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When is *or not* required in an embedded polar question?

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Abstract. Polar question embedding has diverse morphosyntactic expressions across languages; one strategy that comes up frequently is the insertion of a disjunctive particle 'or not.' For languages that use this disjunctive particle, a striking pattern emerges: those which have an interrogative complementizer and/or clause-typing marker in their embedded polar questions may optionally leave out 'or not,' whereas those which lack them require 'or not' across all syntactic embedding environments. Adopting a Hamblin-Karttunen approach to the semantics of questions, these patterns can be explained from the requirement that embedded polar interrogatives denote non-singleton propositional sets consisting of a positive and negative alternative. Where 'or not' is optional, an alternative strategy is available to coerce this bipolar question meaning, subject to language-specific locality constraints.

Keywords. polar questions; interrogatives; embedded questions; disjunction; clause-typing; question semantics; coercion; linguistic typology

1. Introduction. Across spoken and signed languages, there are many different ways to express whether polar questions (POLQs) are morphosyntactically embedded within another clause:

- interrogative complementizers (*Romance*, *English*, *Germanic*);
- sentence-final particles / clause-typing markers (*Japanese*, *Hungarian*);
- focus marking, usually on the verbal predicate (*Turkish*, *Russian*);
- overt pronominal referring to the embedded subject (*American Sign Language*);[1]
- disjunctive particle with negative polar alternative, e.g., English 'or not' (*Hindi-Urdu*)

The above list is intended to highlight the variation that exists among languages; it is neither exhaustive, nor are the options mutually exclusive—indeed, several languages may employ more than one of these strategies for POLQ embedding.

This paper will primarily focus on the last strategy; in particular, for languages that have a disjunctive particle semantically akin to 'or not,' a negative correlation is observed between the presence of an interrogative complementizer and/or clause-typing marker as an available POLQ embedding strategy and whether this disjunctive particle surfaces in certain embedding contexts. Before proceeding, let me first clarify the three different kinds of embedding environments that will play a role in this preliminary study on linguistic typology:

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[1] See Davidson & Caponigro (2016) for further discussion of this POLQ formation strategy in ASL. Besides an overt pronominal, it is possible to embed POLQs by means of a null interrogative complementizer or, for some signers, an "English-like" overt complementizer IF. To render the positive and negative alternatives explicit, yet another possible embedding strategy is matrix disjunction, approximated as 'yes or no' (Elena Koudilobrova, p.c.).

(a) **Complements:** directly selected by embedding verb, occurring in object position;

(b) **Adjuncts:** antecedent of an *alternative unconditional* (Rawlins 2013);

(c) **Subjects:** selected by head of higher verbal projection, occurring in subject position

Examples for each of these embedding environments from English are provided in (1). One common feature of the polar questions—indicated in square brackets—is that, semantically, they denote a (non-singleton) set of propositions consisting of a positive and negative alternative.

(1) a. I wonder **[** whether she will leave early **(or not)].** *Complement*

b. **[** Whether she will leave early ***(or not)],** I will leave early. *Adjunct*

c. **[** Whether she will leave early **(or not)]** will depend on her mood. *Subject*

When languages do have a disjunctive particle 'or not' or some non-periphrastic disjunction strategy for POLQ embedding, here is the generalization that emerges:

- No interrogative complementizer / clause-typing marker → 'or not' is required in all (a)-(c)
- Interrogative complementizer / clause-typing marker → 'or not' optional (a) or required (b)

I will refer to the languages for which there is no interrogative clause-typing (cf. Cheng 1991) and 'or not' is required in all embedding environments as **Type I languages**, and those where interrogative clause-typing may be established in embedded POLQs and the obligatory presence of the disjunctive particle varies by embedding context as **Type II languages**.

The paper is structured as follows. Section 2 provides examples and further discussion of Type I languages, namely Hindi-Urdu and Mandarin Chinese, while Section 3 examines some canonical Type II languages—Italian, Japanese, and Hungarian. Section 4 addresses one non-canonical Type II language, Georgian. A formal analysis of the pattern that distinguishes Type I from Type II languages is proposed in Section 5, building on the Hamblin-Karttunen approach to question semantics. In particular, it is argued that *anti-singleton coercion* (Biezma & Rawlins 2012) plays a central role to deriving the optionality of disjunctive particles, but may be subject to language-specific locality constraints. Section 6 expounds on Turkish, which falls outside of the dichotomy due to lacking a disjunctive particle, yet may still offer valuable insights into the nature of disjunction and polar question embedding. Finally, Section 7 concludes.

2. Examples of Type I languages. The two languages that we will consider are *Hindi-Urdu* (Indo-Aryan) and *Mandarin Chinese* (Sino-Tibetan). In subordination contexts, they both require 'or not' without exception; it should be noted, however, that both languages have other ways of forming polar questions in root contexts. These language-specific properties will be discussed.

2.1. HINDI-URDU. Hindi-Urdu has a disjunctive particle *ya: nahĩ:* 'or not,' which is required to be present in subordinated POLQs regardless of their embedding environment (2). Given it has no interrogative complementizer or clause-typing marker, it obeys the pattern for a Type I language.

