Constraining Alternatives in Turkish Polar Questions

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1 Introduction

In the sentence in (1), the subject DP is focused. Rooth (1985, 1992) put forward the seminal proposal that focus triggers the computation of alternatives. In some way, alternatives are formed by replacing the focus with different elements. However, the grammatical algorithm to compute focus alternatives remains a locus of ongoing investigation.

(1) Only $[\text{ALI}]_F$ slept.

Rooth proposed that alternatives are formed as *semantic* objects, by replacing the denotation of the focus with meanings of the same semantic type. In (1), the subject DP would be replaced by different entities, generating alternatives, each saying that x slept, for a different entity x. *Only* would exclude alternatives to convey that no one other than Ali slept. On the other hand, Fox and Katzir (2011) suggest that alternatives are formed as *syntactic* objects (see also Katzir 2007). In (1), the focused DP would be replaced with certain constituents.

Our aim is to show that a syntactic approach to alternative computation can help account for the interpretation of polar questions in Turkish. Turkish polar questions contain a clitic *=mI*, whose distribution is sensitive to focus (e.g. Kamali 2011, 2015). In turn, Atlamaz (2023) proposes that the denotation of the question is computed via focus semantics (see also Kamali and Krifka 2020). Hamblin (1973) proposes that a question denotes the set of its possible answers, and Atlamaz derives the Hamblin set from a set of focus alternatives. We will observe that a type-based approach to forming alternatives, combined with Atlamaz's approach, would predict that the Hamblin set can contain more answers than are attested. We suggest that the target Hamblin set can be derived in a principled way if alternatives are syntactic, and replacements of the focus are constrained based on syntactic category (as in e.g. Katzir 2007, Jeretič et al. 2024).

The paper proceeds as follows. In Section 2, we lay background on Turkish polar questions, and sketch an analysis based on Atlamaz (2023). In Section 3, we consider the type-based approach to generating alternatives, and show that it over-generates possible answers, given the analysis in Section 2. In Section 4, we propose to solve the problem with appeal to a syntactic constraint, and compare that constraint to the one in Fox and Katzir (2011). Section 5 concludes.

2 Polar Questions

As previewed, our central testing ground will be polar questions. A basic example in English is provided in (2). Throughout the paper, we will assume that the Hamblin set for a polar question contains two possible answers, one positive and one negative, as in (3).[1]

(2) Did Ali sleep?

(3) $\{ sleep(ali), \neg sleep(ali) \}$

For Turkish, Atlamaz (2023) develops a compositional analysis where focus plays a central role in forming a polar question denotation. We consider matrix polar questions in Section 2.1, and outline Atlamaz's approach in Section 2.2. In Section 2.3, we show that the analysis also captures an observed effect of focus in novel data with embedding.

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[1]There are two approaches to the semantics of a polar question. In 'bipolar' analyses, the semantics derives a Hamblin set which contains both positive and negative answers (e.g. Hamblin 1973, Karttunen 1977, Ciardelli et al. 2015). In 'monopolar' analyses, only the positive answer is derived (e.g. Biezma and Rawlins 2012, Roberts 2012, Gonzalez 2023). In the latter view, a Hamblin set containing the negative answer may be coerced pragmatically. The analysis we will adopt derives a bipolar Hamblin set.

2.1 The Focus Clitic

Polar questions in Turkish contain a clitic *=mI*, characterized as a focus marker (e.g. Kamali 2015, Atlamaz 2023). While *=mI* does not generally occur as a focus marker in the language, *=mI* is obligatory in polar questions. By default, *=mI* occurs rightmost, as in (4). (4) is interpreted in parallel to its English paraphrase, and can be resolved with either a positive or negative answer, including the response particles *evet* ('yes') or *hayır* ('no').

(4) Ali uyu-du=mu?
Ali[NOM] sleep-PST.3SG=FM
'Did Ali sleep?'

(5) ALI=*mi* uyu-du?
Ali[NOM]=FM sleep-PST.3SG
'Was it Ali who slept?'

