Believing p, discovering ¬p: *meğer* and epistemic shifts[1,2]

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Abstract. This paper provides the first formal semantic treatment of *meğer* clauses in Turkish, focusing on their presuppositional and evidential properties. *Meğer* clauses uniquely encodes a doxastic shift, asserting a proposition that the speaker previously believed to be false but now believes to be true. Additionally, the study explores the obligatory occurrence of the so-called indirect evidential marker *-mIş* in *meğer* clauses, proposing that the contexts satisfying the presuppositions of *meğer* inherently satisfy the presuppositions of *-mIş*. Hence, in such contexts, *-mIş* is preferred over direct evidentiality as a result of *Maximize Presupposition!* (Heim, 1991). By analyzing *meğer*, this study aims to contribute to the broader understanding of evidentiality, presuppositions, and epistemic shifts in natural language.

Keywords: (past) belief, knowledge, evidentiality, discourse markers, Turkish

1. Introduction

Turkish has a discourse marker that simultaneously refers to the past and present doxastic states of a speaker. An illustrative example of its use is provided in (1).

(1) Dün Aramis-le konuş-tu-m. **Meğer** İtalya-da-y-mış.
yesterday Aramis-COM talk-PST-1.SG meğer Italy-LOC-COP-EVID
'I talked with Aramis yesterday. *Meğer* he is/was in Italy.'
(≈ he is/was in Italy, *though I had believed that he was not.*)

As the approximate translation indicates, *meğer* clauses convey information about both the speaker's past doxastic state and their current one. In this sense, their pragmatic function is to signal a correction in what the speaker previously held to be true (Erguvanlı-Taylan, 2000).[3]

It is unsurprising that natural languages provide tools to refer back to earlier stages of the doxastic states of conversational participants. One such way is to use a doxastic predicate in the past tense to describe a previous attitude. This is illustrated in (2a).

(2) a. I **believed** that Aramis was in France.
b. ⇝ I do not believe now that Aramis was in France.

The sentence in (2a) gives rise to the inference of a cessation of belief, as illustrated in (2b), similar to how any regular predicate used in the past tense behaves in English (Chierchia and McConnell-Ginet, 2000). However, this inference is pragmatic in nature and not a logical

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[3]The tense of sentences marked with the evidential morpheme *-mIş* in Turkish is ambiguous between present and past readings. Consequently, the *meğer* clause in (1) may refer to either the current or past location of Aramis. However, this ambiguity does not affect the analysis presented here.

consequence of what is expressed by (2a). This flexibility explains why sentences like (2a) can accommodate continuations that either affirm or deny the prejacent, as demonstrated in (3):

(3) a. I **believed** that Aramis was in France.
b. ... and he was in France.
c. ... but he was not. / he was in Italy.

Conversely, one's current belief does not provide any information about their past doxastic state, as illustrated in (4).

(4) a. At the moment, I **believe** that Aramis was in France.
b. ... but I did not believe so previously.
c. ... and indeed I previously believed so as well.

There are also other items that seem to have similar pragmatic function to that of *meğer* such as *apparently* in English. Like *meğer*, *apparently* gives rise to the inference that the speaker's prior belief about the situation was incorrect. This inference is illustrated in (5):

(5) a. I talked with Aramis yesterday. **Apparently**, he was in Italy.
b. $\rightsquigarrow$ I did not believe that he was in Italy.

However, English *apparently* is compatible with situations where the speaker previously believed that its prejacent was true as well, as illustrated in (6).

(6) I believed that Aramis was in France. **Apparently**, he was.

English *actually* can generate a similar effect but remains logically neutral regarding the content of past beliefs, as shown in (7).

(7) I believed that Aramis was in France, and he actually was./ but he actually was not.

As I will show in Section 2, *meğer* is unique among these strategies in that its sole function is to encode a belief correction or reversal.

Before concluding this section, I would like to note two issues arising from the analysis of *meğer* clauses. One concerns the morphosyntactic complexity of these constructions. *Meğer* in Turkish has two other forms that suggest complex morphosyntax. These forms are presented in (8).

(8) meğer-se(-m)
meğer-CON-1.SG

One version includes the conditional marking. The most complex form, which is possibly more colloquial, also includes the first-person singular, and only that, as an additional marker. Although the morphosyntactic complexity of these variations might suggest a decompositional approach to the meaning of this discourse marker, I will focus on the simplest form in this paper and leave the possibility of a decomposition for further research. This is because the complex forms have the same semantic and syntactic distribution of the simple form.

A second issue concerns the syntactic and semantic requirements that *meğer* imposes on the predicate. Erguvanlı-Taylan (2000) observes that *meğer* must occur with the so-called indirect evidential marker *-mIş*. (9) shows that no other tense/aspect marking can replace the evidential morphology in *meğer* constructions.

(9) Ben Aramis burada diye düşün-müş-tü-m. Meğer
1.SG Aramis here C believe-ANT-PST-1.SG meğer
git*(-miş)/(*-ti/*-iyor/*-edecek).
go-EVID/-PST/-IMPERF/-FUT
'I believed that Aramis was here. *Meğer* he (has) left (*is leaving/*will leave).'

The exact semantic properties of evidentiality in Turkish is a complex issue (Yavaş, 1980; Slobin and Aksu-Koç, 1982; Göksel and Kerslake, 2004; Şener, 2011). Therefore, I will initially leave out its contribution to the meaning of *meğer* constructions. However, in Section 4, I will discuss a possible account that deals with its obligatoriness.

