When tense shifts presuppositions: *hani* and monstrous semantics

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Abstract

This study shows that the Turkish expression *hani* exhibits interesting properties for the study of the semantics and pragmatics interface, because, on the one hand, its function is merely pragmatic, but on the other hand, it is subject to the truth-conditional effect of other constituents at LF. This notwithstanding, studies on this expression are remarkably scarce. The only attempts to describe its properties are Erguvanlı-Taylan (Studies on Turkish and Turkic languages; proceedings of the ninth international conference on Turkish linguistics, 133–143, 2000), Akar et al. (Discourse meaning, 57–78, 2020), and Akar and Öztürk (Information-structural perspectives on discourse particles, 251–276, 2020). In the present study, we introduce the first formal semantic and pragmatic treatment of clauses containing *hani*. Unlike previous accounts, we claim that *hani* can have one of the following two major pragmatic functions: making salient a proposition in the Common Ground or challenging one in a past Common Ground, therefore requiring a Common Ground revision. Despite its variety of occurrences, we argue that *hani* has a uniform interpretation and provide a compositional analysis of the different construals that it is associated with. Furthermore, we show that a formally explicit and accurate characterization of *hani* clauses requires operating on indexical parameters, in particular the context time. Therefore, if our proposal is on the right track, *hani* clauses may provide indirect empirical evidence in favour of the existence of "monstrous" phenomena, adding to the accumulating cross-linguistic evidence in this domain (see Schlenker in Linguistics and Philosophy 26(1):29–120, 2003 and much work since then). The definition of monsters is intended as in Kaplan (Themes from Kaplan, 481–563, 1989).

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1 Preliminary remarks

The Turkish expression *hani* shows similarities with the German discourse particles *ja* and *doch* (Kratzer 1999, 2004, Coniglio 2007, Egg and Zimmermann 2012, Zimmermann 2012, Rojas-Esponda 2014, Döring et al. 2019, among others). Indeed, both German *ja* and *doch* on the one hand and *hani* in several of its occurences on the other hand seem to generate the effect of reminding the addressee that their prejacent is true.[1] This effect is illustrated in (1).

(1) a. ***Hani** Etiler-de vegan bir restoran var (ya). Orada*
    hani Etiler-LOC vegan one restaurant exist ya there

    yi-yebil-ir-iz.
    eat-MOD-AOR-1.PL

    ≈ 'There is a vegan restaurant in Etiler, remember? We may eat there.'

 b. *Es gibt **ja/doch** in Erding ein veganes Restaurant. Wir könnten*
    it is ja/doch in Erding one vegan restaurant we could

    mal dorthin essen gehen.
    sometime there eat go

However, in this paper, we observe some important features that distinguish *hani* from the above mentioned German discourse particles. First, (1a) is restricted to contexts where the prejacent of *hani* is part of the Common Ground with no exceptions (see Sect. 2). This is not so for *ja*, as reported in Kratzer (1999, 2004) (see Kratzer 2004, pp. 126-127 for a detailed description). The same point was brought to our attention about *doch* by an anonymous reviewer, who offered (2) as an example.

(2) a. *Es gibt doch in Erding ein veganes Restaurant. Wir könnten*
    it is doch in Erding one vegan restaurant we could

    mal dorthin essen gehen.
    sometime there eat go

 b. *Aber das ist doch geschlossen.*
    But this is DOCH closed

    (Anonymous Reviewer)

Secondly and more importantly, Turkish *hani* has a second primary use in which it carries intonational prominence and, rather than functioning as a reminder, it challenges the truth of the prejacent.[2] Note, by the way, that in these cases, the past tense

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[1] Extending common practice on intensional operators, we call the sister of *hani* at LF its prejacent.

[2] This paper leaves out a couple of other additional uses of *hani*, which we believe are not immediately related to the two main ones that we investigate here. First, in some very restricted occurrences, *hani* appears to mean *nerede* 'where'. Secondly, it is often used as a "filler", such as 'I mean, um, er' (see

marker is obligatory, and this is crucial for the possibility of challenging effects as discussed in Sect. 4 (see (3)).

(3)　HANI *burada vegan bir restoran var*(-dı)?*
　　　hani　here　　vegan　one　restaurant　exist-PST

　　≈ 'Wasn't there supposed to be a vegan restaurant here?'

The challenging nuance that we observe in (3) resembles closely the effect of English negative polar questions like (4), as the translation in (3) indicates.

(4)　Isn't there a vegetarian restaurant here?　　　　　　　　　(Ladd 1981)

Similarities of this type are what led Akar et al. (2020) and Akar and Öztürk (2020) to the conclusion that *hani* sentences, such as (1a) and (3), are equivalent to negative polar questions with outer and inner negations, respectively. However, in Sect. 5, we show that the resemblance is only superficial in that *hani* clauses display stricter felicity conditions.

The main contribution of this paper is a unified analysis of *hani* in the two very distinct uses mentioned above. In particular, we suggest that *hani* in both uses carries the same expressive presupposition. Our analysis is compatible with the view according to which discourse particles introduce felicity conditions on the utterance of the sentence and do not directly contribute to its truth conditions (see Kratzer 2004; Gutzmann 2009; Egg and Zimmermann 2012, among others). However, we depart from some of these approaches in claiming that this condition is encoded in the lexical entry of *hani* in the form of an expressive presupposition in the sense of Schlenker (2007) and Sauerland (2007). Our *hani* carries a definedness condition which makes reference to contextual parameters (i.e., speaker, addressee, world or time of the utterance context). In this sense, its presupposition is "indexical and sometimes shiftable" (see Schlenker 2007).

The reference to indexical parameters in the presupposition of *hani* and the role of the past tense are important ingredients of our explanation for the different felicity conditions of (1a) and (3) that we illustrate in Sect. 2. Specifically, we show that the past tense in (3) manipulates the time at which the condition needs to hold. This, we claim, is an effect of "indexical shift", a phenomenon that has received much attention in recent literature (see Schlenker 2003 and much work since then). A comprehensive study of indexical shifts, including temporal shift ("Temp Shift"), is Deal (2020).

Although shifting of contextual parameters has been documented in other domains of grammar, the fact that it can be employed in the semantics of discourse markers is a novel observation of this paper. Noticeably, this distinguishes the patterns of *hani* from better known facts concerning German discourse particles and negative polar questions and calls for a distinct analysis.

Özbek 1995, 1998, Furman and Özyürek 2007 for a discussion on "fillers" in Turkish). Finally, it is also used in child-directed speech to draw their attention to an object. Whether or not these uses can fall under a unified analysis is a question that we leave for future research.

The expressive presupposition and the temporal shift that we propose for *hani* below lay the formal grounds for an understanding of the different discourse functions of clauses with *hani*. Those grounds, we argue, are to be found in the syntax-semantics interface. This is the component of the two uses of *hani* that we investigate here. Instead, our illustration of the different discourse pragmatic effects of these two uses remains at a more descriptive and intuitive level.

Whereas this paper contains no formal proposal regarding conversational exchanges and discourse, we do, however, adopt the following notions described in the literature on discourse analysis, dynamic semantics and Speech Act Theory. In the paper, we employ Stalnaker's notion of the Common Ground (CG) intended as the set of propositions that are commonly and mutually believed by the participants of the conversation (see Stalnaker 1977, 1978, 1999, 2002). However, we make the two following additional assumptions regarding the CG. First, we follow Karagjosova's (2004) proposal that the CG not only necessarily increases over the time of the conversation, but might also be reduced by the deletion of some propositions that become controversial. Sentences like (3) appear to trigger such CG revisions in light of novel evidence challenging one or more shared beliefs.

Secondly, we assume that not all propositions in the CG are equally salient/active at the time of the conversational exchange. In each conversation, a different subset of CG-propositions can be made salient, for example by asserting them, in a manner similar to how the mention of an individual by name makes that individual salient for further pronominal reference. We take the reminder function of *hani* illustrated in (1a) to trigger exactly this effect. Similar notions of saliency have been discussed in detail in Karagjosova (2004), Döring (2016), and Döring et al. (2019). Here we would like to point out that, unlike in some of these studies, what *hani* sentences make salient are propositions that are already in the CG and not just commitments (see Groenendijk and Stokhof 1984, Groenendijk 1999 for similar ideas on common ground structuring). See also Sect. 3 for further comments.

Another crucial issue regarding the reminder uses of *hani* needs to be clarified in advance. In these uses, the utterance conveys a proposition that is already in the CG and therefore is "uninformative". However it has been convincingly argued in the literature that this type of redundancy does not lead to ungrammaticality (e.g., see Gajewski 2002a,b, Krifka 2017).What is interesting about Turkish is that this type of redundancy is tolerated only in the presence of *hani*.[3] This we take to be an effect of Heim's (1991) principle of *Maximize Presupposition!*[4]

Finally, one last issue concerning (1a) that we would like to address here is the role of *ya*. Whereas the presence of *ya* affects the intonation of these sentences (see Akar and Öztürk 2020, Akar et al. 2020), it does not affect their semantic and pragmatic contribution or their felicity conditions. Since this paper concerns the semantic and pragmatics of *hani*, it does not address the differences between sentences with and

[3]In fact, a variant of (1a), that is also acceptable, is one where *hani* is unpronounced but *ya* is present. We take this case to be identical to (1a), where *ya* signals the presence of *hani*.

[4]We thank one of the anonymous reviewers for bringing this point to our attention.

without *ya* (if there are any), but takes them to be phonological variants of the same construction.[5]

Finally, a brief note on terminology is in order. Since our analysis takes examples like (1a) as declarative sentences and (3) as questions, we use the labels D(eclarative)-*hani* and Q(uestion)-*hani* to refer to these types of *hani* clauses in the remainder of the paper.

2 Differences between D-*hani* and Q-*hani* clauses

In this section, we show the three crucial respects in which D-*hani* and Q-*hani* clauses differ: they display distinct but related felicity conditions, they differ in the type of assertion they convey (a declarative and question, respectively), and there is a difference in the function of the past morpheme between them.

Given that we analyze Q-*hani* clauses as constructions different from negative polar questions in English, we henceforth use different translations for them. Upon the suggestion of one of the anonymous reviewers, we translate them as regular polar questions with an additional sentence '*We believed so*' to indicate their presuppositions. Similarly, we mark the presuppositional content of D-*hani* clauses as '*As we know*' in our translations of them. The different font is intended to indicate that these are not parts of the assertion, but are encoded as presuppositions. Nevertheless, these translations remain as approximations, and do not fully capture the semantic and pragmatic effects described in detail in the sequel.

2.1 Felicity conditions of *hani* clauses

In contexts where the speaker and addressee do not already believe the prejacent to be true, D-*hani* clauses are not felicitous, as shown in (5).

