary semantics value, as illustrated in (87-c). The set of focus alternatives thus becomes a singleton-set. As a result, when the ~-operator which comes with the interrogative $C_{[+Q]}$ head combines with its complement, the presupposition of this operator is not satisfied and the question is undefined.

(84) *__Sadece__ Oya [dün mü] yemek yap-tı?
only Oya yesterday PolQ dinner make-PAST

(85) a. $[_{CP}\,[_{\psi}\,[_{\chi}$ only $\Delta\,[_{\zeta}\,[_{TP}$ Oya$_{Fj}$ [yesterday$_{Fi}$ mü] dinner made] ~$_{\Delta}$]] ~$_{\Gamma}$] $C_{[+Q]}$ Γ]

b. $[\![\,\text{TP}\,]\!]^{g} = \lambda w.yesterday(made\text{-}dinner_{w}(o))$

$[\![\,\text{TP}\,]\!]^{g,h} = \lambda w.h(i)(made\text{-}dinner_{w}(h(j)))$

c. If $\varphi = [\sim_{\Gamma}\,\gamma]$, then:

(i) $[\![\varphi]\!]^g = [\![\gamma]\!]^g$

Defined iff $g(\Gamma) \subseteq [\![\{\gamma]\!]^{g,h'} | h' \in H\} \wedge [\![\gamma]\!]^g \in g(\Gamma) \wedge \exists p[p \neq [\![\gamma]\!]^g \wedge p \in g(\Gamma)]$

(ii) $[\![\varphi]\!]^{g,h} = [\![\gamma]\!]^g$

d. $[\![\zeta]\!]^g = \lambda w : g(\Delta) \subseteq \{\lambda w.h(i)(\textit{made-dinner}_w(h(j))) | h \in H\}.$

$\textit{yesterday}(\textit{made-dinner}_w(o))$

$[\![\zeta]\!]^{g,h} = [\![\zeta]\!]^g$

e. $[\![\chi]\!]^g = \lambda w : g(\Delta) \subseteq \{\lambda w.h(i)(\textit{made-dinner}_w(h(j))) | h \in H\}.$

$\forall q \in g(\Delta)[q \rightarrow \text{yesterday}(\text{made}-\text{dinner}_w(o)) \subseteq q)]$

$[\![\chi]\!]^{g,h} = [\![\chi]\!]^g$

f. $[\![\psi]\!]^g = \#$

In contrast, when the *mI*-phrase precedes the focus particle, as in (86), the derivation proceeds as expected, as illustrated in (87).

(86) [Dün **mü**] **sadece** Oya yemek yap-tı?
yesterday PolQ only Oya dinner make-PAST
'Was it yesterday that only Oya made dinner?'

(87) a. $[_{CP}\,[_{\psi}\,[_{\gamma}\,[\text{yesterday}_{Fi}$ **mü**$]\,[\,\lambda Q\,[_{\chi}\,\text{only}\,\Delta\,[_{\zeta}\,[_{TP}\,\text{Oya}_{Fj}\,Q\,\text{dinner made}\,]\,\sim_{\Delta}]]]]\,\sim_{\Gamma}]$

$C_{[+Q]}\,\Gamma\,]$

b. $[\![\,\text{TP}\,]\!]^g = \lambda w.\textit{yesterday}(\textit{made-dinner}_w(o))$

$[\![\,\text{TP}\,]\!]^{g,h} = \lambda w.Q(\textit{made-dinner}_w(h(j)))$

c. $[\![\zeta]\!]^g = \lambda w : g(\Delta) \subseteq \{\lambda w.Q(\textit{made-dinner}_w(h(j))) | h \in H\}.$

$Q(\textit{made-dinner}_w(o))$

$[\![\zeta]\!]^{g,h} = [\![\zeta]\!]^g$

d. $[\![\chi]\!]^g = \lambda w : g(\Delta) \subseteq \{\lambda w.Q(\textit{made-dinner}_w(h(j))) | h \in H\}.$

$\forall q \in g(\Delta)[q \rightarrow \text{Q}(\text{made}-\text{dinner}_w(o)) \subseteq q)]$

$[\![\chi]\!]^{g,h} = [\![\chi]\!]^{g}$

e. $[\![\gamma]\!]^{g} = \lambda w.\forall q \in g(\Delta)[q \rightarrow \textit{yesterday}(\textit{made-dinner}_w(o)) \subseteq q)]$