The goal of this paper is two-fold. First, this paper aims to provide an adequate characterization of *meğer* in Turkish. While discourse markers of this type have been extensively studied in German (Jacobs 1991; Kratzer 2004; Coniglio 2007; Gutzmann 2009; Zimmermann 2012; Egg and Zimmermann 2012; Döring 2016; Döring and Repp 2020, among others), to my knowledge, only *hani* in Turkish has received formal treatment (Akar et al., 2020; Akar and Öztürk, 2020; Dikmen et al., 2024). Second, it seeks to provide novel data on how natural languages express references to the belief states of conversational participants. To my knowledge, no discourse marker has been shown to simultaneously express something about both the past and present doxastic states of speakers.

This paper is organized as follows. Section 2 presents the empirical observations on the felicity conditions of *meğer* clauses with declarative and interrogative prejacents. Section 3 provides the formal implementation of these observations. In Section 4, I address the obligatoriness of the indirect evidential marking *-mIş* in *meğer* clauses. Section 5 examines the interaction between knowledge and *meğer*. Finally, Section 6 concludes the paper.

2. Empirical observations

In this section, I present the empirical observations that lead to the conclusion that *meğer* clauses require the speaker to have believed the falsity of their prejacent. First, I discuss *meğer* clauses with declarative prejacents. Then, I discuss those with interrogative prejacents.

2.1. Declarative sentences

Informally, *meğer* contrasts what the speaker believed to be true in the past with what is actually true.

(10) a. Ben Aramis Fransa-da diye düşün-müş-tü-m.
1.SG Aramis France-LOC C believe-ANT-PST-1.SG
'I believed that Aramis was in France.'
b. ... **meğer** İtalya-da-y-mış.
meğer Italy-LOC-COP-EVID
'... *meğer* he is/was in Italy.'

When the prejacent of *meğer* lacks a contrastive content to the previous belief, the *meğer* clause is infelicitous.

(11) a. Ben Aramis Fransa-da diye düşün-müş-tü-m.
1.SG Aramis France-LOC C believe-ANT-PST-1.SG
'I believed that Aramis was in France.'
b. ... (#**meğer**) Fransa-da-y-mış.
meğer France-LOC-COP-EVID
'... *meğer* he is/was in France.'

Note that the continuation is felicitous without *meğer*. Thus, the infelicity of the continuation must result from the contribution of *meğer*.

Erguvanlı-Taylan (2000: 135) states that "the form *meğer* [...] is an overt expression of the loss of validity of the speaker's earlier beliefs/knowledge about a certain state of affairs, upon realization of new evidence. Sentences without *meğer*, she notes, are neutral in the sense that they do not reflect any meta-attitude of the speaker toward the given state of affairs" (Erguvanlı-Taylan, 2000: 135).

The description is compatible with the contrastive content requirement presented above. Indeed, the speaker asserting (10b) implicates that she now believes that Aramis is/was in Italy, which she had thought to be false in the past. (11b) is infelicitous because the falsity requirement introduced by *meğer* contradicts the previous statement, which asserts that the speaker believed Aramis was in France. Hence, the informal requirement for contrast can be understood as a false belief requirement on the prejacent, imposed by *meğer*.

Accordingly, *meğer* clauses are felicitous when the negation of the prejacent is explicitly asserted to have been believed by the speaker. This is illustrated in (12).

(12) a. Ben Aramis Fransa-da değil diye düşün-müş-tü-m.
1.SG Aramis France-LOC NEG C believe-ANT-PST-1.SG
'I believed that Aramis was not in France.'
b. ...**meğer** Fransa-da-y-mış.
meğer France-LOC-COP-EVID
'...*meğer* he is/was in France.'

Therefore, a context where the speaker has always believed the prejacent of *meğer* is expected to render its use infelicitous. This is illustrated in (13).

(13) a. Context:Since he first left home, Athos has thought that Aramis has been in Italy. Today, Aramis tells Athos that he is in Italy.
b. Athos: Bugün Aramis-le konuş-tu-m. #**Meğer** İtalya-da-y-mış.
yesterday Aramis-COM talk-PST-1.SG meğer Italy-LOC-COP-EVID
'I talked with Aramis yesterday. *Meğer* he is/was in Italy.'

The belief in the falsity of the prejacent of *meğer* rules out the belief in the possibility of the prejacent. Therefore, *meğer* clauses are predicted to be infelicitous when preceded by a sentence asserting that the speaker believed that the prejacent was possibly true. This prediction is borne out, as shown in (14).

(14) a. Ben Aramis Fransa-da ol-abil-ir diye düşün-müş-tü-m.
1.SG Aramis France-LOC be-MOD-AOR C believe-ANT-PST-1.SG
'I believed that Aramis might be/ have been in France.'

b. #...**meğer** Fransa-da-y-mış.
meğer France-LOC-COP-EVID
'...*meğer* he is/was in France.'

Of course, a belief in the falsity of the prejacent entails a belief in the possible falsity of the prejacent. Therefore, *meğer* clauses are expected to be compatible with sentences asserting that the speaker believed the prejacent was possibly false. This prediction is also borne out, as shown in (15).