(5) a. Context: You and Zeynep have a mutual friend, Ali, who went abroad last month to study. However, Zeynep does not know this as she has just woken up from a two month coma. You talk to her about what she has been missing, and say:

    b. *(#Hani) Ali geçen ay   yurtdışına git-ti   (#ya?). Hala ev*
       hani   Ali last   month abroad   go-PST ya   still house

       bul-a-ma-mış.
       find-MOD-NEG-EVID

       ≈ 'Hani Ali went abroad last month. He has not been able to find a house there yet.'

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[5]*Hani* clauses associated with the reminding function presented in (1a) have been reported to have a declarative intonation in the absence of *ya*, whereas they have been claimed to exhibit polar question intonation in the presence of *ya* (Akar and Öztürk 2020, Akar et al. 2020). Our intuitions concerning the intonation of *hani* clauses with *ya* is that it is similar to, but not identical to the intonation pattern found in *yes/no* questions. However, we do not undertake the task of determining their phonological properties and leave the comparison to future research.

Hani in (5b) becomes perfectly fine, and obligatory, in a context like (6) below, where both participants of the conversation believe the prejacent to be true.

(6)   Context: You and Zeynep have a common friend, Ali, who went abroad last month, and both you and Zeynep are aware that he did.

We take this data as an indication that D-*hani* clauses presuppose that the participants of the conversation believe the prejacent to be true.[6]

When we turn to Q-*hani* clauses, crucially, we observe that Q-*hani* clauses are not acceptable when the truth of the prejacent is currently believed. This is shown in (7c). Unsurprisingly, the D-*hani* clause is acceptable, as shown in (7b).

(7)   a.   Context: Ahmet's birthday is tomorrow, and his friends Emre and Mehmet are aware of this. As Mehmet is about to go out to buy a present for him, Emre inquires about his plans. Mehmet says:

      b.   *Hani yarın   Ahmet-in   doğum gün-ü   ya. Hediye al-ma-ya*
           hani tomorrow Ahmet-GEN birth   day-POSS ya present buy-NMZ-DAT

           gid-iyor-um.
           go-IMPERF-1.SG

           ≈ '*As we know*, it is Ahmet's birthday tomorrow. I am going out to buy a present (for him).'

      c.   #HANI *yarın   Ahmet-in   doğum gün-ü-y-dü?*
           hani tomorrow Ahmet-GEN birth   day-POSS-COP-PST

           ≈ 'HANI was it Ahmet's birthday tomorrow?'

The following two examples show that Q-*hani* clauses presuppose that the belief that the prejacent is true held in the past rather than at the present. (8a) is a context where this requirement is satisfied and the Q-*hani* clause is just fine, (9a) is one that does not, and Q-*hani* is unacceptable.

(8)   a.   Context: Zeynep's vegan friend Ahmet wants to go out for dinner, and she tells him that there is a vegan restaurant nearby. After looking around for it and not finding it, Ahmet calls Zeynep and says:

      b.   HANI *burada vegan bir   restoran   var*(-dı)?*
           hani here   vegan one restaurant exist-PST

           ≈ 'Was there a vegan restaurant here? *We believed so*.'

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[6]A reviewer suggests to apply von Fintel's (2004) 'Hey, wait a minute test!' to provide an additional argument for the presence of the presupposition of *hani* clauses. However, this test is not intended to test the existence of a presupposition, but to distinguish presuppositions from assertions in what is conveyed by a sentence, where these two might be confused.

(9) a. Context: Ahmet is a vegan, and he is with Zeynep and Mehmet. While discussing where to eat lunch, Mehmet says that there is a vegan restaurant in his neighbourhood. Zeynep objects, stating that there is none there, but Ahmet trusts Mehmet, for it is his neighbourhood that they are talking about. However, once they arrive there, they find no vegan restaurant around. Ahmet says to Zeynep:

    b.   #HANI *burada vegan bir restoran var-dı?*
         hani here   vegan one restaurant exist-PST

       ≈ 'So, was there a vegan restaurant here? *We believed so.*'

In the context in (9a), Zeynep never believed the prejacent to be true. Accordingly, the sentence in (9b) addressed to Zeynep is inappropriate while it would not be so if it were addressed to Mehmet.

Given this, we take the above facts as evidence that the difference in felicity conditions between the two types of clauses lies in the time at which the beliefs of the participants of the conversation must hold, as summarized below.

(10) Let t be the time of the utterance,

    a. **D-*hani*** presupposes that speaker and addressee believe at t that the prejacent is true.

    b. **Q-*hani*** presupposes that speaker and addressee believed at some t′ prior t that the prejacent was true.

A second difference in felicity conditions between D-*hani* and Q-*hani* clauses is that D-*hani* clauses require a continuation, for which the content of the D-*hani* clause is relevant, instead Q-*hani* clauses can occur in isolation. This contrast is shown in (11).[7]

(11) a.   *Hani burada vegan bir restoran var (ya).* #*(Oraya*
        hani here   vegan one restaurant exist ya   there

        gid-ebil-ir-iz.)
        go-MOD-AOR-1.PL

       ≈ '*As we know*, there is a vegan restaurant here. #(We could go there.)'

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[7]We thank an anonymous reviewer who suggests a potential additional linguistic test to demonstrate the restriction that D-*hani* clauses occur with a follow-up utterance that picks up on their content. This finding is in support of our generalization in Sect. 2.2 that D-*hani* clauses are stage openers, always being followed by another utterance. Specifically, the reviewer suggests that the discourse particle *Ee?* 'So?' could be a felicitous reply to a D-*hani* clause uttered in isolation, further demonstrating this restriction of D-*hani* clauses. In addition, they point out that obvious utterances (part of CG), when occuring in isolation, legitimize the use of *Ee?*. Although we agree with the reviewer's intuitions, we believe that the function of *Ee?* is more general. According to our informants, *Ee?* is felicitous when following any conversational pause that seems out of place, perhaps too long. In a sense, *Ee?* is a remark conveying that it is not yet the time for turn-taking in the conversation, asking the speaker for a continuation. Given this general function of *Ee?*, it makes sense that it would be a felicitous response to a D-*hani* clause uttered in isolation.

b.   HANI *burada vegan bir restoran var-dı?*
     hani here   vegan one restaurant exist-PST

   ≈ 'Was there a vegan restaurant here? *We believed so.*'

2.2 Assertive components of *hani* clauses

In this section, we turn to the asserted component of *hani* clauses. According to our informants, D-*hani* clauses assert their prejacent. This makes D-*hani* clauses systematically "uninformative" (Stalnaker 1978, 1999, 2002). This is because these clauses also presuppose their prejacent. In this section, we argue that this unusual property of *hani* is precisely what triggers its reminding discourse effects. Intuitively, D-*hani* clauses are used as reminders and "stage openers" to legitimize an upcoming assertion as in the example (6), repeated in (12).

(12) a.   Context: You and Zeynep have a common friend, Ali, who went abroad last month, and both you and Zeynep are aware that he did.

      b.   *Hani Ali geçen ay   yurtdışına git-ti (ya). Hala ev*
           hani Ali last   month abroad   go-PST ya   still house
           bul-a-ma-mış.
           find-MOD-NEG-EVID

         ≈ '*As we know*, Ali went abroad last month. He has not been able to find a house there yet.'

We suggest that the speaker intentionally fails to be "informative" in uttering the *hani* clause in (12b), and indicates this much via the presupposition of *hani*. Notice that the speaker violates Grice's (1975) Maxim of Manner and Quantity 'be brief', as well as Stalnaker's conversational principle that what is presupposed cannot be asserted (i.e., $c + p \neq c$) with such an unorthodox move, which creates the inference that she has good reasons to do so.

What justifies these violations is the intention of the speaker to convey that an already existing shared belief is salient in that it is related and relevant to a more general point she is making (e.g., a suggestion or a piece of advice). In fact, this property of linguistic expressions has been investigated quite extensively in the literature on discourse particles/markers and in speech act theories. For example, Krifka (2017) explicitly states that Stalnaker's conversational principle is not a strict requirement on discourse, but might follow from a Gricean maxim.

Typically, updates like $c + A$ indicate that $com_c(A)$, the new commitments expressed by A, are not already present in c [...], otherwise there would be no point in performing A in the first place (the "first principle" in Stalnaker (1978)). However, we would not want to express this as a strict condition for

updates, [...]; rather, it should follow from Gricean reasons, perhaps as a consequence of the Maxim of Manner, "Be brief!". In fact, speakers repeat themselves, and often with good reasons, as they might assume that the commitments expressed by the speech act already be there, but still have to be stressed and made salient.   (Krifka 2017, p. 366)

Indeed, building on Döring's (2016) and Döring et al.'s (2019) claim regarding *ja* and *doch*, we suggest that one way to make a proposition salient is flagging the "uninformativity" of its utterance. In uttering a sentence that comes with the presupposition that essentially indicates that the information in the sentence is not new to the speaker and addressee, the speaker indicates to the addressee her awareness that she is violating a conversational principle. The intention of the speaker is for the addressee to suspend her potential reaction to the violation and to understand the purpose of it. In our cases, such purpose is to move the prejacent to the subset of salient propositions in the CG.

However, the question of why *hani* is obligatory in reminding uses still persists. In other words, why is it not enough to utter a CG proposition to create this pragmatic effect without *hani*, if indeed one can flout a conversational principle to make space for another discourse move? We believe that there are two reasons to opt for such a discourse marker/particle to create this effect. First, without *hani*, it may not be always obvious that the speaker is violating a conversational principle on purpose, rather than by accident. Second and more importantly, this pragmatic effect is mainly legitimized by Heim's 1991 proposed principle of *Maximize Presupposition!*. *Maximize Presupposition!* requires that among two equally informative utterances in a given context C, one will opt for the one with the strongest satisfied presupposition. Given that the context in (13a) entails that speaker and addressee are aware of the existence of a vegan restaurant around the location of speech, the item that carries this presupposition must be preferred over the one that lacks it. Accordingly, the contrast between (13b) and (13c) below is due the principle of *Maximize Presupposition!*.

(13) a. **Context:** Ayşe and Ahmet went to a vegan restaurant in their neighbourhood last month. Discussing what to eat tonight, Ahmet says:

   b. *Hani burada vegan bir restoran   var (ya). Oraya gidelim.*
       hani here   vegan one restaurant exist ya   there let's.go

       ≈'*As we know*, there is a vegan restaurant here. Let's go there.'

   c. *#Burada vegan bir restoran   var. Oraya gidelim.*
       here   vegan one restaurant exist there let's.go

       ≈'There is a vegan restaurant here. Let's go there.'