Yet, in addition to its default site, *=mI* can attach to other constituents instead. For a constituent to host *=mI*, that constituent must be focused, as signaled by prosodic stress. In (5), *=mI* attaches to the subject DP. The question is then taken to target the identity of who slept. A key intuition is that a positive response can be a complete answer to (5), while a negative response must occur with a continuation indicating someone else who slept (for a detailed discussion, see Kamali and Krifka 2020, Atlamaz 2023). That is, (6b) is taken to be a complete answer, but not (6a). The question can be approximately paraphrased with a cleft, as shown under (5).

(6) a. Hayır.
no
'No.'

b. Hayır, Veli uyu-du.
no Veli[NOM] sleep-PST.3SG
'No, Veli slept.'

Atlamaz (2023) proposes that the focus clitic reveals the mechanism responsible for deriving the Hamblin set, and thus takes computation of the Hamblin set to be based on focus alternatives. We present an analysis which follows Atlamaz (2023) next.

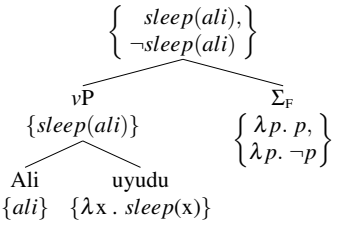
2.2 Composing with Focus

Atlamaz (2023) proposes that polar questions in Turkish always contain a narrow focus. Consider first the default case, with *=mI* rightmost. *=mI* is taken to attach to a covert polarity head, Σ (Kamali and Krifka 2020). Σ is F-marked by default, while *=mI* is vacuous. The LF is (7). Each node in the structure has two semantic values, which we refer to as ordinary and focus values, following Rooth (1985, 1992). The ordinary value for Σ is the identity function of type $<st,st>$ in (8a). When Σ bears F-marking, Atlamaz makes a key assumption that only two alternatives are introduced on the focus dimension. One is the identity function itself, and the other is a negation operator of type $<st,st>$, as in (8b).[2] The focus value of the TP, then, is as in (9). The alternatives to Σ propagate through the derivation, via Pointwise Functional Application. So, the focus value for the TP is the set of positive and negative propositions that Ali did and did not sleep.

(7) **LF for (4)**
$[_{CP}\ [_{TP}$ Ali uyudu Σ_F(=*mI*)] C_Q]

(8) **Interpreting Σ**
a. $[\![\Sigma]\!]^o = \lambda p_{st}\ .\ p$
b. $[\![\Sigma]\!]^f = \{\ \lambda p_{st}\ .\ p, \lambda p_{st}\ .\ \neg p\ \}$

(9) **Focus dimension (to TP)**



Departing from Atlamaz (2023), we take it that a covert C head sets the ordinary value of the CP to be the focus value of its prejacent. C_Q can be analyzed as in (10) (after Kotek 2014, 2019, cf. Beck 2006). Given the LF in (7), composition on the ordinary dimension is shown in (11). The ordinary value of the TP is the proposition that Ali slept. That is over-written at the CP level, so

[2] We will show $\lambda p_{st}\ .\ \neg p$ to abbreviate $\lambda p_{st}\ .\ \lambda w\ .\ \neg p(w)$, and likewise with other logical operators.

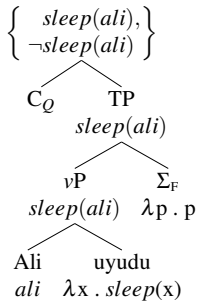
that the overall ordinary value is the set of propositions in (9), which constitutes the Hamblin set for the question. As discussed by Atlamaz, the response particles *evet* ('yes') and *hayir* ('no') would be anaphoric to the proposition that Ali slept. In our spelling out of the analysis, the antecedent would be the ordinary value of the TP. Although that proposition is over-written at the CP-level, it should still be an accessible antecedent for anaphoric retrieval.[3]

(10) **Interpreting C**

a. $[\![\mathrm{C}_Q\ \alpha]\!]^o = [\![\alpha]\!]^f$

b. $[\![\mathrm{C}_Q\ \alpha]\!]^f = \{\ [\![\mathrm{C}_Q\ \alpha]\!]^o\ \}$

(11) **Ordinary dimension**



With focus driving computation of the Hamblin set, intuitions can also be captured when *=mI* occurs at a non-default position. To illustrate, consider the LF for the example in (5), where *=mI* attaches to the subject DP, which is the focused constituent in this case.