(15) a. Ben Aramis Fransa-da ol-ma-yabil-ir diye düşün-müş-tü-m.
1.SG Aramis France-LOC be-NEG-MOD-AOR C believe-ANT-PST-1.SG
'I believed that Aramis might not be/might not have been in France.'
b. ...**meğer** Fransa-da-y-mış.
meğer France-LOC-COP-EVID
'...*meğer* he is/was in France.'

In this section, I have shown that *meğer* clauses are felicitous only when the speaker previously held the belief that the prejacent was false. In the following section, I will discuss *meğer* clauses with questions.

2.2. Interrogative sentences

In Turkish, constituent questions are formed with the help of a wh-item, while polar questions are marked with the question particle *mI*. Illustrative examples of each are provided in (16).

(16) a. Aramis **nereye** git-ti?
Aramis where go-PST
'Where did Aramis go?'
b. Aramis İtalyada **mı**?
Aramis go-PST Q
'Is Aramis in Italy?'

Meğer clauses can host both constituent and polar questions in their prejacent, as shown in (17).

(17) a. Ben Aramis Fransa-da diye düşün-müş-tü-m. **Meğer** nereye git-miş?
1.SG Aramis France-LOC C believe-ANT-PST-1.SG meğer where go-EVID
'I believed that Aramis was here. *Meğer* where did he go?'
b. Ben Aramis Fransa-da diye düşün-müş-tü-m. **Meğer** İtalya-da
1.SG Aramis France-LOC C believe-ANT-PST-1.SG meğer Italy-LOC
mı-y-mış?
Q-COP-EVID
'I believed that Aramis was in Istanbul. *Meğer* is he in Italy?'

I observe that *meğer* with questions is only felicitous when there is a particular answer that the speaker believes to be true. In this sense, these are not genuine information-seeking questions; they are more akin to exclamatives (Zanuttini and Portner, 2003). For example, (17a) is felicitous only in the context provided in (18a), which guarantees that the speaker knows where

Aramis has already gone. This contrasts with the context in (18b), where the speaker asks a genuine question.[4]

(18) a. Context:{When Athos went to the apartment of Aramis, he did not find him there} and called him. Aramis told him that he was in Italy. ✓ **(17a)**
b. Context: {...} and called a friend of his to ask his whereabouts. # **(17a)**

Similarly, (17b), a *meğer* clause with a polar question prejacent, is acceptable only under (19a), where the speaker already knows that Aramis is in Italy. This contrasts with (19b), where the speaker asks an information-seeking question.

(19) a. Context: As they checked the live broadcast of Aramis online, Athos and Porthos saw that Aramis was abroad in Italy. Athos said to Porthos (17b). ✓ **(17b)**
b. Context: Athos heard that Aramis went abroad, but he is not sure. He asked Porthos whether Aramis went abroad. # **(17b)**

The false belief requirement on the prejacent seems to hold for questions as well. In the context provided in (20a), since the constituent question must refer to the proposition that Aramis was in France, the false belief requirement for the prejacent is violated, explaining the infelicity of (20b).

(20) a. Context: Ali believed that Aramis was in France. He later discovered that he was indeed in France.
b. Ben Aramis Fransa-da diye düşün-müş-tü-m. #Meğer nerede-y-miş?
1.SG Aramis France-LOC C believe-ANT-PST-1.SG meğer where-COP-EVID
'I believed that Aramis was in France. *Meğer* where was he?'

In contrast, when the prejacent is understood to have been considered false, a *meğer* clause with a constituent prejacent is grammatical, as illustrated in (21).

(21) a. Context: Ali believed that Aramis was in France. He later discovered that he was in fact in Italy.
b. Ben Aramis Fransa-da diye düşün-müş-tü-m. Meğer nerede-y-miş?
1.SG Aramis France-LOC C know-ANT-PST-1.SG meğer where-COP-EVID
'I believed that Aramis was in France. *Meğer* where was he?'

In polar questions, if the proposition in the question nucleus was not believed to be false, then a *meğer* clause with that question in the prejacent is infelicitous. This is illustrated in (22).

(22) Ben Aramis Fransa-da diye düşün-müş-tü-m. #Meğer Fransa-da
1.SG Aramis France-LOC C believe-ANT-PST-1.SG meğer France-LOC
mı-y-mış?
Q-COP-EVID
'I believed that Aramis was in France. *Meğer* was he in France?'

[4]A question arising from this description is whether *meğer* ever combines with a question rather than solely with an exclamative, given that *meğer* questions never behave like true questions. My analysis derives the exclamative meaning from question denotations, suggesting that *meğer* could be the overt realization of an exclamative operator and offering implications for the derivation of exclamatives more generally.

In order to make (22) felicitous, the prejacent of *meğer* must be a negative polar question, as illustrated in (23). In (23), the proposition in the question nucleus was believed to be false by the speaker. This aligns with the falsity requirement of the prejacent in *meğer* clauses.

(23) Ben Aramis Fransa-da diye düşün-müş-tü-m. Meğer Fransa-da değil
1.SG Aramis France-LOC C believe-ANT-PST-1.SG meğer France-LOC NEG
mi-y-miş?
Q-COP-EVID
'I believed that Aramis was in France. *Meğer* was he not in France?'

If the proposition in the question nucleus was believed to be false in the past, then the question is felicitous as the prejacent of a *meğer* clause, as expected. This is shown in (24).