An important note is in order at this point. Given our claim that D-*hani* clauses assert what is already believed to be true, an anonymous reviewer indicates that we

predict that they are L-trivial, in the sense of Gajewski (2002a), and therefore ungrammatical. However, we do not believe that we make such a prediction; here is why. According to Gajewski (2002a,b), a sentence is L-trivial if its L-skeleton is always true (or false); that is, if the sentence is true (or false) under any substantial "rewriting of it", where substantial rewritings substitute every non permutation-invariant expression in its LF with variables. The lexical entry we propose for *hani* is *not* permutation-invariant, given that the truth of belief attributions depends on the world/time of evaluation, as well as the subject of the attribution. Hence, the LF skeletons of D-*hani* clauses are not predicted to result in a tautology. Less technically, according to our analysis, D-*hani* clauses are not predicted to be always true, as they can very well be undefined. In other words, just like many other cases of "uninformative" sentences Gajewski discusses in his work, D-*hani* clauses might flout the maxim of Quantity/Manner or violate Stalnaker's conversational principle to generate certain pragmatic effects—e.g., making salient a CG proposition—but are not ungrammatical.

What justifies the redundancy of the assertion of D-*hani* clauses is its function of making the proposition in the CG salient since not all beliefs belonging to the CG are salient or active in a given discourse (see Karagjosova 2004). In more formal terms, one might devise a system where D-*hani* sentences move a CG proposition to a subset of the CG including only the salient and active ones.

Needless to say, there have been many other proposals introducing distinct structurings of the CG (see Krifka 2001, 2011, 2015, 2017, Farkas and Bruce 2009, Eckardt 2016). Others have argued that one must posit a distinct dimension to account for the pragmatic effects brought up by the use of discourse markers, such as expressive dimension (Gutzmann 2009, 2013). In this paper, we do not commit to any specific one of the above-mentioned views on saliency, and leave a refinement of this sort to further research.

In addition, Kratzer's work on German discourse particles indicates that assertions of redundant propositions with those particles can be employed as "stage-openers" or grounds for an upcoming argument or comments (Kratzer 2004), which is also what we observed for D-*hani* clauses in the previous section.

Turning now to Q-*hani* clauses, they differ from D-*hani* ones in their assertive component. In the remainder of this section, we illustrate evidence supporting our proposal that Q-*hani* clauses denote questions, while D-*hani* clauses are declaratives. The first piece of evidence is the behaviour of *hani* clauses under quotational embedding.[8] As the baseline triple in (14) shows, a polar and a *wh*-question can complement the noun 'question' while a declarative clause cannot.

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[8]We use quotational embedding because *hani* clauses are otherwise non-embeddable.

(14) a. *"Ali gel-di   mi?" soru-su   beni çok   rahatsız*
         Ali   come-PST Q   question-POSS me   much uncomfortable
         et-ti.
         do-PST

         'The question "Did Ali come?" made me very uncomfortable.'

    b. *"Ali ne   zaman gel-di?"   soru-su   beni çok*
         Ali   what time   come-PST question-POSS me   much
         rahatsız   et-ti.
         uncomfortable do-PST

         'The question "When did Ali come?" made me very uncomfortable.'

    c. # *"Ali gel-di."   soru-su   beni çok   rahatsız et-ti.*
         Ali   come-PST question-POSS me   much uneasy do-PST

         # 'The question "Ali came" made me very uncomfortable.'

We use this as a test to diagnose the clause type associated with *hani* clauses. As the data in (15) show, Q-*hani* clauses are grammatical in the test configuration, whereas D-*hani* clauses are not. We take these data to suggest that Q-*hani* clauses denote questions, while D-*hani* clauses denote declaratives.[9]

(15) a. *"HANI Ali gel-miş-ti?"   soru-su   beni çok   rahatsız*
         hani   Ali come-ANT-PST question-POSS me   much uneasy
         et-ti.
         do-PST

         ≈ The question "Did Ali come? *We believed so*." made me very un-
         comfortable.

    b. # *"Hani Ali gel-di   (ya)." soru-su   beni çok   rahatsız*
         hani   Ali come-PST ya   question-POSS me   much uneasy
         et-ti.
         do-PST

         # The question "*As we know*, Ali came." made me very uncomfort-
         able.

A second kind of diagnostics is what we call the "what kind of question is this?"-test. It is natural to react to the utterance of a question with the comment "What kind of question is this?", whilst this reaction is not appropriate in the case of declarative sentences. This is illustrated in the baseline triple in (16), (17) and (18).

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[9]We thank one of the anonymous reviewers for suggesting this test.

(16)   a.   *Nurcan: Dün   ne   giy-di-n?*
                      yesterday   what   wear-PST-2.SG

             'What did you wear yesterday?'

       b.   *Nuran: Ne   biçim bir   soru   bu   böyle?*
                    what   kind one   question this   such

             'What kind of question is this?'

(17)   a.   *Nurcan: Dün   etek   giy-di-n   mi?*
                      yesteday   skirt wear-PST-2.SG Q

             'Did you wear a skirt yesterday?'

       b.   *Nuran: Ne   biçim bir   soru   bu   böyle?*
                    what   kind one   question this   such

             'What kind of question is this?'

(18)   a.   *Nurcan: Dün   etek   giy-di-n.*
                      yesterday skirt wear-PST-2.SG

             'You wore a skirt yesterday.'

       b.   *Nuran: #Ne   biçim bir   soru   bu   böyle?*
                    what   kind one   question this   such

             # 'What kind of question is this?'

Q-*hani* clauses are compatible with "What kind of question is this?", whereas D-*hani* clauses are not. This contrast is shown in (19) and (20).[10]

(19)   a.   *Nurcan:* HANI *dün   etek   giy-miş-ti-n?*
                      hani   yesterday skirt wear-ANT-PST-2.SG

             'Did you wear a skirt yesterday?' *We believed so.*

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[10]The comment "What kind of question is this?" can target the initial question, even when the speaker's last utterance is a declarative sentence. This is shown in (i).

   (i)   a.   *Nurcan: Dün   balo-ya   git-ti-n   mi? Çok   güzel-miş   dedi-ler.*
                       yesterday ball-DAT go-PST-2.SG   Q   much good-EVID   say-PL
              'Did you attend the ball yesterday? Apparently, it was really good!'

         b.   *Nuran: Ne   biçim bir   soru   bu   böyle? Tabii   ki   git-ti-m.*
                     what   kind one   question this   such   surely that go-PST-1.SG
              'What kind of question is this? Of course I did.'

b. *Nuran: Ne   biçim bir soru   bu böyle?*
        what kind one question this such

'What kind of question is this?'

(20) a. *Nurcan: Hani dün   etek giy-di-n   (ya). Çok şık*
        hani yesterday skirt wear-PST-2.SG ya   much elegant

    ol-muş-tu-n.
    become-ANT-PST-2.SG

≈ '*As we know*, you wore a skirt yesterday. You were very elegant.'

b. *Nuran: #Ne biçim bir soru   bu böyle?*
        what kind   one question this such

#'What kind of question is this?'

Whereas the data above merely indicates a difference in the type of assertion between Q-*hani* and D-*hani*—interrogative and declarative, respectively—within the analysis below, we make the stronger assumption that Q-*hani* clauses are polar questions. Adding this assumption to the results from this section, we conclude the following:

(21) Let t be the time of the utterance and p the prejacent,

    a. **D-*hani* clauses**
        (i) ASSERTION: p
        (ii) PRESUPPOSITION: that speaker and addressee believe at t that p is true.

    b. **Q-*hani* clauses**
        (i) ASSERTION: p?
        (ii) PRESUPPOSITION: that speaker and addressee believed at t' prior to t that p was true

What lends plausibility to the assumption that Q-*hani* clauses are questions of the *yes/no* variety is that it implies the minimum amount of covert material and the absence of just one item typically present in polar questions in Turkish, which is *mI* (see Aygen 2007, Özyıldız 2015, Kamali and Krifka 2020, and the references therein on the question particle in Turkish).[11]

We conclude this section, discussing and rejecting the option that Q-*hani* clauses express *why-did-you-tell-me-p?* kind of interrogatives. Given its challenging function, one might wonder if the Q-*hani* clause in (22b) is semantically equivalent to *why did you tell me that there is a vegan restaurant here*.

---

[11]This assumption might be challenged as the intonational contour of these clauses is typical of Turkish *wh*-questions (Göksel et al. 2009). However, mismatches between form and meaning of this sort are predicted in a Y model theoretic view of grammar (Chomsky 1995). Mismatches are addressed in interfaces of the grammar: (i) by realizations rules in the morphology component (Halle and Marantz 1993) and (ii) by LF operations in the logical component (Heim and Kratzer 1998).

(22) a. Context: Ahmet is a vegan, and he is with Mehmet. While discussing
           where to eat lunch, Mehmet says that there is a vegan restaurant in
           his neighbourhood. However, once they arrive there, they find no vegan
           restaurant around. Mehmet says:

      b. HANI *burada vegan bir restoran   var-dı?*
          hani here   vegan one restaurant exist-PST

Besides assuming that the LF of (22b) contains a large amount of unpronounced
linguistic material, there is empirical evidence against this hypothesis. The data below
are sufficient to refute this hypothesis.

(23) a. *Bana neden ödev-im-i   yap-tı-m   de-di-n?*
          me   why homework-POSS.1.SG-ACC do-PST-1.SG tell-PST-2.SG

          'Why did you tell me "I did my homework"?'

      b. *Kız-ma-ma-n   için...*
          get.angry-NMZ-NEG-POSS-2.SG for

          '... so that you would not get angry.'

(24) a. HANI *ödev-in-i   yap-mış-tı-n?*
          hani homework-POSS-ACC do-ANT-PST-2.SG

          'Did you do your homework? *We believed so.*'

      b. # *Kız-ma-ma-n   için...*
          get.angry-NMZ-NEG-POSS-2.SG for

          '... so that you would not get angry.'

Although a common response to a *why-did you-tell-me-p* question is an explana-
tion (see (23b)), Q-*hani* clauses are incompatible with such replies, as illustrated in
(24b).

The contrast shows that Q-*hani* clauses do not logically express a meaning equiva-
lent to a *why-did-you-tell-me-p?* question, and is compatible with our assumption that
they denote polar questions. The formal details of their composition are illustrated in
Sect. 3.

We believe that our conclusions regarding the distinct assertive component of D-
hani clauses and Q-*hani* clauses proposed in this section provide an account for the
facts discussed at the end of the previous section; that is, the unacceptability of D-
hani clauses in isolation versus the ability of Q-*hani* clauses to occur on their own.
Indeed, given the redundant nature of D-*hani* clauses, they can have a pragmatic
function only in the presence of a continuation, as discussed above. However, Q-*hani*
clauses are not redundant, as their past presupposition is compatible with a genuine
yes/no question regarding the truth of the prejacent at the time of the utterance.

2.3 *Hani* clauses and the past tense morpheme

As we previously stated, past tense morphology is obligatory in Q-*hani* clauses. However, we have not considered its contribution to the sentence thus far. This section presents evidence that the overt past tense in D-*hani* clauses affects the time of the prejacent as expected, while in Q-*hani* clauses it manipulates the time of the beliefs that are part of the presupposition by inducing an indexical shift. More concretely, we argue that the overt past tense makes a meaningful difference between (25a) and (25b), although they look stringwise identical, modulo intonation.