A few words are worth mentioning here: Hindi-Urdu has a subordinator *ki*, which introduces embedded clauses as complements of verbal predicates (or prepositions) as in (2a). However, this complementizer is used for both declarative *and* interrogative embedding (Dayal 2025); in

other words, *ki* serves to indicate whether the following clause has been subordinated, but plays no role in clause-typing. Thus, it is unlike English, which requires 'whether' to be in all POLQ-embedding environments to establish interrogative clause-typing (1); *ki* passes this burden to the disjunctive particle *ya: nahĩ:* 'or not.' In the absence of interrogative clause-typing, Hindi-Urdu uses complementizers besides *ki* in POLQ-embedding contexts outside of complementation: *agar* 'if' for adjuncts (2b)—which introduces conditional antecedents—and a null for subjects (2c).

(2) *Hindi-Urdu*

a. ravi ja:nta: hai **[** (ki) anu ja:egi: ***(ya: nahĩ:)].**
Ravi knows SUB Anu will.go **or not**
'Ravi knows whether Anu will go or not.' (Dayal 2025: 665)

b. **[** agar sika ja:egi: ***(ya: nahĩ:)],** anu to ja:egi:
if Sika will.go **or not** Anu FOC will.go
'Whether or not Sika will go, Anu will go.'

c. **[** vo ja:egi: ***(ya: nahĩ:)]** uske mu:D par nirbhar karta: hai.
she will.go **or not** her mood on depend does
'Whether she will go or not depends on her mood.'

Root polar questions have a different profile in Hindi-Urdu: while the disjunctive particle *ya: nahĩ:* 'or not' is required in embedded POLQs without exception, interrogative clause-typing is established in matrix POLQs instead by *rising intonation*. No syntactic distinction between declarative clauses and root POLQs exists aside from matrix intonation. Furthermore, not only does *ya: nahĩ:* 'or not' become optional in the latter, but the polar question particle *kya:* is also optional, which simply cannot appear in subordinated POLQs (Bhatt & Dayal 2020; Dayal 2025). Note that intonation is also absent from subordinated POLQs.[2]

2.2. MANDARIN CHINESE. Mandarin Chinese does not have a disjunctive particle like 'or not' in its lexicon, but it does provide another means of POLQ formation via A-not-A reduplication; following Huang (1991) and others, I assume it is the morphological exponent of a reduplicative morpheme in the inflectional domain, e.g., a low polarity head that selects for VP and is licensed only in the scope of interrogative clauses.[3] This morpheme, *ceteris paribus*, may be interpreted as a disjunctive particle. (3) shows that A-not-A reduplication is obligatory in embedded POLQ contexts; given that Mandarin lacks an interrogative complementizer, it exhibits the Type I paradigm.

(3) *Mandarin Chinese*

a. wo xiang zhidao **[** ta **lai-bu-lai].**
I want know he **come-NEG-come**
'I want to know if he is coming or not.' (Liu 2010: 289)

[2] It is possible to have the polar question particle *kya:* occur in embedded contexts; in such cases, rising intonation must also occur on the embedded interrogative clause, and *ya: nahĩ:* 'or not' becomes optional. Following Dayal (2025), I consider these to be instances of *quasi-subordination*, rather than true subordination.

[3] The data and discussion in this section will henceforth refer specifically to the standard Mandarin dialect.

b. **[** {wulun/buguan} ni **qu-bu-qu],** wo dou yao qu.
no.matter you **go-NEG-go** I DOU want go
'No matter whether you go or not, I want to go.' (Lin 1996: 77)

c. **[** ta **hui-bu-hui** qu meiguo **]** qujue yu jingji qingkuang
he **FUT-NEG-FUT** go America depend on economic situation
'Whether he will go to America or not depends on his finances.'

Another asymmetry arises in relation to root POLQs: besides A-not-A reduplication, they also allow polar questions to be formed by the addition of sentence-final particles (*ma*, *bu*, *ba*, *ne*, etc.). These differ once more from the disjunctive "particle," however, in that they also carry discourse-related effects, e.g., the speaker must be interested in finding out the answer to the question—see Liu & Luo (2025) for a more detailed overview of Mandarin question markers. Moreover, unlike A-not-A POLQs, these sentence-final particles are generally not embeddable, but are restricted to root contexts (modulo *quasi-subordination*, see fn. 2).

Thus, we have seen that in both Hindi-Urdu and Mandarin Chinese, the only strategy for POLQ embedding across all syntactic environments is to use a disjunctive particle 'or not.' The unifying property of Type I languages is that they do not have a means to establish interrogative clause-typing independently in subordination contexts, and thus rely on disjunction to accomplish the task of deriving an embedded POLQ from its declarative prejacent.

3. Examples of Type II languages. We now consider three languages where interrogative clause-typing is possible inside embedded POLQs without requiring an overt disjunctive particle: *Italian* (Romance), *Japanese* (Japonic), and *Hungarian* (Uralic). As we will see, these languages display a similar pattern to English (1) with respect to when 'or not' is optional/obligatory.

3.1. ITALIAN. Italian has the disjunctive particle *o no* 'or not' and interrogative complementizer *se*. With both of the ingredients possessed by English, a parallel distribution with (1) is observed: *o no* 'or not' is optional with complements and subjects, but obligatory with adjuncts (4).