(24) Ben Aramis Fransa-da değil diye düşün-müş-tü-m. Meğer Fransa-da
1.SG Aramis France-LOC NEG C know-ANT-PST-1.SG meğer France-LOC
mı-y-mış?
Q-COP-EVID
'I believed that Aramis was not in France. *Meğer* was he in France?'

3. Formal implementation

3.1. Declarative sentences

I argue that *meğer* combines with characteristic functions of sets of propositions, introducing the definedness condition that the speaker of utterance previously considered the prejacent in that set to be false but now considers it true. This is shown in (25). I relativize lexical entries to context quadruples, consisting of the world of utterance (w_c), the time of utterance (t_c), the speaker of the utterance (s_c), and the assignment function (g_c). I assume that declarative sentences are characteristic functions of sets of worlds, as shown in (27).

(25) For any quadruple $\langle w_c, t_c, s_c, g_c \rangle$,
$[\![\text{meğer}]\!]^{\langle w_c,t_c,s_c,g_c\rangle} = \lambda P_{\langle st,t\rangle} : \exists t' [t' < t_c \wedge C(t') = 1] \wedge \exists! q[P(q) = 1$
$\wedge \text{DOX}_{w_c,t',s_c}(\neg q) = 1 \wedge \text{DOX}_{w_c,t_c,s_c}(q) = 1].\imath q[P(q) = 1 \wedge \text{DOX}_{w_c,t',s_c}(\neg q) = 1$
$\wedge \text{DOX}_{w_c,t_c,s_c}(q) = 1]$
where for any time interval t, C(t) = 1 iff t is a contextually salient time interval

(26) For any world w, time interval t, individual x, and proposition p,
$\text{DOX}_{w,t,x}(p) = 1 \iff \forall w' [w'$is doxastically accessible from w for x at t, $p(w') = 1]$

(27) $[\![\text{Aramis was abroad}]\!] = \lambda$w. Aramis was abroad in w

However, they are type-shifted to combine with *meğer* without a type mismatch. I will not make any commitments with respect to this type-shifting mechanism, but there are conceivable ways of doing this, e.g., with a covert type shifter in syntax. What is important for our purposes is that

this type-shifting results in a characteristic function of a singleton containing the proposition denoted by the declarative sentence, as shown in (28).[5]

(28) $[\![\text{Aramis was abroad}]\!] = \lambda p_{\langle s,t\rangle}.\ p = \lambda w.$ Aramis was abroad in w

Accordingly, *meğer* can combine with declarative sentences without a type mismatch, as shown in (29).

(29) a. $[\![\text{meğer Aramis was abroad}]\!]^{\langle w_c,t_c,s_c,g_c\rangle}$ **is defined only if**
$\exists t'\,[t' < t_c \wedge C(t')] \wedge \exists! q[q = \lambda w.\text{Aramis was abroad in } w$
$\wedge\, \text{DOX}_{w_c,t',s_c}(\neg q) = 1 \wedge \text{DOX}_{w_c,t_c,s_c}(q) = 1]$

b. **if defined** $[\![\text{meğer Aramis was abroad}]\!]^{\langle w_c,t_c,s_c,g_c\rangle} =$
$\iota q[q = \lambda w.\text{Aramis was abroad in } w$
$\wedge\, \text{DOX}_{w_c,t',s_c}(\neg q) = 1 \wedge \text{DOX}_{w_c,t_c,s_c}(q) = 1]$

Informally, (29a) is defined only if there is a contextually salient past time when the speaker believed that Aramis was not abroad and currently believes that he was. Notice that since the type-shifted declarative sentence is a singleton set, the uniqueness requirement is trivially satisfied. If the definedness conditions of *meğer* are met, the combination results in the proposition that satisfies these conditions. In (29b), the return value happens to be the proposition that Aramis was abroad.

The formalization accounts for some of the properties of *meğer* clauses discussed previously. First, the presupposition of *meğer* ensures that *meğer* clauses are infelicitous in contexts where the prejacent has always been believed to be true, as illustrated in (13).

Conversely, these definedness conditions explain how *meğer* clauses can felicitously occur with sentences entailing the speaker's previous belief in the falsity of the prejacent, as in (10) and (12).

Finally, since the speaker is presupposed to have previously believed in the negation of the prejacent, we predict that *meğer* clauses cannot felicitously occur with sentences asserting a past belief in the possibility of the prejacent, as illustrated in (14). In contrast, sentences asserting a past belief in the possibility of the negation of the prejacent are expected to be compatible with them, as shown in (15).

3.2. Constituent questions

Constituent questions are commonly assumed to be sets of propositions corresponding to possible or true answers to the question (Hamblin, 1976; Karttunen, 1977). Unlike declarative sentences, however, constituent questions are not necessarily singleton sets. In fact, as Dayal (2016) notes, constituent questions are necessarily plural sets because wh-elements generate

[5] An alternative approach is to assume Hamblin sets for declarative sentences. However, since I adopt the view that polar questions denote singletons in their ordinary values, this assumption for declarative sentences would obscure the distinction between declarative sentences and polar questions in terms of their ordinary value. Ultimately, the choice depends on theoretical preferences, as either option appears viable without immediate consequences for the analysis of *meğer*.

alternative answers by default. I will adopt this common assumption for the purposes of this paper.