(25)   a.   *Hani burada vegan bir restoran var-dı   (ya).*
            hani here   vegan one restoran exist-PST

            ≈ '*As we know*, there was a vegan restaurant here.'

       b.   HANI *burada vegan bir   restoran   var-dı?*
            hani here   vegan one restoran exist-PST

            ≈ 'Was there a vegan restaurant here? *We believed so.*'

Let us first consider the case of D-*hani* clauses. In (25a), the past tense locates the eventuality at a past time, and therefore expresses that there was a vegan restaurant then. The following example confirms this much.

(26)   a.   **Context:** Ali is enrolled in a PhD program abroad, but has been in Istanbul on a summer break for exactly three months at the moment of speech, which both Ahmet and Zeynep are aware of. Zeynep learns that he is leaving soon and says:

       b.   *Hani Ali üç   ay-dır   İstanbul-da (ya). Hafta-ya*
            hani Ali three month-for Istanbul-LOC ya   week-DAT

            okul-u   başl[a]-ıyor-muş.   Git-me-den   onu bir kez
            school-POSS start-IMPERF-EVID go-NEG-ABL him one time

            gör-elim.
            see-OPT.1.PL

            ≈'*As we know*, Ali has been in Istanbul for three months. His school starts next week (I heard). Let us meet him before he leaves.'

       c.   #*Hani Ali üç   ay-dır   İstanbul-da-y-**dı**   ya. Hafta-ya*
            hani Ali three month-for Istanbul-LOC-COP-**PST** ya   week-DAT

            okul-u   başl[a]-ıyor-muş.   Git-me-den   onu bir kez
            school-POSS start-IMPERF-EVID go-NEG-ABL him one time

            gör-elim.
            see-OPT.1.PL

            ≈'*As we know*, Ali had been in Istanbul for three months. His school starts next week (I heard). Let us meet him before he leaves.'

Since in (26a), Ali's state of being in Istanbul extends to the speech time, and it has lasted three months at the moment of speech, the past tense morpheme in the prejacent of the D-*hani* clause is not acceptable. This is because the use of the past tense in the prejacent causes the D-*hani* clause in (26c) to express that Ali's three-month stay extended to and ended at a past time, however, this would mean that even if Ali's stay in Istanbul continues, it would exceed the three month period at the speech time, which contradicts the contextual information. Notice that this makes (26c) a presupposition failure, and not false, because as mentioned in Sect. 2.1, D-*hani* clauses presuppose their prejacent, and the prejacent of (26c) is false in (26a). The data therefore indicate that the past tense receives its ordinary scope and interpretation in D-*hani* clauses.

There is an apparent counterexample to this claim. Consider the example in (27). Although the predicate in (27b) carries a past tense morpheme, speaker and addressee appear to believe that there currently is a vegan restaurant at the location of speech.

(27)   a.   **Context:** Ahmet has a vegan friend, Zeynep, who says that she is hungry. Ahmet tells Zeynep that there is a vegan restaurant nearby. Zeynep goes to that vegan restaurant. After one month, when Ahmet and Zeynep are planning to eat dinner outside, Zeynep says to Ahmet:

       b.   *Hani   burada   vegan   bir   restoran   var-**dı**   (ya).   Oraya*
            hani   here   vegan   one   restaurant   exist-PST   ya   there

            gid-ebil-ir-iz.
            go-MOD-AOR-1.PL

            ≈ *As we know*, there was a vegan restaurant here. We could go there.

Moreover, individual level predicates like the existential in (27b) are known to trigger an inference of non-existence of their argument when uttered out of context (Kratzer 1995). For example, in (28), Gregory is understood to be dead.

(28)   a.   Gregory was from America.
       b.   Gregory had blue eyes.   (Musan 1997, p. 271).

However, the counter-example is only apparent. As Musan (1997) rightly points out, the inference of non-existence (life-time effects, in her terminology) disappears once sentences like (28) are parts of larger linguistic contexts (see (29)).

(29)   (Musan 1997, p. 272)

       a.   On that day, I was introduced to Gregory and Eva-Lotta. Gregory was from America, and Eva-Lotta was from Switzerland.
       b.   I had a chance to have a closer look at him. Gregory had blue eyes.

In light of Musan's (1997) discussion, the facts in (27) can be explained away. According to Musan (1997), contexts like (29) introduce a past encounter of the speaker with the person in question. Therefore, the past tense on the individual level predicate in the subsequent sentence seems to refer to that past experience. Informally speaking then, a sentence like (29b) conveys that there is a time t′ before the speech time t, and

the speaker had a chance to have a closer look at Gregory at t', and he had blue eyes at t'. Crucially, such a statement does not provide any information with respect to the current existence of the subject in question. In other words, it says nothing in regards to whether Gregory is dead or alive now.

Analogously, the past tense in (27b) refers to the past experience of the participants of the conversation with the vegan restaurant in question. Considering that there is no evidence that the vegan restaurant is closed now, the speakers can easily infer that it still exists, even though this is not part of the assertion.

An additional piece of evidence suggesting that the past tense morpheme in D-*hani* clauses like (27b) provides the evaluation time of the proposition comes from the following observation. Recall that D-*hani* clauses presuppose the truth of their prejacent. If the past tense in (27b) were not part of the proposition expressed in the prejacent, what would be taken for granted would be the proposition that there currently is a vegan restaurant at the location of speech. Therefore, a follow-up clause asserting that it does not exist anymore would sound contradictory. To illustrate, the example in (30) is infelicitous, because (30b) presupposes that there is a vegan restaurant at the location of speech, which excludes asserting that it does not exist.

(30) a. **Context:** Zeynep and Ahmet live in the same neighbourhood, and they both know that there is a vegan restaurant there. Zeynep says to Ahmet:

b. *Hani burada vegan bir restoran var   (ya). #(Artık*
   hani here   vegan one restaurant exist.PRES ya   anymore
   yok.)
   not.exist.PRES

≈'*As we know*, there is a vegan restaurant here. #(It is closed now.)'

In contrast, the version of (30b) with past tense is felicitous.

(31) a. **Context:** Ahmet has a vegan friend, Zeynep, who says that she is hungry. Ahmet tells Zeynep that there is a vegan restaurant nearby. Zeynep goes to that vegan restaurant. After one month, when Ahmet and Zeynep are planning to eat dinner outside, Zeynep says to Ahmet:

b. *Hani burada vegan bir restoran var-dı   (ya). Artık*
   hani here   vegan one restaurant exist-PST ya   there
   yok.
   go-MOD-AOR-1PL

≈ '*As we know*, there was a vegan restaurant here. It is closed now.'

Hence, we argue that the *hani* clause in (27b) and (31b) presuppose that there *was* a vegan restaurant at the location of speech, and it remains vague as to its current existence. What it is not vague about is the past existence of the restaurant, which cannot be denied felicitously (see 32).

(32)   #*Hani   burada   vegan   bir   restoran   var-dı   (ya).   Ali   yok*
          hani   here   vegan   one   restaurant   exist-PST   ya   Ali   exist.NEG

          de-miş-ti.   Belki   de   haklı-y-dı.
          say-ANT-PST   perhaps   also   right-COP-PST

          ≈ '*As we know*, there was a vegan restaurant here. Ali had said that there
          wasn't one. Perhaps he was right.'

Let us now turn to the function of the past tense in Q-*hani* clauses. In the remainder
of this section, we observe that the obligatory past tense morpheme occurring in
them does not directly locate the eventuality of the preajcent at a past time, but it
shifts the belief time of the speaker and addressee in the presupposition.[12] Given this,
we predict that entertaining the possibility that the prejacent is false at the time of
utterance does not lead to a contradiction unlike what we observed in D-*hani* clauses
in (32). This prediction is also borne out, as illustrated in (33).

(33)   HANI   *burada   vegan   bir   restoran   var-dı?   Ali   yok*
          hani   here   vegan   one   restaurant   exist-PST   Ali   exist.NEG-PST

          de-miş-ti.   Belki   de   haklı-y-dı.
          say-ANT-PST   perhaps   also   right-COP-PST

          ≈ 'Was there a vegan restaurant here after all? *We believed so*. Ali had said
          there wasn't one. Perhaps he was right.'

In Sect. 3.2, we show that the shift in the presupposition of *hani* results from a shift
in the local context time at which the *hani* + prejacent is interpreted. The prejacent
of *hani* being contained in this constituent is also affected by this shift.

The examples discussed so far involve non-verbal predicates. Before concluding
this section, we would like to point out that the obligatoriness of the past tense mor-
phology in Q-*hani* clauses extends to cases in which the predicate is verbal. Consider
the examples in (34).

(34)   a.   HANI   *Ali   gel-iyor-*(du)?*
                  HANI   Ali   come-IMPERF-PST

                  ≈'Was Ali coming? *We believed so*.

          b.   HANI   *Ali   gel-miş-*(ti)?*
                  HANI   Ali   come-ANT-PST

                  ≈'Did Ali come? *We believed so*.

          c.   HANI   *Ali   gel-ecek-*(ti)?*
                  HANI   Ali   come-FUT-PST

                  ≈'Would Ali come? *We believed so*.

Notice that aspectual markes on verbal predicates are obligatory in Q-*hani* clauses. We consider this to lend morphological support to our conclusion that the past tense behaves differently in the two uses of *hani*. Indeed, aspect can be morphologically absent in D-*hani* clauses with verbal predicates marked with the past tense. This contrast is shown in (35).[13]

(35) a. *HANI *Ali gel-di?*
         hani   Ali come-PST

     b. *Hani Ali gel-di   (ya).*
         hani Ali come-PST ya

        ≈'*As we know*, Ali arrived.'

In sum, in this section, we observed a sharp contrast between D-*hani* and Q-*hani* clauses in relation to the contribution of the past tense morphology. While the past tense is interpreted as expected in D-*hani* clauses, its contribution in Q-*hani* clauses is unusual. In the next section, we provide an analysis explaining the unexpected semantics of past tense in Q-*hani* clauses, after introducing our proposal for the semantics of *hani* in D-*hani* ones.

3 A compositional analysis of *hani* clauses

3.1 D-*hani* clauses

In the previous discussion, we concluded that D-*hani* clauses presuppose that speaker and addresee believe the prejacent to be true. We propose that this presupposition is encoded as a definedness condition in the lexical entry of *hani* as illustrated in (36).

(36) For any quintuple $\langle w_c, t_c, s_c, a_c, g_c \rangle$,
     $[\![\text{hani}]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle} = \lambda p_{\langle s, t \rangle}$: $\forall w''$ s.t. w'' is compatible with what s_c and a_c believe in w_c at t_c, $p(w'') = 1$. p

We relativize the lexical entry of *hani* to the context of utterance, which we represent as a quintuple consisting of the context world (w_c), context time (t_c), the speaker in the context (s_c), the addressee in the context (a_c) and the assignment function (g_c). These variables are used to refer to context variables throughout the paper.

According to (36), *hani* leaves the assertion unchanged and introduces the expressive presupposition that speaker and addressee of the conversation at the time of the conversation believe the prejacent to be true.