(12) **LF for (5)**

$[_{\mathrm{CP}}\ [_{\mathrm{TP}}\ \mathrm{ALI}_{\mathrm{F}}(=mI)\ \text{uyudu}\ \Sigma\ ]\ \mathrm{C}_Q\ ]$

The TP would, again, have as its ordinary value the proposition that Ali slept, as shown in (13a). With focus on the subject, the focus value is now as in (13b). Alternatives to the subject are entities, and so the alternatives to the TP are propositions, each saying that x slept, for a different entity x. The CP has as its ordinary value the focus value of the TP.

(13) **Interpreting (5)**

a. $[\![\mathrm{TP}]\!]^o = sleep(ali)$

b. $[\![\mathrm{TP}]\!]^f = \{\ sleep(\underline{ali}), sleep(\underline{veli}), sleep(\underline{zeki}), \ldots\ \} = [\![\mathrm{CP}]\!]^o$

The intuitions about answerhood discussed above are predicted in Atlamaz's approach. A positive response particle would convey that Ali slept, anaphoric to the proposition in (13a). Given the Hamblin set, a negative response particle by itself could not resolve the question. If Ali did not sleep, the responder must pick out a different true proposition from the set in (13b). The Hamblin set which Atlamaz posits for (5) is analogous to that of a *wh*-question (such as *Who slept?*).[4] The difference, in Atlamaz's view, is that response particles can occur in answers to the question in (5), as they can be anaphoric to the ordinary value of the TP in that case.

2.3 A Look at Embedding

We present further data which can be predicted if focus drives question computation. We consider polar questions under embedding, and observe that the reading of the matrix clause depends on the syntactic height of the *=mI* clitic. Consider, first, the example in (14).

[3] Atlamaz assumes that both the ordinary and focus values of the TP are retained at the CP-level. We depart from that in positing that C_Q shifts the focus value into the ordinary dimension. This will simplify composition when the question is embedded. A parallel operator is invoked in *wh*-questions in Beck (2006) and Kotek (2014, 2019). Yet, it has been taken not to occur with focus in general (see Kotek 2019, Erlewine 2025). In the analysis as presented, C_Q can occur with any focused element in the Turkish data.

[4] If multiple people slept, a complete answer to *Who slept?* would identify everyone who slept. Atlamaz (2023) reports that (5) exhibits a parallel pattern. Still, (5) would be infelicitous if it were already established prior to the question being asked that there are multiple sleepers (see Kamali 2015, Kamali and Krifka 2020). We set aside this issue, as cases like (4) will be most central to our discussion.

(14) Yannis Ali uyu-du=mu diye meraket-ti.
Yannis[NOM] Ali[NOM] sleep-PST=FM that wonder-PST
'Yannis wondered whether Ali slept.'

In (14), a polar question is embedded under the predicate *meraket* ('wonder'). The embedded clause contains an overt complementizer, *diye*, and *=mI* occurs just to the left of *diye*, rightmost within the embedded question. (14) would have the LF in (15). The embedded question would compose like in the matrix case. Polar alternatives are introduced to Σ and propagate to the TP on the focus dimension. Assuming that *diye* can spell out C_Q, that head would shift the focus value to the ordinary value to form the Hamblin set in (16). *Meraket*, as defined in (17a), would compose to derive the proposition in (17b).[5] The sentence is correctly predicted to express a declarative: that Yannis stands in the wonder-relation to the polar question as to whether Ali slept.

(15) **LF for (14)**
$[_{CP_2}\ [_{TP_2}$ Yannis $[_{CP_1}\ [_{TP_1}$ Ali uyudu Σ_F(=*mI*)] C_Q] meraketti] C]

(16) **Interpreting CP_1**
$[\![CP_1]\!]^o = \{\ sleep(ali), \neg sleep(ali)\ \}$

(17) **Interpreting CP_2**
a. $[\![\text{meraket}]\!] = \lambda Q_{\widehat{<s,t>}}.\lambda x.wonder(x,Q)$
b. $[\![CP_2]\!]^o = wonder(yannis, [\![CP_1]\!]^o)$

We observe that changing the placement of *=mI* affects the interpretation of the matrix clause. Compare (14) to (18). In (18), *=mI* occurs to the *right* of the complementizer *diye*. In both (14) and (18), the embedded clause is interpreted as a question, as required by *meraket*, which only embeds questions. However, in (18), the matrix clause also receives a question reading.