(4) *Italian*

a. giovanni vuole sapere **[** se julyanna andrà **(o no)].**
Giovanni wants know.INF Q Julyanna will.go **or not**
'Giovanni wants to know whether Julyanna will go (or not).'

b. **[** che/*se lei beva vino ***(o no)],** io lo berrò.
COMP she drinks wine **or not** I it will.drink
'Whether she drinks wine or not, I will drink it.'

c. **[** se berrà il vino **(o no)]** dipende da se lavora domani.
Q will.drink the wine **or not** depends to Q works tomorrow
'Whether she will drink wine (or not) depends on whether she is working tomorrow.'

There is one important difference between English and Italian, however: although the former uses 'whether' across-the-board for embedded POLQs, the latter does not allow the interrogative complementizer *se* with adjuncts—instead, the default complementizer *che* must be used (4b). It is precisely with adjuncts that *o no* 'or not' must also be obligatory.

Here is an explanation for why that might be: as Dayal (2025) notes, Italian bears similarities to Hindi-Urdu in that the difference between root POLQs and their declarative prejacents is rising intonation, in contrast to English root POLQs which additionally require subject-aux inversion. In order to capture these facts, Dayal proposes that clause-typing in Italian comes later than English, i.e., remains undetermined at CP in the syntactic derivation. For adjuncts, the syntactic context does not provide any indication that the CP needs to bear interrogative force; therefore, it defaults to the unmarked complementizer *che*. Interrogative clause-typing is later established by the disjunctive particle *o no* 'or not,' which adjoins to the CP-periphery in Italian licensed by a higher Force head (cf. Rizzi 1997). Thus, a similar pattern emerges to the Type I languages where, in the absence of interrogative clause-typing earlier in the derivation, 'or not' comes to the rescue.

What makes the subject and complement different in Italian is that the need for interrogative clause-typing may be predicted from the selectional properties of the embedding verb. Both of the predicates *volere sapere* 'want to know' and *dipendere da* 'depend on' expect CP arguments to carry interrogative force, prompting their complementizer to be realized with the interrogative form *se*. Once clause-typing has already been established, the disjunctive particle *o no* 'or not' becomes an optional element with respect to whether it adjoins to the CP-periphery.

The important takeaway here is that the embedding verb also contributes to clause-typing via selection, working together with complementizers to yield the semantic interpretation of a POLQ.

3.2. JAPANESE. Romance languages like Italian, as well as other Germanic languages besides English, have one or more interrogative complementizers which suffice to type their embedded POLQs. But there are different ways to establish interrogative clause-typing in other languages: in Japanese, for example, the Q-particle *ka* establishes interrogative force and is obligatory with embedded questions, occurring in clause-final position (Hagstrom 1998, Shimoyama 2006, *a.o.*). Moreover, there is a construction where the Q-particle *ka* may be expanded into the disjunctive form *ka dooka* 'whether or not,' rendering salient both the positive and negative alternatives. As shown in (5), this disjunctive form is optional in POLQ-complements and subjects, but required in adjuncts. Thus, if we treat *dooka* as a disjunctive particle, the Type II paradigm emerges where interrogative clause-typing leads to partial optionality of 'or not' in embedded POLQs.[4]

(5) *Japanese*

a. watashi-wa **[** hiro-ga sake-wo nomu **ka (dooka)]** kangae-teiru
I-TOP Hiro-NOM sake-ACC drink **Q** **or not** think-PRS
'I wonder if Hiro will drink sake (or not).'

b. **[** iku **ka** ***(dooka)]** atode denwa de shira-se-masu
go **Q** **or not** later phone with know-CAUS-HON
'Whether or not I go, I'll let you know later by phone.'

[4] One must be careful in referring to *dooka* as a disjunctive particle 'or not,' since it could also mean 'somehow (or other),' reflected in its morphological composition as a *wh*-indeterminate: the *wh*-word *doo* 'how' and Q-particle *ka*. However, when it occurs adjacent to another instance of *ka* by itself, yielding the complex *ka dooka* 'whether or not,' the resulting interpretation is always that of an alternative yes-no POLQ. Thus, it is reasonable to think of Japanese as exhibiting the characteristics of a Type II language; see Uegaki (2018) for an analysis of disjunctive uses of *ka*.

c. **[** hiro-ga sake-wo nomu **ka (dooka)]** wa tenki-ni yoru
Hiro-NOM sake-ACC drink **Q or not** TOP weather-DAT depend
'Whether Hiro will drink sake (or not) depends on the weather.'

3.3. HUNGARIAN. Hungarian also does not have an overt interrogative complementizer; there is a clause-type-insensitive subordinator *hogy* which, similar to *ki* in Hindi-Urdu, is restricted to embedding environments. Despite introducing both declarative and interrogative clauses with *hogy*, Hungarian further distinguishes POLQs from declaratives by the interrogative clause-typing marker *-e*, which cliticizes to the right edge of the embedded predicate (Kiss 2002). Unlike the Hindi-Urdu polar question particle *kya:*, *-e* also appears inside subordinated POLQs, and in fact must do so.[5] As shown in (6), the presence of *-e* renders disjunctive particle *vagy nem* 'or not' optional in POLQ-complements and subjects; however, this strategy is not available for adjuncts, which instead may be formed with a periphastic construction involving disjunction of two clauses headed by the complementizer *ha* 'if,' cf. Hindi-Urdu *agar* in (2b).[6] Thus, despite there being no disjunctive particle *vagy nem* 'or not' in (6b), disjunction is still realized by introducing positive and negative alternatives; in this sense, Hungarian may also be categorized as a Type II language.