As an illustration, we provide below an example of a semantic computation of a D-*hani* clause, where we apply the lexical entry above.

Let us start by stating our basic semantic assumptions relative to a sentence without *hani* like (37a). We represent the structure of (37a) as in (37b).

---

[13]Due to the additional complexity of the verbal predicates in Q-*hani* clauses, our sample calculations involve sentences with non-verbal predicates, as an analysis of aspect is not crucial to the claims of this paper.

(37) a. *(Dün)   Ali İstanbul-da-y-dı.*
          yesterday Ali Istanbul-LOC-COP-PST

          'Ali was in Istanbul (yesterday).'

      b.
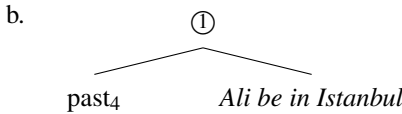
In the interest of keeping our derivations simple, we skip some of the details of the internal composition of the proposition expressed by the prejacent. The reader should notice, however, that we assume that the sister of the tense head denotes a function from times to propositions (see (38b)). Moreover, we adopt Heim's (1994) presuppositional rendition of Partee's (1973) referential account of tense, as shown in (38a).[14]

(38) For any quintuple $\langle w_c, t_c, s_c, a_c, g_c \rangle$,

      a. $[\![\text{past}_4]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle}$ is defined iff $g(4) < t_c$,
          if defined then $[\![\text{past}_4]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle} = g(4)$

      b. $[\![\text{Ali be in Istanbul}]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle} = \lambda t'. \lambda w'.$ A. is in Istanbul at t' in w'

      c. $[\![①]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle}$ is defined iff (i) and (ii)

                                                          (by Function Application)[15]

      i. $[\![\text{past}_4]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle}$ and $[\![\text{Ali be in Istanbul}]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle}$ are defined

      ii. $[\![\text{past}_4]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle} \in \text{dom}([\![\text{Ali be in Istanbul}]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle})$
          therefore defined iff $g(4) < t_c$ (by (38a))

      d. If defined, $[\![①]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle} = \lambda w'.$ Ali is in Istanbul at $g(4)$ in w'

Now that we have laid out our basic theoretical assumptions, we can provide our analysis of D-*hani* clauses. We suggest that a D-*hani* clause minimally consists of a tensed proposition (contributed by the denotation of the prejacent) and *hani*.[16]

(39) a. *Hani (dün)   Ali İstanbul-da-y-dı   (ya).*
          hani yesterday Ali Istanbul-LOC-COP-PST ya

          '*As we know*, Ali was in Istanbul (yesterday).'

---

[14]Besides the referential anaphoric view that we adopt above, there is another main view on the semantics of past where it introduces an existential quantification with contextual domain restrictions (see Ogihara 2007). Our proposal is compatible with the existential quantification view of the past tense proposed by Ogihara (2007) as well.

[15]See Heim and Kratzer (1998, p. 76, ex (9)).

[16]Given that the particle *ya* is optional, we do not include it in our structural representation. One might treat it as an identity function over propositions.
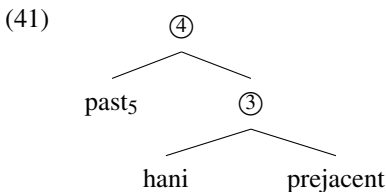
b.

$$
\begin{array}{c}
② \\
\diagup\diagdown \\
\text{hani} \qquad ① \\
\diagup\diagdown \\
\text{past}_4 \qquad \textit{Ali be in Istanbul}
\end{array}
$$
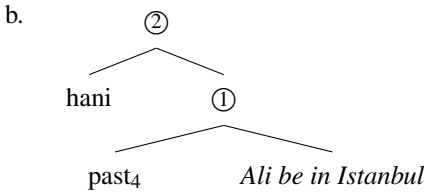
In (40), we provide a sample derivation of the assertion and presuppositions for (39).

(40)   For any quintuple $\langle w_c, t_c, s_c, a_c, g_c \rangle$,

    a. $[\![②]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle}$ is defined iff (i) and (ii)

    i. $[\![\text{hani}]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle}$ and $[\![①]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle}$ are defined

    ii. $[\![①]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle} \in \text{dom}([\![\text{hani}]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle})$
therefore defined iff $g(4) < t_c$ (from (38c))
and $\forall w''$ s.t. w'' is compatible with what s_c and a_c believe in w_c at t_c, Ali is in Istanbul at $g(4)$ in w''

    b.   If defined, $[\![②]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle} = \lambda w'.$ Ali is in Istanbul at $g(4)$ in w'

As desired, according to (40), a D-*hani* clause is true only if the prejacent is true and carries the presupposition that speaker and addressee of the context already believe at the time of utterance that the prejacent is true; it is undefined otherwise. Therefore, the meaning that we ascribe to *hani* captures the restrictions on D-*hani* clauses. First, *hani* is acceptable only in contexts where speaker and addressee believe the prejacent to be true (see the discussion in Sect. 2). Second, considering that the speaker chooses an item expressing the presupposition that the interlocutors of the conversation already believe the prejacent to be true, its assertive component is *per se* "uninformative", in the sense that it does not add a new proposition to the CG. Given this, it can only be uttered in the presence of a relevant and novel continuation.

3.2 Q-*hani* clauses

We are now in the position to turn to our analysis of Q-*hani* clauses. Here, we present our three main assumptions regarding them. Their application to an example is in Sect. 3.3. As we pointed out in Sects. 1 and 2.3, in Q-*hani* clauses the past tense manipulates the belief's time within the presupposition of *hani*. In order to derive this effect, our first assumption regards the structural position of the overt past tense morpheme at the LF of these clauses. Specifically, the past tense scopes above the entire *hani* clause, as shown in (41).

(41)

$$
\begin{array}{c}
④ \\
\diagup\diagdown \\
\text{past}_5 \qquad ③ \\
\diagup\diagdown \\
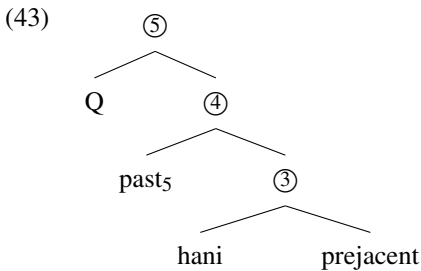\text{hani} \qquad \text{prejacent}
\end{array}
$$

Our assumptions in regards to the interpretation of *hani* and the interpretation of the past tense are the same as introduced in the previous section. Specifically, the denotation of ③ is a proposition ($\langle s,t \rangle$), whereas the past morpheme denotes a contextually salient time (of type i). This alone would lead to a type mismatch in (41). In order to resolve this mismatch and guarantee a shift in the belief's time in the presupposition, our second assumption is the following. We suggest that the mismatch is resolved by the semantic rule given in (42), which has two main effects: **(i)** it generates from ③ a predicate abstract over the contextual time variable of ③, thus making it shiftable and **(ii)** it projects the presuppositions of the prejacent onto the larger constituent (see Santorio 2010 for a similar monstrous function application rule abstracting over g_c).

(42) **Monstrous Function Application (MFA)**
If α is a branching node and $\{\beta, \gamma\}$ the set of its daughters, and for any context $\langle w_c, t_c, s_c, a_c, g_c \rangle$, $[\![\gamma]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle} \in \text{dom}(\lambda t': \beta \in \text{dom}([\![\ ]\!]^{\langle w_c, t', s_c, a_c, g_c \rangle})$. $[\![\beta]\!]^{\langle w_c, t', s_c, a_c, g_c \rangle})$, then $[\![\alpha]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle} = [\lambda t': \gamma \in \text{dom}([\![\ ]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle}) \wedge \beta \in \text{dom}([\![\ ]\!]^{\langle w, t', s, a, g \rangle})$. $[\![\beta]\!]^{\langle w_c, t', s_c, a_c, g_c \rangle}]([\![\gamma]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle})$

Lastly, as mentioned above, in order to account for their challenging function, our proposal is to analyze Q-*hani* clauses as *yes/no* questions (see Sect. 2.2). Given this, we assume that their LF structure includes a silent *whether or not*, which we abbreviate as Q. This is shown in (43).

(43)

```
          ⑤
        /    \
       Q      ④
            /    \
        past₅     ③
                /    \
             hani   prejacent
```

3.3 Formal implementation

In this subsection, we illustrate how the assumptions that we just laid out apply to a particular example. Before doing so, a brief discussion about the tense of the prejacent is at stake. Specifically, in assuming that the overt past morpheme scopes above *hani*, we do not intend to imply that the prejacent itself is tenseless. Tense in the prejacent is not absent; it is just unpronounced. Let us consider again the following example.

(44) HANI *Ali İstanbul-da-y-dı?*
     hani   Ali Istanbul-LOC-COP-PST

We argue that (44) is ambiguous between a present and a past prejacent as the glosses in (45a) and (45b), respectively, illustrate.

(45) a. HANI *Ali İstanbul-da-Ø-y-dı?*
      hani Ali Istanbul-loc-PRES-cop-pst

    b. HANI *Ali İstanbul-da-Ø-y-dı?*
      hani Ali Istanbul-loc-PST-cop-pst

On the one hand, the fact that the present tense in the prejacent of (45a) is silent is unsurprising given that present tense in Turkish is unmarked, as illustrated in (46).

(46) *Ali İstanbul-da-Ø.*
    Ali Istanbul-LOC-PRES

    'Ali is in Istanbul.'

On the other hand, the interpretation in (45b) involving a second past morpheme that is not pronounced is less obvious. As stipulative as it might sound, the fact that a past tense morpheme is deleted at PF is not uncommon in Turkish. There are at least two other configurations in which this happens. The first consists of sentences involving the evidential marker *-mIş*. Consider the example below and its potential interpretations.[17]

(47) *Ali (dün/şimdi)   gel-iyor-muş.*
    Ali yesterday/now come-IMPERF-EVID

    ≈ 'Ali was/is coming (yesterday/now) as I heard.'

Crucially, under the past tense interpretation, Turkish cannot overtly mark the past tense morphology on the verb when it co-occurs with the evidential morpheme as shown in (48b).

(48) a. *Ali (dün)   gel-iyor-du.*
      Ali yesterday come-IMPERF-PST

      ≈ 'Ali was coming (yesterday).'

    b. **Ali (dün)   gel-iyor-du-muş/gel-iyor-du-y-muş.*
      Ali yesterday come-IMPERF-PST-EVID/come-IMPERF-PST-COP-EVID

      Int: 'Ali was coming (yesterday) as I heard.'

The second case of past deletion is observed in counterfactual conditionals. Turkish marks counter-factuality with a past tense suffix, which comes right after the conditional suffix *-sA*.

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[17]*-mIş* exhibits a curious behavior in Turkish. When it follows non-verbal predicates and aspectually marked verbs, it is an evidential marker, as shown in (47), whereas it marks anterior aspect when it precedes a tense morpheme. We remain agnostic as to whether the two meanings of *-mIş* should be related or are independent entries in the lexicon.