Additionally, I will follow Atlamaz (2023) in assuming that, for Turkish, questions have two values: an ordinary and an alternative semantic value. This aligns with analyses of focus and questions, which introduce an additional focus value alongside the ordinary values for linguistic items (Rooth, 1985, 1992). I argue that *meğer* takes ordinary semantic values as arguments.[6] This restriction could be formalized as *meğer* being in the domain of the interpretation function relative to the ordinary value (*meğer* $\in$ dom($[\![]\!]^{o}$)), but undefined for it relative to the alternative value (*meğer* $\notin$ dom($[\![]\!]^{a}$)).[7]

The ordinary semantic value of a constituent question is a set of propositions, as illustrateed in (30).

(30) a. Aramis nereye git-ti?
Aramis where go-PST
'Where did Aramis go?'

b. $[\![$Aramis nereye gitti?$]\!]^{o,\langle w_c,t_c,s_c,g_c\rangle} = \lambda p_{\langle st,t\rangle}.\ \exists x : \text{place}(x) \wedge p = \lambda w.$ Aramis went to x in w

Since the meanings of constituent questions are also characteristic functions of sets of propositions, they can freely combine with *meğer*. This is illustrated in (31).

(31) a. $[\![$meğer where did Aramis go?$]\!]^{\langle w_c,t_c,s_c,g_c\rangle}$ **is defined only if**
$\exists t'\,[t' < t_c \wedge C(t')] \wedge \exists! q[\exists x : place(x) \wedge q = \lambda w.$Aramis went to x in w
$\wedge \text{DOX}_{w_c,t',s_c}(\neg q) = 1 \wedge \text{DOX}_{w_c,t_c,s_c}(q) = 1]$

b. **if defined** $[\![$meğer where did Aramis go?$]\!]^{\langle w_c,t_c,s_c,g_c\rangle} =$
$\iota q[\exists x : place(x) \wedge q = \lambda w.$Aramis went to x in w
$\wedge \text{DOX}_{w_c,t',s_c}(\neg q) = 1 \wedge \text{DOX}_{w_c,t_c,s_c}(q) = 1]$

Accordingly, *meğer* combined with the ordinary value of the constituent question in (31) is defined only if there is a salient past time when the speaker believed a contextually salient, unique proposition to be false and if she currently believes it to be true. If defined, that proposition is asserted. This accounts for the false belief requirement that we observed with *meğer* clauses with constituent question prejacents, as shown in (20) and (21).

Notice that there can be more than one proposition in the set denoted by the question, depending on how many individuals are in the domain of the existential. However, a single proposition will satisfy these definedness conditions. In other words, these definedness conditions will hold true for only a single x. In environments where such uniqueness is violated, *meğer* clauses with constituent question prejacents are infelicitous. This is illustrated in (32).

(32) a. Athos learns that Aramis went to Italy and France.

[6] Whether *meğer* takes ordinary or alternative semantic values for constituent questions does not make a difference, as they are the same. However, this distinction will be important for polar questions.

[7] Although I do not use ^{o} and ^{a} in the derivations that follow, the interpretation function is understood to return the ordinary values in each derivation.

b. Ben Aramis ne İtalya-ya ne de Fransa-ya git-ti diye
1.SG Aramis neither Italy-DAT nor also France-DAT go-PST C
düşün-müş-tü-m. #Meğer nereye git-miş?
believe-ANT-PST-1.SG meğer where go-EVID
'I believed that Aramis went to neither Italy nor France. *Meğer* where did he go? (≈he went to both Italy and France.)'

The context in (32) forces x to have more than one value, hence forcing two contextually salient propositions to have been believed to be false by the speaker and currently to be believed to be true. Since this violates the uniqueness requirement, the *meğer* clause in (32b) is infelicitous.

However, if we ensure that the domain of the existential is composed of pluralities, then x can have a single value again in the same context, ensuring that it refers to a single plural individual. This is predicted to save the *meğer* clause in (32b), as the uniqueness requirement is satisfied once more. That is, there is a single contextually salient proposition—where Aramis went to x (where $x = \text{Italy} \oplus \text{France}$)—that was believed to be false and is currently believed to be true by the speaker. This is achieved by the plural morpheme on the wh-word, as illustrated in (33).

(33) Ben Aramis ne İtalya-ya ne de Fransa-ya git-ti diye
1.SG Aramis neither Italy-DAT nor also France-DAT go-PST C
düşün-müş-tü-m. Meğer nere-**ler**-e git-miş?
believe-ANT-PST-1.SG meğer where go-EVID
'I believed that Aramis went to neither Italy nor France. *Meğer* which places did he go? (≈he went to both Italy and France.)'

Finally, since *meğer* clauses assert the proposition that satisfies the definedness conditions of *meğer*, in our derivation in (31), the speaker already knows where Aramis went. This explains why these constructions are not truly questions. In other words, given that the result value of the combination of *meğer* with constituent questions is the assertion of a proposition, these constructions cannot serve an information-seeking purpose, as we previously illustrated.