(6) *Hungarian*

a. Luca tűnőd-ött, **[** hogy Anna megy**-e** a buli-ba, **(vagy nem)]**.
Luca wonder-PST.3SG COMP Anna go.3SG.INDF**-Q** the party-in **or not**
'Luca wonders if Anna is going to the party (or not).'

b. **[** Ha megy Anna a buli-ba, ha nem **]**, Luca men-ni fog.
if go.3SG Anna the party-in if not Luca go-INF FUT.3SG.INDF
'Whether Anna goes to the party or not, Luca will go.'

c. **[** Hogy Anna megy**-e** a buli-ba, **(vagy nem)]**, a hangulat-á-tól
COMP Anna go.3SG.INDF**-Q** the party-in **or not** the mood-3SG.POSS-ABL
fog függ-eni.
FUT.3SG.INDF depend-INF
'Whether Anna goes to the party (or not) will depend on her mood.'

To summarize, we have seen that in Type II languages, interrogative clause-typing occurs in embedded POLQs. In addition, whether clause-typing is established—by interrogative complementizers, Q-particles, or clause-typing markers—determines to a large extent whether a disjunctive particle 'or not' may be optionally realized in certain POLQ-embedding environments where it otherwise would have been obligatory. However, the prediction that clause-typing feeds optionality of 'or not' falls short in embedded POLQ-adjuncts, for which disjunction remains necessary.

[5] The Hungarian particle *-e* is restricted to POLQs; in both Hindi-Urdu and Hungarian, the presence of a *wh*-word is sufficient for establishing interrogative clause-typing in *wh*-questions. Root POLQs can also be formed in Hungarian with special intonation on (pen-)ultimate syllables, like Hindi-Urdu and Italian, thus rendering *-e* optional. However, intonation is unavailable in POLQ embedding, and the only strategy available is clause-typing marker *-e*.

[6] Another way of forming embedded POLQ-adjuncts in Hungarian, see (15), is to embed a subordinated POLQ under *függetlenül attól* 'regardless of that,' similar to Mandarin *wulun/buguan* 'no matter' in (3b). Disjunction need not be overt in such cases; see Section 5 for further discussion of adjuncts formed with 'no matter' and 'regardless of.'

4. An anomalous Type II language. So far, we have examined Type II languages for which embedded POLQ-subjects and complements display the same optionality with respect to 'or not,' contrasting them with adjuncts which require overt disjunction. This section will look at another Type II language, one that exhibits an asymmetry between complements and subjects—Georgian.

On the surface, Georgian (Kartvelian) bears similarities to English and Italian in having an interrogative complementizer *tu* (Erschler 2015; Luo 2025). Evidence for the complementizer status of *tu* comes from its inability to occur in root contexts, and its ability to alternate with the default complementizer *rom* to introduce clausal complements of responsive predicates, yielding the corresponding difference in clause type, as illustrated in (7).

(7) aravi-s u-tkv-am-s, [{rom / tu} [eg sašiši sakme]-a]
no.one-DAT PV-say-TS-PERF.3SG, that / TU this.NOM dangerous task.NOM-BE.PRS.3SG
'No one said {that / whether} it is a dangerous task.' (Rayfield 2006: 720)

In addition to its subordinative function, *tu* also appears in alternative questions, matrix or embedded; in such cases, it must immediately precede the last alternative introduced. For polar questions, the disjunctive particle is thus realized as *tu ara* 'or not,' where *tu* is paired with the negative propositional anaphor *ara*, which introduces the negative alternative. Luo (2025) proposes that this disjunctive *tu* is the same as the interrogative complementizer *tu*: besides being able to occur only once in alternative questions (cf. Japanese *ka* appears on each disjunct), the upshot is that *tu* never occurs in the same embedded POLQ as the disjunctive particle *tu ara* 'or not,' since Georgian only allows one copy of the interrogative complementizer to be pronounced.[7]

For the purposes of testing whether the disjunctive particle *tu ara* 'or not' may occur in POLQ-embedding contexts, then, the approach which must be taken is not whether disjunction is allowed *in addition* to the interrogative complementizer *tu*, but *in lieu* of it. The data in (9) shows that the disjunctive strategy for POLQ-embedding is the most stable and productive among speakers, with *tu ara* 'or not' accepted in all three syntactic environments; conversely, when the interrogative complementizer *tu* enters solo, it is only robustly attested with embedded POLQ-complements (9a), but not with adjuncts or subjects. Specifically, POLQ-adjuncts like (9b) were unanimously unacceptable with *tu* by itself, whereas POLQ-subjects like (9c) were reported to be ungrammatical by 5 out of 7 consultants in independently conducted elicitations.[8]

[7] For the Georgian data in this section, *tu* will be glossed as TU when it directly subordinates a POLQ, and as 'or' when directly preceding *ara* in alternative POLQs. These should, however, be understood as the same lexical item.