(18) Yannis Ali uyu-du diye=mi meraket-ti?
Yannis[NOM] Ali[NOM] sleep-PST that=FM wonder-PST
'Is it whether Ali slept that Yannis wondered?'

We propose that *=mI* tracks the *highest* F-mark in these data. In (14), *=mI* is under *diye*, so the highest focus must be within the embedded clause, as per the LF in (15). By contrast, in (18), we propose that there are *two* foci, as in (19). The lower focus is on the embedded Σ, as before. But, in addition, the entire embedded CP (CP_1) is focused. *=mI* attaches to CP_1.

(19) **LF for (18)**
$[_{CP_2}\ [_{TP_2}$ Yannis $[_{CP_1}\ [_{TP_1}$ Ali uyudu Σ_F] C_Q]$_F$(=*mI*) meraketti] C_Q]

If focus drives computation of a Hamblin set, high attachment of *=mI* is predicted to yield a matrix question. Concentrating on the focus dimension, the embedded CP would have as its focus value a set of questions, as shown informally in (20b). Crucially, these alternatives are triggered above the embedded C_Q head, and so would propagate to the matrix level. The matrix TP would have the focus value in (21b). The focus value is a set of propositions, each saying that Yannis wonders Q, for a different question Q. Assuming that a covert matrix C_Q is present, that focus value would become a Hamblin set on the ordinary dimension at the last step in the matrix CP.

(20) **Interpreting CP_1**
a. $[\![CP_1]\!]^o = \{\ sleep(ali), \neg sleep(ali)\ \}$
b. $[\![CP_1]\!]^f \approx \{$ whether Ali slept, whether Heidi had döner, who came, ... $\}$

(21) **Interpreting matrix**
a. $[\![TP_2]\!]^o = wonder(yannis, [\![CP_1]\!]^o)$
b. $[\![TP_2]\!]^f = \{\ p : \exists Q \in [\![CP_1]\!]^f\ [p = wonder(yannis,Q)]\ \} = [\![CP_2]\!]^o$

[5]The widehat over the semantic type indicates that the argument is a *set* of objects of that type.

Overall, the embedding data provide further evidence that polar questions are in some way tied to focus. When *=mI* occurs in the embedded clause, the matrix is a declarative. When it occurs in the matrix clause, the matrix is a question. The data follow if *=mI* tracks the highest F-mark, and alternatives are used up by the local C_Q head, where a Hamblin set is formed.

3 Over-generation Problem

In the previous section, we presented an analysis where focus is responsible for determining the Hamblin set for a polar question in Turkish. We now turn to our central concern, which is to consider implications of that approach for whether focus alternatives are computed as semantic or syntactic objects.[6] We will restrict our attention to basic cases where *=mI* occurs at its default position, with focus on the polarity head, Σ. Our aim is to predict the Hamblin set from a general theory of focus. We will work with (22), with the target Hamblin set in (23).

(22) Ali uyu-du=mu?
Ali sleep-PST.3SG=FM
'Did Ali sleep?'

(23) $\{ sleep(ali), \neg sleep(ali) \}$

The LF for (22) is repeated in (24). As discussed, Atlamaz (2023) takes it that Σ has the focus value in (25). In turn, only the two propositions in (23) are alternatives at the clausal level. Yet, the focus value in (25) is assumed, rather than derived, in Atlamaz's analysis.