(49)   *Ali (dün/şimdi)*   *kitab-ı*   *oku-sa-y-**dı**,*   *hikaye-yi öğren-ir-di.*
      Ali yesterday/now book-ACC read-CON-COP-PST story-ACC learn-AOR-PST

      'If Ali had read/were reading the book (yesterday/now), he would have learned/would be learning its plot.'

Notice that (49) is ambiguous between a past and a present counterfactual reading, as its compatibility with *dün* 'yesterday' and *şimdi* 'now' shows. Crucially, disambiguation via an overt past marker on the antecedent predicate is ungrammatical, as shown in (50).

(50)   ***Ali* *dün*   *kitab-ı*   *oku-**du**(-y)-sa-y-**dı**,*   *hikaye-yi*
      Ali yesterday book-ACC read-PST-COP-CON-PST, story-ACC

      öğren-ir-di.
      learn-AOR-PST

      Int: 'If Ali had read the book yesterday, he would have learned its plot.'

This is different from what happens in factual conditionals, where overt past marking on the predicate in the antecedent is not just possible but obligatory to express a past antecedent, as exemplified in (51).

(51)   *Ali dün*   *kitab-ı*   *oku-**du**-y-sa,*   *hikaye-yi öğren-miş-tir.*
      Ali yesterday book-ACC read-PST-COP-CON, story-ACC learn-ANT-MOD

      'If Ali did read the book yesterday, he must have learned its plot.'

The conditional data is in direct support of our claim that in Turkish, a past tense morpheme is deleted at PF when it co-occurs with another past tense morpheme in the same predicate, as in (45b).

Having established that in (44), repeated below in (52a), the tense of the prejacent can be past, let us turn to our illustration of the formal details of this case first. We will return to the present interpretation of the prejacent afterwards.

(52)   a.   HANI *Ali İstanbul-da-y-dı?*
          hani   Ali Istanbul-LOC-COP-PST

       b.
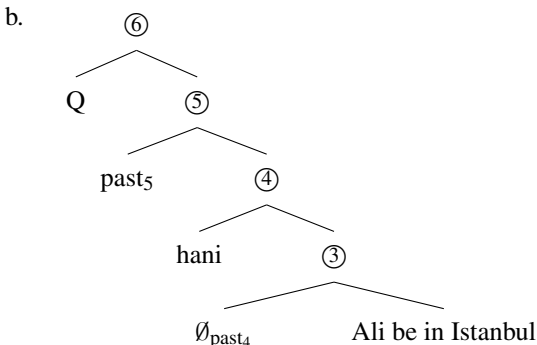
Since the constituent labelled ④ is identical to the one labelled ② in the section on D-*hani* clauses, modulo the pronunciation of the past tense morpheme, its denotation is as given in (53), repeated from (40) above.

(53) For any quintuple $\langle w_c, t_c, s_c, a_c, g_c \rangle$,

    a. $[\![④]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle}$ is defined iff (i) and (ii)

    i. $[\![\text{hani}]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle}$ and $[\![③]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle}$ are defined

    ii. $[\![③]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle} \in \text{dom}([\![\text{hani}]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle})$
    therefore defined iff
    $g(4) < t_c$ (from (38c))
    and $\forall w''$ s.t. w'' is compatible with what s_c and a_c believe in w_c at t_c, Ali is in Istanbul at $g(4)$ in w'' (from step (40ii))

    b.   If defined, $[\![④]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle} = \lambda w'.$ Ali is in Istanbul at $g(4)$ in w'

Due to the type mismatch mentioned above, the denotation of ⑤ is derived by the Monstrous Function Application proposed in (42), as shown in (55). The past tense denotation is repeated in (54) for convenience. Notice that what changes now is the contextual time at which the presupposition of *hani* + prejacent must hold, which is first bound (t') and then applied to the past tense $g(5)$.

(54) $[\![\text{past}_5]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle}$ is defined iff $g(5) < t_c$,
       if defined then $[\![\text{past}_5]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle} = g(5)$

(55) a. $[\![⑤]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle} = [\lambda t': \text{past}_5 \in \text{dom}([\![\ ]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle}) \wedge ④ \in \text{dom}([\![\ ]\!]^{\langle w, t's, a, g \rangle}). [\![④]\!]^{\langle w, t's, a, g \rangle}]([\![\text{past}_5]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle})$ (by MFA)

    b. $[\![⑤]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle}$ is defined iff
    $\text{past}_5 \in \text{dom}([\![\ ]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle})$ and $④ \in \text{dom}([\![\ ]\!]^{\langle w_c, g(5), s_c, a_c, g_c \rangle})$
    iff $g(5) < t_c$ and $g(4) < g(5)$ and $\forall w''$ s.t w'' is compatible with what s_c and a_c believe in w_c at $\mathbf{g(5)}$, Ali is in Istanbul at $g(4)$

    c.   If defined, $[\![⑤]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle} = \lambda w'.$ Ali is in Istanbul at $g(4)$ in w'.

As for the denotation of Q, we assume that it is a function that takes a proposition and returns the set of propositions including the argument and its negation.[18]

(56) $[\![Q]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle} = \lambda p. \lambda q. q = p \vee q = \lambda w'''. p(w'') = 0$

Hence, applying the meaning of Q to the denotation of ⑤ via FA results in the meaning of ⑥, which, when defined, is a set of the propositions *that Ali was in Istanbul* and *that Ali was not in Istanbul*.

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[18]In Karttunen (1977), this is achieved in two steps: by the meaning of a Q morpheme, and the meaning of *whether-or-not*. We combined the two in one lexical item in the interest of simplicity.

(57) a. $[\![⑥]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle}$ is defined iff $g(4) < \mathbf{g(5)}$ and $g(5) < t_c$ and $\forall w''$ s.t w'' is compatible with what s_c and a_c believe in w_c at $\mathbf{g(5)}$, Ali is in Istanbul at $g(4)$ in w'', and

    b. If defined, $[\![⑥]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle} = \{\lambda w'.$ Ali is in Istanbul at $g(4)$ in w', $\lambda w'.$ Ali is not in Istanbul at $g(4)$ in $w'\}$

In prose, ⑥ is defined if and only if at a time previous to the utterance (i.e., at $g(5)$), speaker and addressee believed that Ali was in Istanbul at a time previous to those beliefs (i.e., at $g(4)$). When defined, it is equivalent to the *yes/no* question *Was Ali in Istanbul?*. Noticeably, the context time parameter of the *hani* presupposition is locally shifted to the past by the past tense morpheme scoping over *hani*.

According to the analysis, when the prejacent is past, the time of the prejacent ($g(4)$) precedes the time of the belief that the prejacent is true ($g(5)$), which in turn precedes the utterance time (t_c). Let us illustrate this with a concrete example. The relationship between the event time (ET) and belief time (BT) relative to the utterance time (UT) is illustrated in the timeline in (58b).

(58) a. **Context:** Last week, Ali and Zeynep were studying history together. They were focusing on the period of the Roman Empire, and Ali claimed that the Colosseum at that time was used as a swimming pool, which Zeynep added to her notes. At the exam, she indicated this function of the Colosseum and lost 20 points from the exam score.
g(4) = the time of Roman Empire
g(5) = the week preceding the utterance (belief's time)
g(4) < g(5)

    b.
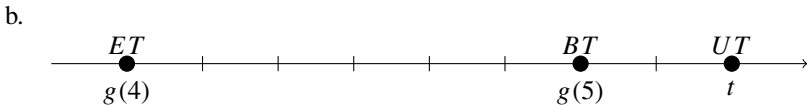
    c. HANI *Kolezyum yüzme havuzu-y-du?*
      hani Colosseum swimming pool-COP-PST

      ≈ 'Was the Colosseum a swimming pool? *We believed so.*'

We can now turn to the other interpretation of (44), that is the interpretation where the unpronounced tense in the prejacent is intended to be the present tense. ⑥' below stands for the logical form, which is identical to the one in (52), except that the lower past is replaced with the present. This reading only differs from (57) in that the relation between $g(4)$ and $g(5)$ is the overlap relation here.

(59) a. $[\![⑥]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle}$ is defined iff $\mathbf{g(4)} \circ \mathbf{g(5)}$ and $g(5) < t_c$ and $\forall w''$ s.t w'' is compatible with what s_c and a_c believe in w at $g(5)$, Ali is in Istanbul at $g(4)$ in w''

    b. If defined, $[\![⑥]\!]^{\langle w_c, t_c, s_c, a_c, g_c \rangle} = \{\lambda w'.$ Ali is in Istanbul at $g(4)$ in w', $\lambda w'.$ Ali is not in Istanbul at $g(4)$ in $w'\}$

The predicted difference between the two cases (past prejacent and present prejacent) is not straightforward. According to our analysis, the time of the eventuality in the prejacent (i.e., $g(4)$) is related to a context time $g(5)$ that is shifted to the past by the higher past in both cases. It is prior to it if the tense in the prejacent is past ($g(4) < g(5)$; see (57)) and overlapping with it if it is present ($g(4) \circ g(5)$; see (59)). Given this, in both cases the prejacent eventuality is past relative to the utterance time t_c. However, the two readings make distinct predictions in adequately construed scenarios such as the following one.

(60) a. **Context:** Zeynep is hiding around the corner of Ali's office, intending to surprise him there. She calls him to double check that he is sitting there working, and Ali indeed confirms that he is. A few seconds later, as she opens the office door, she finds it empty and calls him again saying the following.

b. HANI *ofis-te-Ø_{present/#past}-y-di-n?*
hani office-LOC-PRES/#PST-COP-PST-2.SG

Were you in the office? *We believed so.*

According to the analysis presented here, if the tense in the prejacent was past (i.e., if $g(4)$ preceded $g(5)$), (60b) would be undefined. Here is why. In that case the sentence would presuppose that speaker and addressee believed that Ali was in the office at some time preceding the time at which they believed so (i.e., preceding the phone call). This presupposition is not satisfied in (60a), since Ali guarantees his presence in the office at the very time of the phone call and not before it (he might very well be just stepping in as he talks on the phone with Zeynep). Since (60b) is instead perfectly felicitous and natural, we can conclude that the prejacent in it contains a silent present morpheme. The presupposition is then that Ali's presence in the office overlaps with the past time of the speaker and addressee's belief that he was, and this presupposition is indeed satisfied in (60a).

Thus far, we have seen that the prejacent tense can be past or present. The other aspect of the analysis is that the past and present tense in the prejacent are not construed relative to the utterance time but relative to the locally shifted context time (that is the belief's time). A potential competing analysis, as indicated by one of the anonymous reviewers, where the prejacent tense remains unbound and is interpreted directly in relation to the highest UT, leads to incorrect predictions as it would generate a presupposition that is too weak. Consider for example a case where the eventuality of the prejacent is located between the belief time and utterance time like (61a).