[8] There is another crucial difference between adjuncts and subjects that use *tu* only. For embedded-POLQ subjects like (9c), placing *tu* in the immediate pre-verbal position is ungrammatical for most speakers. When embedded-POLQ adjuncts place *tu* in the immediate pre-verbal position, on the other hand, the result *is* grammatical, but no longer expresses the meaning of an alternative unconditional—instead, it denotes an indicative conditional (8).

(8) **[tu** mo-g-c'on-var**]**, me šen gamo-g-qv-eb-i
TU PVB-2-like-BE.PRS.1SG I you PVB-2-follow-TS-FUT.1SG
'If you like me, I will follow you.'

More generally, *tu* is also the complementizer that introduces antecedents of conditionals. Although it shares the same surface form as the interrogative complementizer *tu*, I argue that unlike disjunctive *tu* in alternative questions, this variant of *tu* with conditionals is a separate lexical item. One reason to motivate homophony of this sort is that interrogative *tu* does not occur in indicative clauses; in Georgian, this contrast in mood is manifest via word order restrictions. Interrogative *tu* must always be immediately pre-verbal, but conditional *tu* need not be. See Iatridou & Zeijlstra (2022) for a diachronic perspective on the formal identity of interrogative and conditional complementizers.

(9) *Georgian*

a. šota-s e-cod-in-eb-a, [tav-is šeqvarebul-i **{tu}**
Shota-DAT PV-know-CAUS-TS-FUT.3SG REFL-GEN beloved-NOM **TU**
mo-v-a **{tu ara}**]
PVB-come-FUT.3SG **or not**
'Shota will know whether his girlfriend will come (or not).'

b. [mo-g-c'on-var ***(tu ara)**], me šen gamo-g-qv-eb-i
PVB-2-like-BE.PRS.1SG **or not** I you PVB-2-follow-TS-FUT.1SG
'Whether you like me or not, I will follow you.'

c. [c'armat'eba-s (šen) miağ-c'-ev ***?(tu ara)**] damok'idebuli-a šen-s
success-ACC you PVB-reach-TS **or not** dependent-BE.PRS.3SG your-DAT
šroma-ze
work.NMLZ-on
'Whether you will achieve success depends on how hard you work.'

Thus, Georgian reveals a pattern that differs from other Type II languages identified thus far: subject-POLQs, rather than behaving like complements with respect to optional disjunction, now align closer to adjunct-POLQs in requiring the disjunctive particle *tu ara* 'or not.' A summary of the POLQ-embedding profile across the different languages examined is provided in Table 1.

Table 1. Is 'or not' optional or obligatory in embedded POLQs?

	Type I languages (*Hindi-Urdu*, *Mandarin Chinese*)	Anomalous Type II language (*Georgian*)	Type II languages (*English*, *Italian*, *Japanese*, *Hungarian*)
POLQ-complements	obligatory	optional	optional
POLQ-subjects	obligatory	obligatory	optional
POLQ-adjuncts	obligatory	obligatory	obligatory

5. Analysis. As we have seen, interrogative clause-typing plays an important role in determining whether 'or not' may become optional in certain POLQ-embedding environments. Following the semantics of questions laid out in Hamblin (1973) and Karttunen (1977), I will assume that interrogatives differ from declaratives in their semantic type—the latter denotes ordinary propositions, i.e., sets of worlds (*à la* Hintikka 1969), whereas the former denote *sets of propositions*. What interrogative clause-typing establishes, then, is a semantic type shift from ordinary propositions of type $\langle s,t\rangle$ into propositional sets of type $\langle\langle s,t\rangle,t\rangle$, as illustrated in (10).

(10) $[[\text{C}_{+\text{WH}}]] = \lambda p_{\langle s,t\rangle}\, \lambda q_{\langle s,t\rangle}\, [q = p]$ (maps proposition p into singleton set $\{p\}$)

In root contexts, this type distinction becomes relevant as polar interrogatives may be used in speech acts to introduce or highlight sets of salient propositional alternatives (Biezma & Rawlins 2012). In embedding contexts, where discourse-related properties are absent, this type distinction

is no longer meaningful; the way to distinguish an embedded POLQ from its declarative prejacent, then, is to make it *non-singleton*, denoting both the positive and negative alternatives.

Building on a line of previous work, starting with Bolinger (1978) and continued by others (Roberts 1996/2012; Abels 2007; Pruitt & Roelofsen 2011; Biezma & Rawlins 2012; Roelofsen & Farkas 2015; Uegaki 2018; Kamali 2025; Dayal 2025), I will assume polar questions to begin their lives as singleton sets. Although space prevents a more detailed motivation of this theory, I refer readers to Section 3.2 of Biezma & Rawlins (2012) for some additional perspective on the matter. What this affords us is an explanation for why 'or not' becomes obligatory in a number of POLQ-embedding contexts: disjunction naturally produces the non-singleton set that is required to distinguish the meaning of yes-no polar questions from declaratives. This disjunctive particle 'or not' may be realized either clause-internally or clause-externally: if it is clause-internal, then it must establish interrogative clause-typing in association with a licensing head, e.g., a null interrogative complementizer or Q-operator (Type I languages), and if it is clause-external, then clause-typing has already been established, and it builds the negative alternative into a singleton set containing the content proposition (Type II languages).