3.3. Polar questions

Polar questions in Turkish are formed with the help of the question particle *mI*. The exact status of this particle is currently a topic of debate. Proposals vary with respect to whether it is truly just a question marker or a topic/focus marker (Kamali and Büring, 2011; Kamali and Krifka, 2020; Atlamaz, 2023). I will not make any particular assumptions regarding its relation to focus and topichood. However, I will assume that polar questions in Turkish also come with two values: one ordinary value and one alternative value (Atlamaz, 2023). Differently from constituent questions, though, the ordinary and alternative values of polar questions are distinct. The ordinary value of a polar question is a singleton containing the proposition denoted by the question nucleus, whereas alternatives are generated as alternative values (see Atlamaz 2023). Hence, the ordinary and alternative values of a polar question are illustrated in (34).

(34) a. Aramis İtalya-da mı?
Aramis Italy-LOC Q
'Is Aramis in Italy?'
b. $[\![\text{Aramis İtalyada mı?}]\!]^{o} = \lambda p_{\langle s,t\rangle}.\ p = \lambda w.$ Aramis is in Italy in w

c. $[\![\text{Aramis İtalyada mı?}]\!]^{a} = \lambda p_{\langle s,t\rangle}.\ p = \lambda w.$ Aramis is in Italy in $w \vee p = \lambda w'.$ Aramis is not in Italy in w'

As in constituent questions, *meğer* takes the ordinary value as its argument. This means that it imposes the condition that the single proposition denoted by the question nucleus was believed by the speaker to be false and is currently believed to be true. Consequently, it asserts that proposition as the return value. This is illustrated in (35).

(35) a. $[\![\text{meğer is Aramis in Italy? }]\!]^{\langle w_c,t_c,s_c,g_c\rangle}$ **is defined only if**
$\exists t'\,[t' < t_c \wedge C(t')] \wedge \exists! q[q = \lambda w.\text{Aramis is in Italy in } w$
$\wedge \text{DOX}_{w_c,t',s_c}(\neg q) = 1 \wedge \text{DOX}_{w_c,t_c,s_c}(q) = 1]$

b. **if defined** $[\![\text{meğer is Aramis in Italy?}]\!]^{\langle w_c,t_c,s_c,g_c\rangle} =$
$\iota q[q = \lambda w.\text{Aramis is in Italy in } w$
$\wedge \text{DOX}_{w_c,t',s_c}(\neg q) = 1 \wedge \text{DOX}_{w_c,t_c,s_c}(q) = 1]$

This account explains the properties discussed previously regarding *meğer* clauses with polar question prejacents. For example, if the proposition denoted by the question nucleus was believed to be true in the past, then the *meğer* clause is infelicitous, as shown in (22). This is predicted by my account, as the ordinary value of a polar question is a singleton. Conversely, if the polar question prejacent was believed to be false in the past, *meğer* clauses are felicitous, as shown in (23) and (24).

This particular analysis for polar questions makes an interesting prediction with respect to NPI licensing. It is well known that polar questions license NPIs crosslinguistically. *Hiç* 'ever' in Turkish is not licensed in positive declarative sentences. However, when the sentence is negated, it works as expected. The contrast is illustrated in (36).

(36) Ahmet bura-ya hiç gel-*(me)-di.
Ahmet here-DAT at.all come-NEG-PST
'Ahmet did *(not) come here at all.' (Görgülü, 2018: 138)

As expected, *hiç* is licensed in polar questions as well, as shown in (37).

(37) Ahmet bura-ya hiç gel-di mi?
Ahmet here-DAT ever come-PST Q
'Did Ahmet ever come here?' (Görgülü, 2018: 138)

Meğer takes as its argument the ordinary value of a polar question, i.e., the singleton containing the proposition denoted by the question nucleus, and asserts that proposition. In other words, *meğer* clauses with polar question prejacents are on a par with declarative sentences. This predicts that *hiç* would be licensed in *meğer* clauses with polar question prejacents as long as the regular licensing conditions of *hiç* in declarative sentences are met; namely, as long as the proposition denoted by the question nucleus has negation. If not, *meğer* clauses with polar question prejacents are expected to be ungrammatical with *hiç*. This prediction is borne out, as shown by the contrast in (38).

(38) a. #Meğer Aramis bura-ya hiç gel-miş mi?
meğer Aramis here-DAT ever come-EVID Q
'#*Meğer* did Aramis ever come here?'

b. Meğer Aramis buraya hiç gel-**me**-miş mi?
meğer Aramis here ever come-NEG-EVID Q
'*Meğer* didn't Aramis ever come here?'

4. Evidential marking

As indicated in the beginning, *meğer* clauses require *-mIş*, the so-called 'indirect' evidential marker in Turkish (Şener, 2011). I repeat the relevant example in (39).

(39) Ben Aramis burada diye düşün-müş-tü-m. Meğer
1.SG Aramis here C believe-IMPERF-PST-1.SG meğer
git*(-miş)/(*-ti/*iyor/*-edecek).
go-EVID/-PST/-IMPERF/-FUT
'I believed that Aramis was here. *Meğer* he (has) left, is leaving/will leave.'

Descriptively, *-mIş* is used when the speaker has an indirect source of knowledge, such as hearsay or inferential knowledge, regarding the truth of a proposition, whereas sentences without *-mIş* are assumed to be directly known to the speaker. (40) provides an example from the literature to illustrate this distinction.