$[\![\gamma]\!]^{g,h} = \lambda w.\forall q \in g(\Delta)[q \rightarrow h(i)(\textit{made-dinner}_w(o)) \subseteq q)]$

f. $[\![\psi]\!]^{g} = \lambda w : g(\Gamma) \subseteq \{\forall q \in g(\Delta)[q \rightarrow h(i)(\textit{made-dinner}_w(o)) \subseteq q)] | h \in H\}.$

$\forall q \in g(\Delta)[q \rightarrow \textit{yesterday}(\textit{made-dinner}_w(o)) \subseteq q)]$

$[\![\psi]\!]^{g,h} = [\![\psi]\!]^{g}$

g. $[\![\text{ CP }]\!]^{g} = \lambda w :$

$\underline{\exists \psi \in g(\Gamma)[\psi(w) = 1] \wedge (\diamond \forall q \in g(\Delta)[q \rightarrow \textit{yesterday}(\textit{made-}}\underline{\textit{dinner}_w(o)) \subseteq q)] \wedge$

$\underline{\diamond \neg \forall q \in g(\Delta)[q \rightarrow \textit{yesterday}(\textit{made-}}\underline{\textit{dinner}_w(o)) \subseteq q)]}.$

$\lambda p.p = \lambda w.\forall q \in g(\Delta)[q \rightarrow \textit{yesterday}(\textit{made-dinner}_w(o)) \subseteq q)]$

$$\text{with } g(\Gamma) \subseteq \left\{ \begin{array}{l} \lambda w.\forall q \in g(\Delta)[q \rightarrow \textit{yesterday}(\textit{made-dinner}_w(o)) \subseteq q)] \\ \lambda w.\forall q \in g(\Delta)[q \rightarrow \textit{today}(\textit{make-dinner}_w(o)) \subseteq q)] \\ \lambda w.\forall q \in g(\Delta)[q \rightarrow \textit{tomorrow}(\textit{make-dinner}_w(o)) \subseteq q)] \end{array} \right\}$$

This account predicts that only focus particles can cause intervention effects when they occur between the interrogative $C_{[+Q]}$ head and the *mI*-phrase. Example (88) shows that this prediction is borne out. When the quantifiers *herkes* 'every' and *az* 'few' occur between $C_{[+Q]}$ and the *mI*-phrase, the resulting questions are well-formed. As previsouly mentioned, this contrasts with what has been claimed for *wh*-questions.

(88) a. **Herkes** [Ankara-ya **mi**] git-**mi**-yor?
everyone Ankara-DAT Q go-NEG-PRES.PROG.3S
'Is it Ankara that no one is going to?'

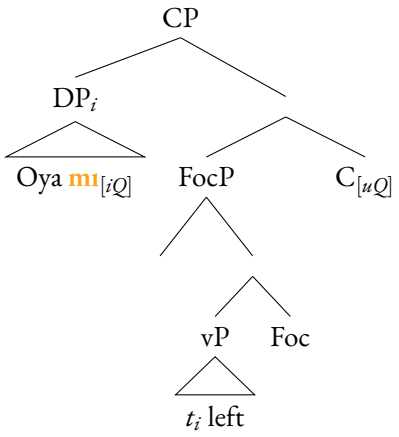
b. Az öğrenci [dün **mü**] Ankara-ya gitti?
few students yesterday PolQ Ankara-DAT go.PAST
'Is it yesterday that few students went to Ankara?'

4.7 Alternative analyses

In this chapter, I have claimed that PolQs are interpreted below the interrogative $C_{[+Q]}$ head. Alternative analyses are (i) that PolQs are interpreted in $C_{[+Q]}$ and (ii) that PolQs are interpreted below $C_{[+Q]}$. The first option has been excluded in Chapter 2. Recall that if PolQs were the spell-out of $C_{[+Q]}$, they should participate in the formation of all types of questions (including *wh*-questions), contrary to fact. I now turn to the second option, namely that PolQs-phrases are interpreted above $C_{[+Q]}$. On such an analysis, the polar question in (89-a) could have the structure in (89-b). In particular, PolQ *mI* would carry an interrogative feature [iQ] which would agree with the uninterpretable feature [uQ] carried by the interrogative $C_{[uQ]}$ head. This would trigger a movement of the *mI*-phrase to Spec,CP.

(89) a. Oya **mı** ayrildi? [Turkish]
Oya PolQ leave.PAST
'Was it Oya who left?'

b.