(24) $[_{CP}\ [_{TP}$ Ali uyudu $\Sigma_F\ ]\ C_Q\ ]$

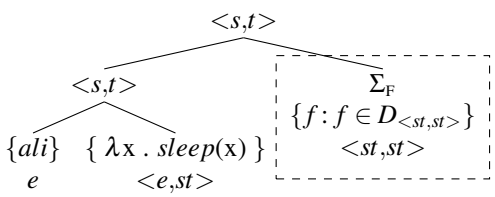
(25) $[\![\Sigma]\!]^f = \{\ \lambda p_{st}\ .\ p, \lambda p_{st}\ .\ \neg p\ \}$

As noted at the outset of the paper, Rooth (1985) proposes a general algorithm for how to form alternatives as semantic objects, where the denotation of the focus is replaced by any meaning of the same semantic type. In this section, we consider that approach for polar questions. In Section 3.1, we spell out the prediction, and in Section 3.2, show that too many alternatives are expected. In Section 3.3, we show that the problem is not straightforward to solve with contextual domain restriction. We will suggest a response based on a syntactic view of alternatives.

3.1 Type-theoretic Prediction

The semantic type of each node in the TP in (24) is given in (26), along with the focus value for the terminals in Rooth's approach. Crucially, the ordinary value of Σ is the identity function of type $<st,st>$, so its focus value is the set containing all propositional operators.

(26)



The focus value for Σ would include the target polar alternatives in (27a) and (27b). But, it would also include any other propositional operator. A sample is given in (27). In (27c), the operator is a deontic necessity modal. (27d) and (27e) contain a deontic necessity modal, together with negation or conjunction. Further operators, not shown, would contain modals of different flavors, conditionals, aspectual predicates, other Boolean coordinators, and so forth.

[6] Gonzalez (2023) has put forward a different analysis of Turkish polar questions. In her approach, the Hamblin set is computed entirely by the polar C head, independent of focus. Focus merely contributes to the presupposition, as C additionally triggers a presupposition that some focus alternative is true. Our discussion of alternatives will rely on the view that the Hamblin denotation of a basic polar question in Turkish depends on focus alternatives introduced by F-marking on the polarity head, Σ. We leave it to the future to assess whether our point could be adapted to Gonzalez's line of analysis.

(27) **Focus value for Σ**
$[\![\Sigma]\!]^f = \{$ (27a), (27b), (27c), (27d), (27e), ... $\}$
a. $\lambda p_{st} . p$
b. $\lambda p_{st} . \neg p$
c. $\lambda p_{st} . \Box_{deontic}(p)$
d. $\lambda p_{st} . \neg\Box_{deontic}(p)$
e. $\lambda p_{st} . \Box_{deontic}(p) \wedge p$

The focus value for the TP would, then, contain all of the propositions in (28), among many others. The ones shown in (28) stem from the operators in (27). These say that Ali did and did not sleep, that he did and did not *have to* sleep, and the conjunction that he had to sleep and did. As defined in Section 2, C_Q would set the Hamblin set for the question as this focus value.

(28) **Corresponding alternatives**
$[\![TP]\!]^f = \{$ (28a), (28b), (28c), (28d), (28e), ... $\}$
a. $sleep(ali)$
b. $\neg sleep(ali)$
c. $\Box_{deontic}[sleep(ali)]$
d. $\neg\Box_{deontic}[sleep(ali)]$
e. $\Box_{deontic}[sleep(ali)] \wedge sleep(ali)$

The traditional Hamblin set for the polar question contains just the answers in (28a) and (28b). In the following, we make explicit that the additional alternatives in (28) lead to deviant predictions as to what should constitute a licit answer to the polar question.

3.2 Too Many Answers

The traditional Hamblin set predicts that one should always resolve a basic polar question with a positive or negative response. Yet, with additional alternatives, other answering patterns should arise. To assess the predictions, we will assume an explicit theory of answerhood, encoded in a covert operator (*Ans*). The LF in (24) is updated in (29). *Ans* applies to the Hamblin set, and picks out the actual complete answer at a given world. For concreteness, we adopt the formulation of *Ans* in (30), due to Dayal (1996). *Ans* presupposes that the Hamblin set contains a maximally informative true answer and, if so, outputs that answer. Informativity is based on logical entailment, and so the output of *Ans* will amount to the logically strongest true Hamblin answer.