(40) Context: Gül learned from Ali that Ali planted an oak tree in his garden.
a. Ali to Gül: Bahçe-ye bir meşe ağac-ı dik-ti-m.
garden-DAT an oak tree-ACC plant-PST-1.SG
'I planted an oak tree in the garden.'
b. Gül to Orhan: Ali bahçe-sin-e bir meşe ağac-ı dik-miş.
Ali garden-POSS-DAT an oak tree tree-ACC plant-EVID
'Ali has apparently planted an oak tree in his garden./I heard that Ali planted an oak tree in his garden.' (adapted from Göksel and Kerslake 2004: 309)

The general observation is that *meğer* clauses always mark an epistemic shift and always come with evidential marking. This is because their definedness conditions require the speaker to have believed a proposition *p* in the past, to believe its negation currently, and to assert the negation of that proposition.

When we create other environments without *meğer* where these conditions are met, evidential marking remains obligatory. This is illustrated by the contrast in (41).[8]

(41) a. Aramis-in İtalya-da ol-duğ-un-u bil-iyor-du-m. Aslında
Aramis-GEN Italy-LOC be-NMZ-POSS-ACC know-IMPERF-PST-1.SG in.fact
tüm yaz orada-y-dı.
all summer there-COP-PST
'I knew that Aramis was in Italy. In fact, he was there all summer.'

[8]The verb *bil* 'know' in Turkish means *believe* if its prejacent is a clause headed by the complementizer *diye* and *know* if its prejacent is a nominalized clause. See Özyıldız (2017) for details. Substituting *bil* in (41b) for *düşün, san, inan* 'think, (falsely) think, believe' generates equivalent results.

b. Aramis İtalya-da diye bil-iyor-du-m. Aslında tüm yaz
Aramis Italy-LOC COMP believe-IMPERF-PST-1.SG in.fact all summer
Fransa-da-y*(-mış)/*-dı.
France-LOC-COP-EVID/PST
'I believed that Aramis was in Italy. (Apparently) he was in France.'

In (41a), where no overt evidential marking is present, the speaker is understood to have already known that Aramis was in France all summer. The second sentence serves as a supplementary piece of information to the first. In contrast, in (41b), the truth of the prejacent of the matrix epistemic predicate contradicts the second sentence. If Aramis was in France all summer, he could not possibly have been in Italy. Thus, if the speaker believed that Aramis was in Italy, they could not have known that he was in France all summer.

Based on the contrast in (41), I observe that the so-called indirect evidential *-mIş* must be used when there is a shift in knowledge. Specifically, when the proposition combining with the evidential morpheme was not **known** to the speaker at a salient past time prior to the speech time, the proposition must include the evidential morpheme. I will argue that this is the presupposition of *-mIş* in Turkish. More formally, *-mIş* is a partial identity function over propositions, introducing the definedness condition that the speaker **did not know** the proposition in its prejacent at a contextually salient past time prior to the utterance time.[9] The accessibility relation for knowledge is stricter than for belief, in that it is veridical, requiring the proposition *p* to hold in the actual world as well.

Further, I assume that direct evidentiality is morphologically unmarked in Turkish. Semantically, it functions as an identity function over propositions, without imposing any definedness conditions. The contrast between the two evidentials is illustrated in (42).[10]

(42) a. $[\![\text{-mIş}]\!]^{\langle w_c, t_c, s_c, g_c\rangle} = \lambda p_{\langle s,t\rangle}\colon \exists t'\ [t' < t_c \wedge C(t') = 1] \wedge K_{w_c,t',s_c}(p) = 0.\ p$

b. For any world w, time interval t, individual x, and proposition p,

$K_{w,t,x}(p) = 1 \iff \forall w'\ \left[w' \text{ is epistemically accessible from } w \text{ for } x \text{ at } t, p(w') = 1\right]$

c. $[\![\emptyset_{direct}]\!]^{\langle w_c, t_c, s_c, g_c\rangle} = \lambda p_{\langle s,t\rangle}.\ p$

I further assume that each matrix assertion has an evidential level. Direct and so-called indirect evidential marking are in competition with each other. Specifically, I formalize this competition based on Heim (1991)'s *Maximize Presupposition!*. A simple version of this principle will suffice for our purposes.

(43) *Maximize Presupposition!*
If two competing elemets ϕ and ψ are truth conditionally equivalent alternatives, and ϕ is presuppositional while ψ is not, then one must choose ϕ over ψ whenever its presuppositions are met. (adapted from Heim 1991)

[9]Many thanks to Ömer Demirok for helpful discussions about evidentiality in Turkish.

[10]Admittedly, this is an oversimplification of the meaning of *-mIş* in Turkish and requires further refinement, particularly in addressing how the contextually relevant past time should be interpreted in simple evidential contexts. I leave this refinement for future work.

Accordingly, whenever the presupposition of *-mIş* is satisfied, it will be chosen over direct evidentiality by *Maximize Presupposition!*.

Under the assumption that epistemically accessible worlds are a subset of doxastically accessible ones, knowing a proposition p logically implies believing p, as outlined in (44a).[11] Additionally, as Stalnaker (2006: 179) points out, "given the fact that our idealized believers are logically omniscient, we can assume, in addition, that their beliefs will be consistent," as illustrated in (44b).