However, the analysis just sketched above cannot capture the intervention effects discussed in the previous section. In particular, the two sentences in (90-a) and (91-a) would have the same underlying structure. A simplified version of these underlying structures is given in (90-b) and (91-b) respectively.

(90) a. *__Sadece__ Oya [dün mü] yemek yap-tı?
only Oya yesterday PolQ dinner make-PAST
b. [$_{CP}$ [yesterday$_{F}$ mü$_{[iQ]}$] [λP [only [$_{TP}$ Oya$_{F}$ P dinner made]]]C$_{[uQ]}$]

(91) a. [Dün mü] [__sadece__ Oya] yemek yap-tı?
yesterday PolQ only Oya dinner make-PAST
'Was it yesterday that only Oya made dinner?'
b. [$_{CP}$ [yesterday$_{F}$ mü$_{[iQ]}$] [λP [only [$_{TP}$ Oya$_{F}$ P dinner made]]]C$_{[uQ]}$]

As far as I can tell, the only way one can capture the ungrammaticality of (90) under such an analysis is to assume that *only* can check the interrogative feature on *mI*. When this happens, the *mI*-phrase can no longer move to Spec,CP. In that case, *only* would intervene between the interrogative C$_{[+Q]}$ head and *mI* and the composition will clash, as illustrated in the previous section. However, the assumption – which, to my knowledge, has not been made in the literature – does not seem reasonable. Thus, I take these data to show that PolQs, and in particular Turkish *mI*, cannot be interpreted above the interrogative C$_{[+Q]}$ head.

4.8 Summary

In this chapter, I have provided a multi-dimensional analysis of PolQs-questions, which offers a compositional way to (i) combine their focus alternatives with the interrogative C$_{[+Q]}$ head and (ii) derive their presuppositions. Specifically, I have proposed that PolQs are focus markers which are interpreted within the proposition out of which a question is formed. They carry an interrogative feature which must agree with the interrogative C$_{[+Q]}$ head. The focus alternatives triggered by the constituent they combine with project all the way up to C$_{[+Q]}$. In Finnish and Turkish, C$_{[+Q]}$ is a focus operator which triggers two presuppositions: an existential and an ignorance presupposition. In addition to capturing most of the characteristic properties of PolQs and PolQs-questions, the proposed account addresses important theoretical questions concerning the interaction between

different sets of alternatives (in this case, question and focus alternatives) and presuppositions projection in questions. Open questions concern the interaction between *wh*-words and PolQs which will be further discussed in the next chapter, and the 'spill-over' effect we observe with propositional presuppositions but not with question-specific presuppositions.

5

Conclusion and outlook

5.1 Global summary and conclusions

The main goal of this dissertation was to offer the first semantic analysis of PolQs which captures their characteristic properties summarized below.

	Mandatory?	Polar Q? Alternative Q?	*Wh*-Q?	Embedded Q?	Q only?	Focus sensitive?
Finnish	yes	yes	no	yes	yes	yes
Turkish	yes	yes	no	yes	yes	yes

Figure 5.1: Signature properties of PolQs

Based on novel data I collected in Finnish and Turkish, I started out in chapter 2 by arguing that we need to draw a distinction between three types of interrogative particles across languages: (i) particles like Japanese *ka* which can occur in both declaratives and interrogatives, (ii) particles like Hindi-Urdu *kyaa* which are optional and are restricted to polar and alternative questions, and (iii) PolQs which are restricted to polar and alternative questions and are mandatory in both matrix and embedded questions. I have further shown that none of the previous proposals of PolQs and PolQs-questions can capture all of their characteristic properties. In addition, I have considered two additional potential analyses of PolQs, namely, (i) that PolQs are the spell-out of the interrogative $C_{[+Q]}$ head, and (ii) that PolQs-questions are the equivalent of interrogatives involving a clefted constituent, and have argued that none of them are tenable.

Because one characteristic property of PolQs-questions is that they come with an existential presupposition, Chapter 3 focused on presuppositions that can be observed in questions. I have argued that two types of presuppositions must be distinguished in questions: (i) propositional presuppositions, which can also be found in declaratives, and (ii) question-specific presuppositions, which are restricted to questions. Question-specific presuppositions include existential presuppositions we find for instance in *wh*-questions and ignorance presuppositions which require that all possible answers of a question can be true for the speaker. Based on a new diagnostic I provide to distinguish propositional presuppositions from question-specific presuppositions, I have further shown in this

chapter that presuppositions that come with PolQs-questions are instances of question-specific presuppositions.