This leads to the question of when 'or not' becomes optional in embedded POLQs, given that they are required to be non-singleton. Interrogative clause-typing accomplishes the first step of building a propositional set (10), but does not guarantee plurality of this set. I propose, following Biezma & Rawlins (2012), that a pragmatic operation may apply at LF to coerce a proto-question (singleton POLQ formed by clause-typing) into a non-singleton propositional set meaning (11):

(11) ANTI-SINGLETON COERCION (Biezma & Rawlins 2012: 393)
If $|[[\alpha]]| = 1$, where α is of type $\langle\langle s,t\rangle,t\rangle$ and denotes $\{A\}$, then α can be coerced (as a last resort) into the denotation $\{\lambda w.A(w),\ \lambda w.\neg A(w)\}$.

This operation is possible only in Type II languages, which establish interrogative clause-typing, but not in Type I languages; thus, an explanation becomes available for why only Type II languages permit optionality of 'or not' in certain embedding environments, whereas Type I languages always require disjunction in embedded POLQs.

Moreover, I claim that ANTI-SINGLETON COERCION is subject to locality constraints; it cannot apply freely to rescue the derivation, as we have seen already with adjuncts which require disjunction across both Type I and II languages. This appeal to locality is in the spirit of Biezma & Rawlins (2012), who propose the following schema as proof of concept (12):

(12) ANTI-SINGLETON CONSTRAINT SCHEMA[9] (Biezma & Rawlins 2012: 393)
For any Q-embedding verb V: $[[\mathbf{V}\ \mathbf{[Q]}\ \alpha\mathbf{]}]]$ is defined $\Longrightarrow \left|[[\mathbf{[Q]}\alpha\mathbf{]}]\right| > 1$.

Specifically, they suggest that coercion applies when an interrogative clause is selected for locally by an embedding verbal predicate. Empirical evidence for this schema in (12) has been observed previously: in Italian (4), it is precisely complement- and subject-POLQs that allow the

[9] Biezma & Rawlins (2012) exclude dubitative verbs like *doubt* from this paradigm, which permit declarative CPs and polar questions as clausal complements, but not alternative or *wh*-questions. They note that *doubt*-type verbs, in contrast to other responsive predicates where a clause-type distinction is meaningful (7), have the characteristic property that their declarative and interrogative complements are semantically identical. I will likewise omit such clause-embedding predicates, motivating the need for clause-typing from a semantic perspective.

complementizer *se* to head the embedded polar interrogative, both of which appear in argument positions; adjunct-POLQs are not locally selected by the embedding verb and are instead headed by *che*. In Hungarian (6), a similar pattern holds for complement- and subject-POLQs, both of which allow the clause-typing marker *-e* to appear on the embedded predicate, whereas adjunct-POLQs are formed by a periphrastic strategy involving disjunction. Thus, languages do seem to provide a way of distinguishing POLQs that are selected by verbs from those that are not.

Even for Type II languages that do not make any such morphosyntactic distinction between subjects/complements vs. adjuncts, like English or Japanese, we may suppose that the former are locally selected by the verb and the latter are not. I argue that this locality domain, governed by the verbal predicate, is exactly where the anti-singleton coercion operation may apply (13). This makes the prediction that only subject- and complement-POLQs allow their non-singleton meaning to be derived pragmatically, and that 'or not' should become optional in these embedded polar interrogatives—matching the pattern that we have identified for Type II languages.

(13) LOCALITY CONSTRAINT ON ANTI-SINGLETON COERCION (*weak version*)
An embedded POLQ is coerced into a non-singleton propositional set if and only if it is locally selected by an embedding predicate, including both subjects and complements.

One might wonder if there is anything special about the verbal category of embedding predicates, or whether other kinds of embedding predicates may also license coercion in their locality domains. (13) correctly predicts that because adjunct-POLQs cannot be locally selected by embedding verbs, they are unable to be coerced and require 'or not.' But it also makes an interesting claim about unconditional clauses that are introduced by prepositional modifiers like 'regardless of' or 'no matter,' which are truth-conditionally equivalent to adjunct-POLQs. Examples of such concessive clauses are given in (14), which share the semantic meaning of (1b).

(14) a. **[** No matter whether she will leave early **(or not)]**, I will leave early.

b. **[** Regardless of whether she will leave early **(or not)]**, I will leave early.

Unlike adjunct-POLQs, these concessive clauses allow 'or not' to occur optionally in their embedded polar interrogatives. It is not a verbal predicate that selects them, but the prepositional modifiers 'regardless of' and 'no matter,' which are also predicates of subordinated interrogative clauses. (13) predicts that such predicates license coercion of their interrogative complements, as corroborated in (14) by the optionality of 'or not'; in other Type II languages, such as Hungarian, the preposition *függetlenül attól* 'regardless of that' licenses interrogative clause-typing with the polar question marker *-e* as well (15), which is unavailable to adjunct-POLQs.

(15) **[** Független-ül at-tól, hogy Anna megy**-e** a buli-ba, **(vagy nem)]**,
independent-ADV it-ABL COMP Anna go.3SG.INDF**-Q** the party-in **or not**
Luca men-ni fog.
Luca go-INF FUT.3SG.INDF
'Regardless of whether Anna goes to the party (or not), Luca will go.'