(61) a. Ayşe tells Mehmet that she will come to the office for the first time in her life at 14.00 tomorrow. Mehmet comes to the office the next day at 14.00 and waits for Ayşe for 10 minutes in vain. Given this, he calls her and asks:

b. *#Hani ofis-e gel-miş-ti-n?*
hani office-DAT come-ANT-PST-2.SG

≈ 'Have you arrived at the office? *We believed so.*'

c.
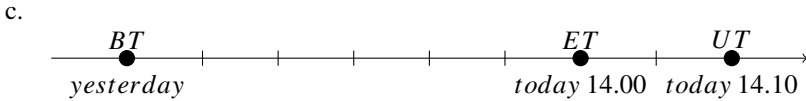
The competing view of the prejacent tense relativized to the utterance time would incorrectly predict (61b) to be felicitous, regardless of the value of the silent tense (present or past). In the case of a present interpretation of the silent tense in the prejacent, due to the aspect of anteriority introduced by *-mIş*, the event could precede the utterance time. But, lacking a relation with the belief time, it may follow the latter as in (61c). Accordingly, (61b) would presuppose simply that both the belief time and event time precede UT regardless of their order. Evidently, (61a) satisfies this presupposition.

Similarly, if the prejacent tense is past, the mere requirement in the presupposition of (61b) would be that both ET and BT precede UT, in any respective order. Once again, this presupposition is too weak because it is satisfied in (61a) although (61b) is infelicitous.

What this example shows is that a relation of overlap or precedence relative to the belief time is crucial to capture the intuitions of the felicity of Q-*hani* clauses. Their relation with the utterance time is only mediated via the shifted belief time. This guarantees a presupposition strong enough to account for the facts.

Since our analysis where the MFA rule effectively binds the prejacent tense and makes it shiftable to the past of the belief time, it correctly predicts the infelicity of (61b) in contexts like (61a). If the tense of the prejacent is present, the anterior aspect *-mIş* locates the event prior to the locally shifted context time, that is the shifted belief time. The resulting presupposition would then be that Ali arrived at the office at some time (ET) preceding Mehmet's belief that he did (BT). However, as indicated in (61a) and (61c), BT precedes the ET, hence the presupposition failure.

Likewise, if the time of the prejacent were past, the local context shift would locate the ET prior to the BT, which is again not satisfied in the context in (61a).

Given that our MFA rule + wide scope of the overt past make the correct empirical predictions even in contexts such as (61a), we conclude that in Q-*hani* clauses not only the belief time is shifted, but also the event time is affected by the local context shift.

The data presented above clearly indicate that shifting the local context time of the prejacent makes correct predictions. However, we would like to point out that only examples involving non-stative verbal predicates can tell apart our view from the opposing view just discussed. This is because non-verbal predication in Turkish can receive a future interpretation, as shown in (62).[19]

(62) *Yarın   ofis-te-y-im.*
      tomorrow office-LOC-COP-1.SG

      'I am (i.e., will be) in the office tomorrow.'

---

[19]The same also applies to the progressive marker in Turkish. It not only has a present time reference, but can also refer to a future time like the English progressive.

Given this, the Q-*hani* clause in (63b) may ask a question relative to an eventuality located at UT (that is following BT) in a context like (63a).[20]

(63) a. Ayşe tells Mehmet that she will be in the office tomorrow. The following day, Mehmet checks to see whether she is indeed there and does not find her. He calls her and asks:

   b. *Hani ofis-te-y-di-n?*
       hani   office-LOC-COP-PST-2.SG

      'Were you going to be in the office? *We believed so.*'
                                   (Adapted from an anonymous reviewer's example)

Given that the silent present morpheme of the prejacent in (63b) may be interpreted as future relative to the BT, this example does not necessarily indicate that the tense of the prejacent is present relative to the UT.[21] Therefore, such data do not constitute a counterexample to the tense shift of the prejacent in Q-*hani* clauses.

4 Deriving the properties of Q-*hani* clauses

Having introduced the details of our analysis, in this section, we discuss how it accounts for some of the peculiar properties of Q-*hani* clauses.

4.1 Distribution of Q-*hani* clauses

Recall that Q-*hani* clauses are infelicitous in contexts like the one below.

(64) a. **Context:** Ahmet is a vegan, and he is with Zeynep and Mehmet. While discussing where to eat lunch, Mehmet says that there is a vegan restaurant in his neighbourhood. Zeynep objects, stating that there is none there, but Ahmet trusts Mehmet, for it is his neighbourhood that they are talking about. However, once they arrive there, they find no vegan restaurant around. Turning to Zeynep, Ahmet says:

   b. # HANI *burada vegan bir restoran var-dı?*
        HANI here   vegan one restaurant exist-PST

      ≈ 'So, was there a vegan restaurant here? *We believed so.*'

---

[20]Notice that the example in (63) is different from (60), where the event and belief times overlap. Crucially, in (63), the belief time is prior to the event time.

[21]One of the anonymous reviewers asks whether the examples arguing for null present and past tenses in the prejacent could also be analyzed to host a non-future tense as suggested in Matthewson for St'át'imcets. We believe that this would not work for Turkish for a number of different reasons. First, in St'át'imcets, predicates unmarked for tense in matrix clauses can have present or past temporal reference, but crucially cannot denote future events, which are overtly marked. Differently from St'át'imcets, past tense has to be marked in matrix clauses in Turkish, while the present tense is unmarked. Hence, one cannot talk about a two-way distinction involving future and non-future for Turkish matrix clauses. Second, it is not true that Q-*hani* clauses cannot have a future interpretation in the prejacent in the absence of future marking. This is in sharp contrast with St'át'imcets. Indeed, examples like (63b) and (62) show that the prejacent can have a future interpretation (relative to the belief time) without any overt marking.

Our analysis predicts the infelicity of (64b) because in this context, the definedness condition that speaker and addressee both previously believed that there was a vegan restaurant in their surrounding is not satisfied. This results in a presupposition failure.

Our analysis also predicts that Q-*hani* clauses are expected to be felicitous as long as their presupposition about past beliefs is satisfied in their context of utterance. That is, the past beliefs do not have to be formed as a result of a linguistic assertion, but can result from extra linguistic information, as shown in (65).

(65) a. **Context:** Yesterday, Ali realized that Ayşe caught him smoking a cigarette, and Ayşe saw that Ali realized that. The next day, when Ayşe offered him a cigarette, Ali refused, denying to be a smoker. Ayşe asks:

     b. HANI *sigara   iç-iyor-du-n?*
         hani   cigarette smoke-IMPERF-PST-2.SG

      ≈ 'Do you smoke? *We believed so*.'

Instead, if the belief is understood to be non-mutual in the sense of Stalnaker (2002), a Q-*hani* clause is inappropriate as expected.

(66) a. **Context:** Ali believes that he is a secret smoker, but yesterday Ayşe caught him smoking a cigarette, unbeknown to him. The next day, when Ayşe offered him a cigarette, Ali refused, denying that he is a smoker. Ayşe asks:

     b. #HANI *sigara   iç-iyor-du-n?*
          hani   cigarette smoke-IMPERF-PST-2.SG

      ≈ 'Do you smoke? *We believed so*.'

The above discussion clearly shows that Q-*hani* clauses do not require a previous assertion to be able to pick up the content of the belief, but the past belief that the prejacent was true must be mutual.

4.2 Challenging uses of Q-*hani* clauses

In this section, we illustrate the components of our analysis that address the apparent challenging function of Q-*hani* clauses. Specifically, by uttering a Q-*hani* clause, the speaker expresses her disbelief regarding the prejacent (due to current counter-evidence) and requires from the addressee to choose between the following two reactions. Either convince the speaker to reject the counter-evidence (*yes* answer) or accept the prejacent is false (*no* answer). An example of this effect is provided in (67).

(67) a. **Context:** Zeynep is on the phone with Ahmet, who claims to be in the office. However, at the same time Zeynep sees Ahmet at a pool party on an Instagram live broadcast, and asks:

b. HANI *ofis-te-y-di-n?*
    HANI office-LOC-COP-PST-2.SG

    ≈ 'Are you in the office? *We believed so.*

c. Possible replies:
    (i) Of course I am, why are you asking?
    (ii) You caught me, I promise I will come later.

The ingredient of our analysis that we believe to be responsible for the effect of scepticism described above is an implicature triggered by the past tense in the presuppoisiton of Q-*hani* clauses. First, let us illustrate what this implicature would look like.

In the literature on implicatures, the past tense has been argued to trigger the implicature that what the proposition conveys is not currently true. The example in (68), which is from Chierchia and McConnell-Ginet (1990), is an illustration.

(68) (Chierchia and McConnell-Ginet 1990, p. 21)

a. Mary used to swim a mile daily.

b. Mary no longer swims a mile daily.

We suggest that the shifting of the presupposition to the past in Q-*hani* clauses results in a similar implicature; that is, that the speaker and addressee no longer believe that the prejacent is true. (69) is a simplified calculation of this implicature. To simplify the discussion, assume temporarily that the presupposition is an utterance (U). A below stands for alternatives. K stands for 'speaker of U knows', and p stands for the prejacent.

(69) (i)   U: s_c and a_c believed p.

(ii)   A: s_c and a_c believed p, and s_c and a_c believe now p

(iii) $A \subseteq U$, and $U \nsubseteq A$ (A is more informative than U)

(iv)   A is relevant to the current topic of the conversation and can be expressed as briefly as U

(v) a_c can infer ¬K(s_c and a_c believe and believed p)

(vi)   K(s_c and a_c believed p)   (from (69i))

(vii) therefore ¬K(s_c and a_c believe p)   (from (69i) and (69v))

(viii) K¬(s_c and a_c believe p)
       (the speaker knows that speaker and addressee no longer believe the prejacent)

                        (by Gazdar's 1979 Opinionated Speaker Assumption)

Importantly, the implicature we derive is not that the prejacent is false, but that the participants of the conversation currently fail to believe that it is true. Thus, the

presupposition related to the past CG implies that the current one does not contain the prejacent anymore, not that it contains its negation.

In our Q-*hani* examples, (69i) is not uttered overtly, but presupposed. This, we claim, is a case where an implicature is computed from a presupposition. Cases of this sort are not unheard of. Indeed, Ippolito (2003) derives the intuition of the falsity of the antecedent in counterfactual conditionals from an implicature of the presupposition of the past morpheme. The relevant examples are of the form in (70). Ippolito's (2003) claim is that the overt past tense shifts the time of the accessibility relation of the conditional (also a context-dependent item!), and this generates the negative implicature of counterfactuality. For details, we refer the reader to Ippolito (2003).

(70) a. If Ali were rich, he would own a villa now.
          Implicature: Ali is not rich.

To conclude, Q-*hani* clauses come with an ignorance implicature relative to the current truth of the prejacent, which, in combination with the questioning of the prejacent, generates the effect of uncertainty and scepticism the speaker conveys with these sentences.