(29) $[\ \boxed{Ans}\ [_{CP}\ [_{TP}$ Ali uyudu $\Sigma_F\ ]\ C_Q\ ]\ ]$

(30) $[\![Ans]\!](Q) = \lambda w : \exists p \in Q\ [\ p(w) \wedge \forall p' \in Q\ [\ p'(w) \rightarrow p \subseteq p'\ ]\ ]$
$. \ \iota p \in Q\ [\ p(w) \wedge \forall p' \in Q\ [\ p'(w) \rightarrow p \subseteq p'\ ]\ ]$

Now, suppose that all of the propositions in (28) were in the Hamblin set, as repeated in (31). Consider, then, the world in (32). To circumscribe our discussion, we will consider only two facts: that there is a deontic requirement for Ali to have slept, and Ali did actually sleep.

(31) **Hamblin set**

$$\left\{ \begin{array}{c} sleep(ali), \\ \neg sleep(ali), \\ \Box[sleep(ali)], \\ \neg\Box[sleep(ali)], \\ \Box[sleep(ali)] \wedge sleep(ali)\}, \\ \ldots \end{array} \right\}$$

(32) **Facts at w′**
a. Ali had to sleep.
b. Ali slept.

Given the provided facts, the Hamblin set would contain three true answers, as shown in (33). The conjunctive answer in (33c) is the strongest of the three answers, and so it would be selected by *Ans*, as in (34). As such, to completely resolve the question, the prediction would be that the speaker must provide the conjunction that Ali had to sleep and did sleep. The modal information would have to be provided, along with affirmation of the prejacent.

(33) **True answers**
a. $sleep(ali)$
b. $\Box[sleep(ali)]$
c. $\Box[sleep(ali)] \wedge sleep(ali)$

(34) $[\![Ans]\!]((31))(w') = \Box[sleep(ali)] \wedge sleep(ali)$

The prediction is incorrect. (35a) should only be a partial answer to the polar question in (22), while (35b) would be the complete answer. In fact, the intuition is that (35a) is a complete answer. (35b) is over-informative, and is indicated as infelicitous on that basis.[7]

(35) a. Evet, Ali uyu-du.
yes Ali[NOM] sleep-PST.3SG
'Yes, Ali slept.'
b. # Evet, Ali uyu-mak zorunda-ydı ve uyu-du.
yes Ali[NOM] sleep-INF obligation-PST.3SG and sleep-PST.3SG
'Yes, Ali had to sleep and he slept.'

We have entertained just two facts in the evaluation world. If we take into account a full array of facts, the problem would compound further. To resolve the polar question, the responder would have to provide the conjunction of all true propositions that can be derived by applying any propositional operator to $sleep(ali)$. The answerhood pattern is clearly off target.[8]

3.3 Factoring in Context

One possibility to restrict the Hamblin set would be to appeal to context. Rooth (1992) argues that the domain of a focus operator is determined by two sources: the grammar generates a set of focus alternatives, and context determines which are attested in a discourse. For illustration, we will encode the effect of context in the C_Q head. Its contribution on the ordinary dimension may be revised from (10) as in (36). c picks out a set of propositions provided by the context. As such, the Hamblin set would contain a contextually determined subset of the focus alternatives.

(36) **Interpreting C (revised)**
$[\![C_Q\ \alpha]\!]^{o,c} = [\![\alpha]\!]^f \cap c$

For the question in (22), suppose that the focus value for the TP did contain all of the alternatives in (28). When (22) occurs out of the blue, perhaps the default contextual restriction might be to just the positive and negative answers. The Hamblin set would, then, be as in (37).

[7] Other formulations of *Ans* have been put forward (see e.g. Fox 2013, 2018, Xiang 2016). These converge with the operator in (30) in predicting that *Ans* designates the strongest true answer as the complete answer to a question whose true answers are ordered by entailment, as in (33). It would be difficult to define a principled answerhood function to pick out (33a) among the three true answers in (33).

[8] We could also test for the alternatives to Σ in other environments with polarity focus. Consider contrastive focus in English. Suppose Speaker A says: *Ali must sleep*. Speaker B could then reply: *Ali DID sleep (already)*. If Speaker B's utterance is taken to involve focus on a covert Σ, this might suggest that a deontic modal is an alternative to Σ. Yet, our intuition is that A's utterance facilitates accommodation of the claim that Ali did *not* sleep, and that B's utterance contrasts with that implicit antecedent. As such, these data do not provide evidence for a modal alternative. Contrastive data remain to be more fully explored.