Thus, anti-singleton coercion is not restricted to verbal predicates with respect to licensing, but may be possible with other clause-embedding predicates. Nevertheless, one thing that

remains necessary is interrogative clause-typing; coercion cannot apply without first forming a propositional set, as exemplified by Type I languages like Mandarin Chinese, which requires A-not-A reduplication even in concessive clauses headed by *wulun* / *buguan* 'no matter' (3b).

So far, we have explained why Type I languages without interrogative clause-typing do not license coercion at all, and must express 'or not' overtly in embedded POLQs, whereas Type II languages permit coercion in the locality domain of embedding predicates, yielding optionality of 'or not' in POLQ-subjects and complements. Something yet to be explained, however, is the pattern demonstrated by the anomalous Type II language Georgian (9): this language allows 'or not' to alternate with the interrogative complementizer *tu* in complements, but not subjects (16).

(16) LOCALITY CONSTRAINT ON ANTI-SINGLETON COERCION (*strong version*)
An embedded POLQ is coerced into a non-singleton propositional set if and only if it is locally selected by an embedding predicate, limited to direct (semantic) complements.

Here is an attempt: as we have seen, coercion cannot successfully convert the content proposition of an embedded POLQ into a non-singleton propositional set on its own, but must do so in conjunction with an interrogative complementizer or clause-typing marker, i.e., the contributors of interrogative clause-typing (10), which is a necessary prerequisite given that coercion applies to proto-questions, not ordinary propositions. However, Luo (2025) argues that Georgian *tu* is a special kind of interrogative complementizer—it does not establish clause-typing, which is instead achieved by head movement of the embedded verb to a higher focus projection. Rather, *tu* assumes its semantic complement to already be question-denoting and acts as a presuppositional filter, checking whether the embedded POLQ denotes a non-singleton propositional set (17).

(17) $[[\textit{tu}]] = \lambda Q_{\langle\langle s,t\rangle t\rangle} : \underline{|Q| > 1}. Q$

I suggest that the reason for stronger locality restrictions on Georgian (16), such that only the complement-POLQs of embedding predicates are coerced, but not subject-POLQs, may be an outcome of *tu* taking on some of the burden that coercion would have been expected to carry, namely checking whether the embedded POLQ needs to be converted into a non-singleton set. This "interference" leads to a partial weakening of coercion, such that it can only rescue direct complements but not subjects, which are structurally farther from the embedding predicate. In Georgian, coercion thus provides a non-disjunctive strategy for embedding POLQ-complements with *tu*, but not POLQ-subjects, where a presupposition failure obtains. For canonical Type II languages, coercion is more synergistic with interrogative complementizers and clause-typing markers, checking on its own whether the singleton propositional set denoted by the embedded POLQ needs its negative alternative to be introduced—in both subjects and complements.

To summarize, I have argued that anti-singleton coercion may build non-singleton propositional set meanings from embedded POLQs that are interrogatively clause-typed, but is subject to different locality constraints in Type II languages, either weak (13) or strong (16). Whether such a proposal stands up to scrutiny will require further evaluation against other anomalous Type II languages that share a more conservative distribution of 'or not' like Georgian.

6. A language without coercion. Until now, we have examined languages that require 'or not' in some or all POLQ-embedding environments; it was argued that coercion (11) provided a way for 'or not' to become optional. We have also seen that coercion may manifest in strong or weak

guises across different languages; one remaining question is whether such an operation might be considered a linguistic universal. This will be the subject of our last section, focusing on Turkish.

Turkish (Turkic) does not have a disjunctive particle like 'or not,' and therefore falls outside the Type I vs. Type II dichotomy motivated in this paper. Instead, Turkish builds POLQs—matrix or embedded—by adding the focus clitic *-mI* to their declarative prejacent, which could attach either to the verb or to the object for broad focus interpretations (Kamali 2011). Disjunction is not required in yes-no question complements if *-mI* is present (18).

(18) **[** Ali yemek **{mi}** yap-tı **{mi}** **]**, merak ed-iyor-um
Ali dinner **MI** make-PAST **MI** wonder do-PRES-1SG
'I wonder if Ali made dinner.' (Kamali 2025: 44)

An asymmetry arises, however, between these two attachment sites when considering nominalized variants of embedded POLQs, which are purported to be equally as common. The object attachment POLQ retains the clitic *-mI* on the object (19a), whereas the verb-attachment POLQ requires the clitic to be replaced by a periphrastic V-not-V construction (19b).

(19) *Turkish* (Kamali 2025: 45)

a. Merve **[** Ali'nin yemek **mi** yap-tığ-ın **]**-ı soruyor.
Merve Ali-GEN dinner **MI** make-NMLZ-3SG-ACC asks
'Merve asks if Ali made dinner.' *(object attachment)*

b. Merve **[** Ali'nin yemek yap-ıp yap-ma-dığ-ın **]**-ı soruyor
Merve Ali-GEN dinner make-CVB make-NEG-NMLZ-3SG-ACC asks
'Merve asks if Ali made dinner.' *("verb attachment")*

The contrast in how the two attachment sites are realized in POLQ-complements between finite (18) and nominalized (19) contexts raises two questions: first, why do verb-attachment POLQs not permit *-mI* under nominalization, but object-attachment POLQs do? Second, why must the verb-attachment POLQ resort to disjunction in order to realize a nominalized POLQ?