In Chapter 4, I turned to the analysis of PolQs and PolQs-questions. I have provided a multidimensional analysis of these questions which derive both their presuppositions and their question meaning. Specifically, I have claimed that PolQs are focus markers which are interpreted within the proposition out of which a question is formed. These particles carry an interrogative feature which must agree with an interrogative $C_{[+Q]}$ head. The focus alternatives triggered by the constituent they combine with project all the way up to the interrogative $C_{[+Q]}$ head. $C_{[+Q]}$ is a focus operator which triggers the presuppositions one find in PolQ-questions. I have further shown how the proposed account of PolQs and PolQs-questions captures the characteristic properties of these particles. One characteristic property of PolQs that is not straightforwardly accounted for concerns their inability to participate in the formation of *wh*-questions. As I will discuss in the next section, PolQs are not always incompatible with *wh*-words. Their interaction is more complex and interesting that what has been presented in this dissertation.

5.2 Direction for future research

5.2.1 Interrogative particles cross-linguistically

In this dissertation, I have focused on PolQs, and in particular on Finnish *-kO* and Turkish *mI*. It is likely that we find further PolQs across languages. To determine whether a language has such a particle, one should check whether the relevant particle shares the same characteristic properties as Finnish *-kO* and Turkish *mI*. These properties are summarized again in the following table.

	Mandatory?	Polar Q? Alternative Q?	*Wh*-Q?	Embedded Q?	Q only?	Focus sensitive?
Japanese	no	yes	yes	yes	no	no
Hindi-Urdu	no	yes	no	sometimes	yes	yes
Finnish	yes	yes	no	yes	yes	yes
Turkish	yes	yes	no	yes	yes	yes

Figure 5.2: Characteristic uses of the three types of interrogative particles

One goal for future research is to capture the crosslinguistic variation between the different types of interrogative particles. Specifically, a theory of interrogative particles should capture the variation between languages like Japanese, languages like Hindi-Urdu, and languages like Finnish and Turkish. While particles like Japanese *ka* may be quite different from other types of interrogative particles since they are not restricted to interrogatives, the above table shows that particles like Hindi-Urdu *kyaa* share some core properties with PolQs. Future research will determine what the parameters that vary across these two types of languages are.

5.2.2 PolQs in *wh*-questions

Even though PolQs cannot participate in the formation of *wh*-questions, they can occur in *wh*-questions in both Finnish and Turkish, as illustrated in (1) and (2) respectively.

(1) a. Mitä Pekka osti? [Finnish]
what Pekka bought
'What did Pekka buy?'

b. Mitä- kö Pekka osti? No koiran tietenkin.
what-Q Pekka bought well dog of.course
'Are you asking what Pekka bought? Well, a dog of course.'

(2) a. Kim *Sessizev*-i aldı? [Turkish]
who *Sessizev*-ACC bought
'Who bought *Sessizev*?'

b. Kim **mi** *Sessizev*-i aldı? Tabiki de Can aldi.
who PolQ *Sessizev*-ACC bought of.course FOC Can bought
'Are you asking who bought *Sessizev*? Of course, Can bought it.'

The interpretation of these questions differs from the interpretation of a regular *wh*-question. One may wonder whether they are the equivalent of echo questions like (3).

(3) a. Zoe bought a dog.

b. Zoe bought WHAT?

In what follows, I show that these questions differ from echo questions. To begin with, echo questions in Finnish and Turkish are formed by stressing the *wh*-word, just like in English. They do not involve any PolQs, unlike the questions in (1) and (2).

(4) a. Oya *Sessizev*-i aldı. [Turkish]
Oya *Sessizev*-ACC buy.PAST
'Oya bought *Sessizev*.'

b. Oya NEYI aldi?
Oya what buy.PAST
'Oya bought WHAT?'

(5) a. Pekka osti koiran. [Finnish]
Pekka buy.PAST dog
'Pekka bought a dog.'

b. Pekka osti MITÄ?
Pekka buy.PAST what
'Pekka bought WHAT?'

In contrast to echo questions which can follow a declarative for instance, the antecedent of PolQs-questions involving *wh*-words must be a *wh*-question.