(37) **Hamblin set (target)**
{ $sleep(ali)$, $\neg sleep(ali)$ }

(38) **Hamblin set (hypothetical)**
{ $\Box[sleep(ali)]$, $\neg\Box[sleep(ali)]$ }

Yet, if the Hamblin set were restricted solely by context, any of the propositions in (28) could be attested answers if the context were manipulated. To exemplify the concern, suppose that c could, in principle, pick out any set of propositions. In a supportive context, it should be possible for the Hamblin set to be restricted to contain just the modalized answers in (38). The question in (22) would paraphrase: 'Was Ali required to sleep?'. Consider (39).

(39) **Hypothetical context (at w″)**
Ali injured himself, and said he would go to the doctor to get instructions on what to do. Later that day, we visit his house, and Ali's partner tells us that he slept for several hours after the appointment. We ask: (22).

In this context, it would be infelicitous for us to ask whether Ali slept, as we have been told that he did sleep. But, it would be natural for us to ask whether Ali was required to sleep by the doctor. With the Hamblin set in (38), (22) should be felicitous. If Ali's sleeping was required, *Ans* would output (40): that Ali was required to sleep. Intuitively, however, it is not felicitous to ask (22) and, if we were to ask it anyway, (41) would not be a licit answer. The response would have to be that Ali did sleep. Even in context, (38) is not a possible denotation for (22).[9]

(40) $[\![Ans]\!]((38))(w'') = \Box[sleep(ali)]$

(41) # Ali uyu-mak zorunda-y-dı.
Ali sleep-INF obliged-COP-PST.3SG
'Ali had to sleep.'

More generally, it appears that the target answer to a basic polar question is always a simple positive or negative response, regardless of the context. We take the apparent context invariance of the Hamblin set to suggest that focus alternatives should be constrained in the grammar, so that only the polarity alternatives are computed in the first place.[10]

4 A Syntactic Constraint

Following Fox and Katzir (2011), we take it that focus alternatives are formed in the grammar as syntactic objects, as proposed for scalar alternatives in Katzir (2007). In particular, we posit that alternatives are formed by replacing the focused constituent with other constituents of the same syntactic category. The constraint is (42) (as in e.g. Katzir 2007, Jeretič et al. 2024).

(42) **Category Match Constraint**
If X_F is of syntactic category α, replacements of X must be of category α.

The LF for the polar question in (22) is repeated in (43). Atlamaz (2023), recall, takes Σ to head a polarity projection. We refer to its syntactic category as Pol. We suggest that, in addition to Σ, negation is also of category Pol. The two morphemes are shown in (44) for reference. In forming alternatives to the TP, then, (45a) is generated, as is (45b), where Σ is replaced by NEG.

[9] We could block (38) with a constraint that c must contain the ordinary value of the prejacent of C_Q, here $sleep(ali)$ (after Rooth 1992). Still, there would be a broad range of other Hamblin sets to entertain, including one which could yield a similar result to (38). Consider: { $sleep(ali)$, $\Box[sleep(ali)] \wedge sleep(ali)$, $\neg\Box[sleep(ali)] \wedge sleep(ali)$ }. Each answer entails $sleep(ali)$. The presupposition of *Ans* entails that some answer is true, so $sleep(ali)$ would be presupposed. *Ans* would thus pick out the second or third answer, based just on whether or not Ali was required to sleep. In (39), the presupposition is met, and the question would, again, amount to asking whether Ali's sleeping was required or not.

[10] One approach would be to attempt to revise the semantic composition of (22), so that Σ has an ordinary value of type $<t,t>$ rather than $<st,st>$. The type-based replacements would then be more limited. The only non-constant functions would be $\lambda p_t \,.\, p$ and $\lambda p_t \,.\, \neg p$. Here, however, we will maintain an intensional type and show that a syntactic constraint can offer a principled solution to the problem. We leave it to the future to consider in detail a semantic response. We thank Bernhard Schwarz for raising this point.