Kamali (2025) considers there to be a semantic difference between verb-attachment and object-attachment POLQs—their propositional set is *bipolar* in the former, but *monopolar* in latter. This difference is reflected syntactically—Kamali & Krifka (2020) and Kamali (in review) propose that verb-attachment POLQs project a Pol(arity) head, but not object-attachment POLQs, with evidence from negative concord asymmetries such as NPI-licensing.

In other words, the source of a non-singleton meaning in verb-attachment POLQs arises from the syntactic presence of a Pol head, which is absent from object-attachment POLQs; furthermore, Kamali (in review) suggests that verb-attachment POLQs are *barred* from the default monopolar meaning due to a failure of focus projection (cf. Selkirk 1995). Instead of coercion, then, they must find a different semantic pathway for deriving their bipolar question meaning:

- In finite POLQ-complements, Pol accomplishes this by associating with focus clitic *-mI*;
- Unlike finite POLQ-complements, Pol is unavailable in nominalized POLQs due to occurring higher in the verbal functional spine, above the site of nominalization. Another way

to produce the bipolar question meaning—without *-mI*—is with alternative disjunction, expressible in Turkish with a periphrastic V-not-V construction (19b).

Object-attachment POLQs, on the other hand, are strictly monopolar. Even in embedding contexts like (18) or (19a), they maintain the evidential bias of a monopolar question meaning (see Kamali 2025 for relevant diagnostics).[10] In contrast to verb-attachment POLQs, they allow focus projection from object to VP to broad focus, permitting *-mI* under nominalization (19a).

The takeaway from the Turkish POLQ paradigm is that languages do not have to rely on the default monopolar question meaning to derive bipolar (non-singleton) question meanings. Thus, I consider Turkish to be a language where coercion does not play a role in the grammar of POLQs, given that it has separate derivational pathways for monopolar and bipolar meanings, which are strictly non-overlapping in distribution (cf. English rising declaratives vs. polar interrogatives).

Moreover, Turkish nominalized POLQs (19) reveal that when the derivational pathway for a bipolar meaning is unavailable, the alternative strategy used is disjunction (19b)—coinciding with the obligatory presence of the disjunctive particle 'or not' in embedding contexts wherever coercion is not licensed in Type II languages. This suggests that disjunction may be a linguistic universal for deriving bipolar question meanings, either optionally or obligatorily.

7. Conclusion. Embedded POLQs, as we have seen for most languages, are interpreted as non-singleton propositional sets consisting of a positive and negative alternative. The way that this bipolar question meaning may be realized differs depending on whether an interrogative complementizer and/or clause-typing marker is available in the grammar of the language. In Type I languages (*Hindi-Urdu*, *Mandarin*), the interrogative complementizer and/or clause-typing marker is absent, and a disjunctive particle 'or not' is required in all POLQ-embedding contexts—complements, adjuncts, and subjects. In Type II languages (*English*, *Italian*, *Hungarian*, *Japanese*), where a interrogative complementizer and/or clause-typing marker appears in embedded POLQs, 'or not' becomes optional in some embedding contexts, yet remain obligatory with POLQ-adjuncts.

This contrast was explained by adopting a Hamblin-Karttunen approach to the semantics of questions, where interrogatives are propositional set-denoting. Furthermore, it is assumed that where interrogative-clause typing is established, POLQs start out as singletons, but may sometimes be coerced into a non-singleton propositional set at LF, subject to locality constraints. Anti-singleton coercion provides another way for bipolar question meanings to be derived from singleton sets apart from the disjunctive particle 'or not' in Type II languages—if interrogative clause-typing is absent from a language, on the other hand, then coercion also cannot apply, as we have seen for Type I languages and Turkish. Type I languages productively make use of 'or not' in order to derive bipolar question meanings across POLQ-embedding environments, while Turkish offers a distinct semantic pathway for generating propositional alternatives via focus marking.

One source of cross-linguistic variation that emerges is strictness of the locality domain of anti-singleton coercion—Georgian differs from other Type II languages in that it can coerce complements of POLQ-embedding predicates, but not subjects. It is argued that the nature of the in-

[10] Kamali (2025) notes that English, Hungarian, and Japanese all share the property of having strictly monopolar forms like Turkish object-attachment POLQs (see Sudo 2013 on Japanese *-no* POLQs, and Gyuris 2017 on Hungarian $/\backslash$-declaratives), but do not have a strictly bipolar analog like Turkish verb-attachment POLQs. One question worth pursuing in future work is whether this property is held by most Type II languages; Italian may be a potential counterexample, given that the foremost candidate for a strictly monopolar form, rising declaratives, is ambiguous between monopolar and bipolar question meanings, in contrast to English rising declaratives (cf. Dayal 2025).

terrogative complementizer may determine such parametric variation; specifically, complementizers that directly establish interrogative clause-typing provide a weak locality domain where both subjects and complements may be coerced, while complementizers like Georgian *tu* only license a strong locality domain, where coercion is restricted to POLQ-complements.

On the other hand, Turkish reveals that languages which do not have a disjunctive particle 'or not' still make use of periphrastic disjunction in order to derive bipolar question meanings where other strategies are unavailable, e.g., nominalized verb-attachment POLQs. Such patterns may point to the existence of a broader linguistic universal, namely that disjunction provides a robust manner for building negative alternatives into propositional sets cross-linguistically.

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