4.3 Considerations on liability

In a very frequent of their uses, Q-*hani* clauses appear to be intended as to hold one's addressee responsible for the speaker's belief that the prejacent is true. Indeed, oftentimes they provide the inference that the addressee previously lied to the speaker regarding its truth. Does the question analysis of Q-*hani* clauses account for this inference? We argue that it does in the following way.

Generally speaking, a proposition p can be added to the CG of the interlocutors *a* and *b* if *a* asserted p, and *b* accepted it; or if *b* asserted p, and *a* accepted it; or if a third person *c* asserted p, and both *a* and *b* accepted it. Now, imagine a scenario where *a* asserts p, and *b* accepts it, but *a* later learns that p is not true. Can *a* utter a Q-*hani* clause to hold herself liable for adding p in the CG? The question analysis that we have presented predicts that she cannot. The reason is that if *a* learned that p is actually not true, it would be inappropriate for *a* to ask the addressee whether p is true. Furthermore, since it was *a* that asserted p in the first place, it would be odd for her to request an answer from her addressee with respect to the truth of p. This prediction is borne out as illustrated in (71).[22]

(71) a. **Context:** Ahmet tells Ayşe that Ali is in the office all day. Five minutes after telling Ayşe that Ali is in the office, Ahmet drops by Ali's office, and does not find him there. Ahmet calls Ayşe and asks:

      b. #HANI *Ali tüm gün ofis-te-y-di?*
          HANI Ali all   day office-LOC-COP-PST

          ≈'Was Ali supposed to be in the office all day? *We believed so.*

---

[22]As pointed out by an anonymous reviewer, a polar question without *hani* would also be odd in the same context as (71a). This supports our proposal that Q-*hani* clauses are indeed questions.

However, if it were *b* that asserted p in the first place, and *a* accepted it, then based on *a*'s subsequent evidence against p, she could utter a Q-*hani* clause so as to express that she considers *b* liable for mistakenly asserting p.

(72) a. **Context:** Ahmet tells Ayşe that Ali is in the office all day. Five minutes after hearing that Ali is in the office all day, Ayşe drops by Ali's office, and does not find him there. Ayşe calls Ahmet and asks:

    b. HANI *Ali tüm gün ofis-te-y-di?*
        HANI Ali all   day office-LOC-COP-PST

      ≈'Was Ali supposed to be in the office all day? *We believed so*.'

Here is how *b*'s liability in (72) is derived. In this example, the speaker asks a question which presupposes that she and her addressee had believed that Ali would be in the office all day, while asking whether this is actually true. Crucially, in our context the speaker believed this information to be true due to the addressee's previous assertion. Recall that in order to ask such a question, the speaker must have later encountered evidence challenging the truth of the prejacent. Hence, the speaker suspects that that her addressee lied. This causes the addressee to be held responsible for causing p to be mistakenly added to the CG and owing an explanation.

Importantly, the above inference of liability is contextually derived, and therefore not a necessary component of Q-*hani* clauses. One can easily find uses of Q-*hani* clauses where the addressee is not responsible at all for adding p in the CG. These are cases where speaker and addresse come to believe that p is true because of an utterance of a third party. Our analysis predicts that in those cases, Q-*hani* clauses would simply question the truth of p without an inference of liability, as illustrated in (73).

(73) a. **Context:** The manager of Ahmet's office informs everyone by email that they are given the afternoon off. As Ahmet is leaving the office, the secretary delivers to him a pile of documents to be processed and submitted by 5 pm that day. Ahmet asks the secretary:

    b. HANI *öğle-den   sonra tatil-di?*
        hani   noon-ABL after   holiday-PST

      ≈ 'Were we supposed to be free in the afternoon? *We believed so*.'

As is the case in any other contexts, uttering a Q-*hani* clause in the context provided in (73a) comes with the implicature that the speaker has ceased to believe p (=that it is an afternoon off), which is reasonable given the secretary's behaviour. However, the speaker obviously does not hold his addressee liable for adding p in the CG, since it was not the secretary that was responsible for Ahmet previously believing it. (73b) simply implies that the speaker does not believe p anymore, and asks for confirmation of this implicature.

5 Previous approaches and their shortcomings

This section is a brief critical review of the only previous approach to *hani*, that is Akar and Öztürk (2020) and Akar et al. (2020). These authors point out that *hani* clauses are similar in meaning and use to English negative polar questions (NPQs).

According to Ladd (1981), these questions are systematically ambiguous between a reading where negation applies to the proposition in the proto-question (inner negation) and a reading where it takes a wider scope (outer negation). Accordingly, a question like (74a) below may have either of the two different pragmatic functions in (74b) and (74c), depending on whether the negation is interpreted as "outer negation" or "inner negation", respectively.

(74) a. *Isn't there a vegetarian restaurant around here?* (Krifka 2017, p. 360)

    b. Speaker wants confirmation that there is a vegetarian restaurant here.

    c. Speaker wants confirmation that there is no vegetarian restaurant here.

Subsequent work argues that English negative polar questions are biased either towards the positive or negative answer (Van Rooy and Safarova 2003, Romero and Han 2004, Reese 2005, Krifka 2017). Specifically, when negation is outer negation, the speaker is biased towards the positive answer, but wants confirmation for it. Conversely, with inner negation, the speaker tends towards the negative answer, but wants confirmation for it (Krifka 2017, 2015).[23]

Akar et al. (2020) and Akar and Öztürk (2020) draw a parallelism between D-*hani* clauses and polar questions with outer negation, and between Q-*hani* clauses and polar questions with inner negation. However, we observe that *hani* clauses display a more limited distribution than negative polar questions, and the similarities are limited to their pragmatic functions in the very contexts and scenarios where negative questions and *hani* clauses are both acceptable. In fact, there are contexts where a D-*hani* clause is not felicitous, whereas a negative question with outer negation is.

(75) a. Ahmet mistakenly believes that Ayşe already read *Harry Potter and the Order of Phoenix*, whereas she has not. In catching her reading it, he says:

    b. 'Didn't you read this book before? Are you reading it again?'

    c. *#Hani bu kitab-ı   daha önce oku-muş-tun (ya). Tekrar mı*
        hani this book-ACC more before read-ASP-PST (ya) again Q
        oku-yor-sun?
        read-IMPERF-2.SG

      ≈'*As we know*, you read this book before. Are you reading it again?'

Whereas Akar et al. (2020) and Akar and Öztürk (2020) fail to predict the contrast in (75), the latter finds a straightforward explanation in the account presented

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[23]For the details relating to bias in NPQs, see the cited references above.

in this paper. As argued previously, D-*hani* clauses carry the presupposition that both speaker and addressee believe the prejacent to be true; however, the addressee in (75c) cannot possibly believe that she read it if she actually did not, hence the presupposition failure and the infelicity of (75c).

Similarly, there are contexts where NPQs with inner negation are natural and acceptable, but Q-*hani* clauses are not.

(76) a. **Context:** Ahmet is new to town. He previously lived in Manhattan, where one can find restaurants of all likings in every neighbourhood. Ayşe is very well aware that he is a vegan, but in the following dialogue, she tries to warn him he will have to go on a long bus ride to find a vegan restaurant, and the following conversation takes place.

   b. Ayşe: You need to take a long bus ride.

   c. Ahmet: Oh, really, is there no vegan restaurant around here?

   d. *Ahmet: #Gerçekten mi?* HANI *burada vegan bir restoran*
          really   Q   hani   here   vegan   one   restaurant
       var-dı?
       exist-PST

       ≈ 'Really? Was/Is there a vegan restaurant here? *We believed so.*'

Since in (76c), Ahmet seeks confirmation that there is no vegan restaurant nearby, the negation in it is interpreted as inner negation. The infelicity of (76d) follows from our analysis because Ahmet's uttering a Q-*hani* clause in this context results in a presupposition failure, since Ayşe's statement by itself denies her belief that the prejacent of (76d) is true.

The facts discussed in this section show that *hani* clauses are not fully parallel to NPQs, and therefore a unified semantic analysis of the two would be misleading. This being said, we do not deny that they sometimes naturally overlap in their uses (see Akar et al. 2020, Akar and Öztürk 2020), and this is why in many cases it is natural to translate *hani* clauses as NPQs. We do not discuss in detail why in certain contexts both *hani* clauses and NPQs are licensed. Possibly, this is because they both generate an effect of speaker's bias towards a proposition. *Hani* clauses additionally require the addressee's belief towards it, whereas NPQs do not appear to. We leave a formal investigation of the relationship between NPQs and *hani* clauses to future research.

6 Conclusion

In conclusion, this paper proposes the first unified compositional analysis of *hani* clauses that accounts for their different pragmatic functions and distributional restrictions. These differences are derived from structural differences, whereas the contribution of *hani* is taken to be constant. The analysis relies on the assumption that contextual parameters may be available for further manipulation in the truth conditional composition of meaning, and we take this to reflect cross-linguistic variation, where these types of semantic mechanisms may or may not be available in a given language.

One main issue we are leaving to further research is the obligatory presence of the past tense morpheme in what we dubbed Q-*hani* clauses. At this stage we can only offer some general speculations as to why this should be the case. In the absence of the past shift of the presupposition of *hani* in those interrogative clauses, they would end up presupposing that s_c and a_c believe the prejacent to be true at the utterance time and ask whether it is. This itself might be unacceptable, as the negative answer would generate a contradiction with the presupposition, while the positive answer left to the addressee as the only option would be equivalent to the corresponding D-*hani* clause. From the viewpoint of the questioner, we find that requesting the answerer to assert a D-*hani* clause with the same prejacent as the question is not pragmatically a legitimate move.

One more issue that still needs to be addressed concerns the phonological prominence on *hani* in Q-*hani* clauses (but not in D-*hani* clauses). Previous researchers have likened this to the phonological behavior of wh-words in Turkish matrix constituent questions (see Göksel et al. 2009), citing the intriguing fact that *hani* is historically a wh-word (Akar and Öztürk 2020, Akar et al. 2020). Although in general LF-PF mismatches are predicted in the Y models of grammar (Chomsky 1995), our analysis of Q-*hani* clauses as *yes/no* questions may seem at odds with the observation that Q-*hani* clauses appear to have a *wh*-question like contour with *hani* bearing phonological prominence. We speculate that *hani* bearing phonological prominence can be explained by the additional piece in the syntax of Q-*hani* clauses, namely the Q morpheme. It could well be that the phonologically prominent *hani*, i.e., HANI, is a portmanteau exponent that realizes both *hani* and the Q morpheme. While the Q morpheme is normally realized by the *mI* particle in matrix questions, realizational theories of morphology easily predict that a portmanteau form will bleed a competing bi-morphemic realization. In other words, the fact that Q-*hani* clauses not featuring *mI* is on a par with the portmanteau form *went* in English bleeding the bi-morphemic form *go-ed.

Declarations

Competing Interests The authors have no competing interests to declare that are relevant to the content of this article.

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