(43) $[_{CP}\ [_{TP}$ Ali uyudu $\Sigma_F\ ]\ C_Q\ ]$

(44) **Polar morphemes**
a. $[\![\Sigma]\!] = \lambda p_{st}\ .\ p$
b. $[\![\text{NEG}]\!] = \lambda p_{st}\ .\ \neg p$

(45) **Syntactic alternatives**
a. $[_{TP}$ Ali uyudu $\Sigma\ ]$
b. $[_{TP}$ Ali uyudu NEG $]$

Assuming that Σ and NEG are the only morphemes of category Pol, (45a) and (45b) are the only alternatives generated. (45a) expresses $sleep(ali)$, and (45b) expresses $\neg sleep(ali)$. As such, the Hamblin set formed by C_Q could only be the target one: $\{\ sleep(ali), \neg sleep(ali)\ \}$.[11] With a syntactic constraint, the Hamblin set can thus be restricted in a principled way.

4.1 On Structural Complexity

The proposal that focus alternatives are formed as syntactic objects was put forward in Fox & Katzir (2011) (building on Katzir 2007). Their aim was to solve the 'symmetry' problem, which can be illustrated with *only* in (46). Intuitively, *only* excludes the alternative in (46a) to convey that Al did not eat *all* of the cookies. By contrast, the alternative in (46b) is unattested. If it were, *only* would exclude it to derive the inference that Al *did* eat all of the cookies. To restrict the alternative set, Fox & Katzir invoke a syntactic constraint sensitive to complexity. They suggest that alternatives are formed be replacing the focus with constituents of equal or lesser structural complexity. In (46a), *some* in (46) would be replaced by *all*, which is equally complex. In (46b), the replacement would be *not all*, but that is more complex, and so the alternative is not computed.

(46) Al only ate $[\text{some}]_F$ of the cookies.
a. Al ate all of the cookies.
b. Al ate not all of the cookies.

Yet, recent work has observed that complex alternatives can arise (e.g. Hirsch and Schwarz 2025, Schwarz and Wagner 2024, Trinh and Haida 2015). One case, in Hirsch and Schwarz (2025), involves an alternative which contains disjunction. Consider (47). In w''', Al has to cook, but also has to either clean or shop. The intuition is that (47) is false in that world. As such, (47) is taken to entail (49b), indicating that the alternative in (49a) is attested, and excluded by *only*. In syntactic terms, the alternative would be formed by replacing *cook* in (47) with the more complex disjunction *clean or shop*. Based in part on such cases, analyses have been posited which abandon a structural complexity constraint, and attribute the absence of the negative alternative in (46) to pragmatic factors (see Hirsch and Schwarz 2025, Schwarz and Wagner 2024).

(47) Al only has to $[_{VP}$ cook$]_F$.

(48) **Facts at w'''**
a. Al has to cook.
b. Al has to clean or shop (his choice).

(49) a. **Target alternative**
Al has to $[_{VP}$ clean or shop].
b. **Entailment**
$\Rightarrow \neg\Box[clean(al) \vee shop(al)]$

Our account of Turkish polar questions does not rely on alternatives being subject to a structural complexity restriction. All that is needed is a constraint which requires a match in syntactic category between the focus and its replacements. Hence, if our analysis holds, we provide support for a syntactic view of alternative computation, independent of complexity.

[11] With respect to the derivation, one route is to assume that each node has a focus syntactic value, which is a set of structures, derived recursively as the syntax is built node by node. The focus semantic value for a given node would then be the set of meanings expressed by the alternatives in its focus syntactic value (for discussion, see Katzir 2008, Ch. 3.3). The crucial contribution of C_Q would, again, be to set the ordinary semantic value as the focus semantic value of its prejacent, possibly with contextual domain restriction. We assume that a Hamblin set must contain at least two possible answers for the question to be felicitous. In the case at hand, there are now just two alternatives, so no additional domain restriction should be licit.

5 Conclusion

In this paper, we have compared semantic and syntactic approaches to computing focus alternatives through the lens of polar questions in Turkish. Together with a composition for polar questions based on Atlamaz (2023), we observed that a type-theoretic algorithm would over-generate unattested alternatives. We showed that the target alternative set is predicted if alternatives are formed in the syntax, with replacement of the focus subject to a constraint based on syntactic category. If that account is on the right track, the polar question data would depend on a syntactic view of alternative computation—but not necessarily a structural complexity restriction.

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