(6) a. *Out of the blue:* [Turkish]

b. #Kim **mi** *Sessizev*-i aldı?
who PolQ *Sessizev*-ACC bought

(7) a. Oya *Sessizev*-i aldı.
Oya *Sessizev*-ACC bought
'Oya bought *Sessizev*.'

b. #Kim **mi** *Sessizev*-i aldı?
who PolQ *Sessizev*-ACC bought

(8) a. Oya mı *Sessizev*-i aldı?
Oya PolQ *Sessizev*-ACC bought
'Is it Oya who bought *Sessizev*?'

b. #Kim **mi** *Sessizev*-i aldı?
who PolQ *Sessizev*-ACC bought

(9) a. Kim *Sessizev*-i aldı?
who *Sessizev*-ACC bought
'Who bought *Sessizev?*

b. Kim **mi** *Sessizev*-i aldı?
who PolQ *Sessizev*-ACC bought

(10) a. *Out of the blue:* [Finnish]

b. #Mitä-**kö** Pekka osti?
what-PolQ Pekka bought

(11) a. Pekka osti koiran.
Pekka bought dog
'Pekka bought a dog.'

b. #Mitä-**kö** Pekka osti?
what-PolQ Pekka bought

(12) a. Koiran-ko Pekka osti?
dog-PolQ Pekka bought
'Is it a dog that Pekka bought?'

b. #Mitä-kö Pekka osti?
what-PolQ Pekka bought

(13) a. Mitä Pekka osti?
what Pekka bought
'What did Pekka buy?'

b. Mitä-kö Pekka osti?
what-PolQ Pekka bought

Another difference between echo questions and PolQs-questions involving *wh*-words is that while in the former the *wh*-word remains in situ, in Finnish PolQs-questions *wh-ko* cannot remain in situ, as shown below

(14) a. Mitä Pekka osti? [Finnish]
what Pekka buy.PAST
'What did Pekka buy?'

b. *Pekka osti mitä-kö?
Pekka bought what-PolQ

All these examples show that PolQs-*wh* questions are not instances of echo questions. An hypothesis that I am going to explore in future research is that PolQs-*wh* questions are polar questions in which PolQs do not take a propositional complement as in PolQs-questions but take a *wh*-question as their argument. These questions involving both PolQs and *wh*-words raise core questions concerning the interaction between interrogative elements we find in *wh*-questions and interrogative elements we find in polar questions, and may allow us to bring together the literature on these two types of questions which often do not communicate with each other.

5.2.3 NPI licensing in PolQs-questions

A core issue in the study of polar questions concerns the interaction between the various meaning dimensions. This dissertation investigated in detail the interaction between the ordinary dimension and the focus dimension. Additional expressions that are known to introduce alternatives in an

alternative meaning dimension are negative polarity items (NPIs). To further address this issue, I plan in future research to study the licensing of NPIs in PolQs-questions. As shown by Kamali (2011), Turkish NPIs like *hiç* 'ever' can only be licensed in a polar question when *mI* occurs in final position.

(15) a. Ali **hiç** iskambil oyna-r **mi**? [Turkish]
Ali never card play-AOR PolQ
'Does Ali ever play cards?'

b. *Ali **mi** **hiç** iskambil oynar?
Ali PolQ ever card play-AOR

c. *Ali **hiç** **mi** iskambil oynar?
Ali ever PolQ card play-AOR

d. *Ali **hiç** iskambil **mi** oynar?
Ali ever card PolQ play-AOR

As for Finnish, NPIs like *koskaan* are only licensed when PolQ *-kO* attaches to the predicate.

(16) a. On-**ko** Zoe **koskaan** käynyt Oulussa? [Finnish]
is-PolQ Zoe ever visited Oulu.INE
'Has Zoe ever been to Oulu?'

b. *Zoe-**ko** on **koskaan** käynyt Oulussa?
Zoe-PolQ is ever visited Oulu.INE

c. ***Koskaan**-**ko** Zoe on käynyt Oulussa?
ever-PolQ Zoe is visited Oulu.INE

d. *Oulussa-**ko** Zoe on **koskaan** käynyt?
Oulu.INE-PolQ Zoe is ever visited

The analysis of PolQs-questions presented in this dissertion should be extended to capture these facts. Note however that in order to achieve this goal, one first needs to propose an alternative-based analysis of NPIs licensing in polar questions (which do not involve PolQs) – analysis which, to my knowledge, does not exist yet.

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