(44) (Stalnaker, 2006: 179)

a. $\vdash K\phi \rightarrow B\phi$ — Knowledge implies belief

b. $\vdash B\phi \rightarrow \neg B\neg\phi$ — Consistency of belief

Of course, *meğer* clauses always come with the presupposition that the speaker believed at a past time that p was false, i.e., that $\neg p$ was true. By (44b), believing $\neg p$ entails not believing p. This, in turn, implies not knowing p at that past time, by the contraposition of (44a). In other words, whenever the presupposition of *meğer* is satisfied, the presupposition of *-mIş* is satisfied by default. This ensures that *-mIş* is chosen over direct evidentiality by *Maximize Presupposition!*, hence the obligatoriness of *-mIş* in *meğer* clauses.

5. Knowledge and *meğer* clauses

The formula in (44a) posits that knowing a proposition p entails believing it. Since *meğer* introduces the presupposition that at a salient past time, the speaker believed that the proposition in the prejacent was false, a sentence asserting that the speaker knew that the prejacent was true would be contradictory to the *meğer* clause. This prediction is borne out as shown in (46).

(45) Aramis-in İtalya-da ol-duğ-un-u bil-iyor-du-m. *#Meğer*
Aramis-GEN Italy-LOC be-NMZ-POSS-ACC know-ANT-PST-1.SG meğer
İtalya-da-y-mış.
Italy-LOC-COP-EVID
'I knew that Aramis was in Italy. *Meğer* he was in Italy.'

However, the current analysis also takes the evidential morpheme to introduce the presupposition that the speaker did not know p. Hence, the infelicity of the continuation in (46) can also understood to be the clash between the presupposition of the evidential and the previous assertion. Indeed, the continuation in (46) is also infelicitous without *meğer*.

(46) Aramis-in İtalya-da ol-duğ-un-u bil-iyor-du-m.
Aramis-GEN Italy-LOC be-NMZ-POSS-ACC know-ANT-PST-1.SG
#İtalya-da-y-mış.
Italy-LOC-COP-EVID
≈'I knew that Aramis was in Italy. He apparently was in Italy.'

[11] This thesis, which has been dubbed as 'entailment thesis', has been largely accepted in the linguistic literature, though its validity has been questioned in philosophy, mostly through cases like Radford (1966)'s unconfident examinee. But there are also convincing arguments against such cases proposed by Rose and Schaffer (2013), where knowledge entails 'dispositional belief' even in those cases, although see Ambardekar (forthcoming).

Similarly, not knowing *p*, or not knowing whether *p*, does not have any logical consequence for believing *p*. Therefore, these are expected to be compatible with *meğer* clauses regardless. This is confirmed by (47).

(47) a. Aramis-in İtalya-da ol-duğ-un-u bil-m-iyor-du-m.
Aramis-GEN Italy-LOC be-NMZ-POSS-ACC know-NEG-IMPERF-PST-1.SG
Meğer İtalya-da-y-mış.
meğer Italy-LOC-COP-EVID
'I did not know that Aramis was in Italy. *Meğer* he was in Italy.'

b. Aramis İtalya-da mı değil mi bil-m-iyor-du-m. Meğer
Aramis Italy-LOC Q not Q know-NEG-IMPERF-PST-1.SG meğer
İtalya-da-y-mış.
Italy-LOC-COP-EVID
'I did not know whether Aramis was in Italy. *Meğer* he was in Italy.'

Surely, the presupposition of *meğer* is compatible with the sentences in (47). This means that the initial sentences in (47) do not conflict with the presupposition of *meğer*. However, if the sentences in (47) are enriched with information that contradicts the false belief requirement of *meğer*, *meğer* continuations become infelicitous, as expected, as shown in (48).

(48) a. Aramis İtalya-da mı değil mi bil-m-iyor-du-m. Fakat İtalya-da
Aramis Italy-LOC Q not Q know-NEG-IMPERF-PST-1.SG but Italy-LOC
diye düşün-müş-t-üm. #Meğer İtalya-da-y-mış.
C think-ANT-PST-1.SG meğer Italy-LOC-COP-EVID
'I did not know that Aramis was in Italy. But I believed that he was in Italy. #*Meğer* he was in Italy.'

b. Aramis İtalya-da mı değil mi bil-m-iyor-du-m. İtalya-da
Aramis Italy-LOC Q not Q know-NEG-IMPERF-PST-1.SG Italy-LOC
ol-abil-ir de ol-ma-yabil-ir de diye düşün-müş-t-üm. #Meğer
be-MOD-AOR also be-NEG-MOD-AOR also C think-PERF-PST-1.SG meğer
İtalya-da-y-mış.
Italy-LOC-COP-EVID
'I did not know that Aramis was in Italy. I believed that he might or might not be in Italy. #*Meğer* he was in Italy.'

6. Conclusion

In this paper, I demonstrated that *meğer* clauses serve as a linguistic tool for speakers to indicate that an epistemic shift has taken place. I provided the first formal unified analysis of *meğer*, addressing its behavior across various sentence types. Some issues remain open for further investigation. One pertains to the possible morphosyntactic complexity of *meğer*. One of its variants appears with conditional marking. I leave open the question of whether this provides morphological evidence for a biclausal analysis of *meğer* clauses. While an atomic representation of *meğer* accounts for many of its properties, it does not necessarily rule out a biclausal analysis. Another issue concerns the possible presence of first-person agreement on *meğer* when conditional marking is present. Given that the presupposition of *meğer* is speaker-

oriented, an intriguing question is whether this agreement is a morphosyntactic reflection of a semantic property. Specifically, one could explore a system where the speaker parameter is explicitly encoded in the syntax of *meğer* clauses.

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