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Knowledge reports without truth

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1 Introduction

I present novel[1] data from Turkish attitude reports introduced by factive predicates where the potential falsity of the proposition that expresses the attitude content does not trigger infelicity: Non-factive reports introduced by factive predicates. Emphasis is placed on "non-factive knowledge."

In (1), *bil-*, an attitude predicate corresponding to the English *know* is used, yet the sentence is felicitous in a context that makes the proposition expressed by the embedded clause false, that is, where Bernie did not win the election. In fact, sentences like (1) often give rise to the inference that the attitude holder's belief is mistaken.

(1)   **Context**: Trump won the election, but. . .
      Tunç [Bernie kazan-dı   diye] biliyor.
      Tunç Bernie won-PST.3S *diye* knows
      Tunç *thinks* (lit. #*knows*) that Bernie won.

In (2), the attitude predicate is used with a nominalized embedded clause. The sentence is not felicitous when the proposition expressed by the embedded clause is false.

(2)   **Context**: Trump won the election, but. . .
      # Tunç [Bernie-nin   kazan-dığ-ı-nı]   biliyor.
        Tunç Bernie-GEN win-NMZ-3S-ACC knows
      # Tunç knows that Bernie won.

This paper explores this factivity alternation, lays out the analytical challenge that it raises, and proposes to give sentence (1) roughly the semantics in (3):

(3)   Tunç knows something, which gives rise to the belief that Bernie won.
                                                        ⤳̸ Bernie won.[2]

The knowledge component is directly contributed by the matrix predicate. The function of *diye* is to introduce a secondary belief component as well as its propositional content. The matrix attitude predicate's internal argument position is saturated by a pronoun, valued by the assignment function. The pronoun picks out a relevant set of facts that motivates the belief introduced by *diye*. (Perhaps the attitude holder has watched a false news report.) For concreteness, I assume that there is a causal link between what is known and what is believed, which might be contributed by the way *diye* composes with the matrix attitude predicate.

Given that the proposition introduced by *diye*, in (1), is a *belief* proposition, it is not presupposed and the sentence is not factive. Sentence (2), on the other hand, has the nominalized clause directly saturating the matrix predicate's internal argument [4]:

(4)   Tunç knows (the fact) that Bernie won.   ⤳ Bernie won.

The embedded proposition is a *knowledge* proposition, and the sentence is factive.

Before moving on to the next section, I would like to make a few comments on the factivity alternation illustrated by the contrast between (1) and (2). There is a general consensus in the literature that the presupposition associated with a certain class of factives including *know*, is "weak," in the sense that it is easily suspended. The original observations seem to be from Karttunnen [9] and the Kiparskys [12].

(5)   a.   I don't know that this isn't our car.   [12]
              ↝̸ This isn't our car.
        b.   Did you discover that you had not told the truth?   [9]
              ↝̸ You had not told the truth.

The factivity alternation discussed here seems to be distinct from the effects in (5). In particular, non-factive uses of factive predicates in English seem to cooccur with some sentential operator like negation or question (other examples in the literature include conditionals, modals and focus [21]), and depend on contextual factors [20] and indexicality. Such factors are not required to generate the Turkish contrast under scrutiny, which mainly appears to be conditioned by the syntax of the embedded clause.

Three hypotheses can be formulated on the basis of this factivity alternation. First, the *homophony hypothesis* states that Turkish has two homophonous *bil-* predicates, one lexically factive, and the other not. This duplication is required for every predicate that participates in the alternation. (I do not dwell much upon this hypothesis.)

The two other options are based on deriving the alternation from a unified semantics for attitude predicates. The *external factivity hypothesis* states that *bil-* and other 'factives' have a single, non-factive lexical entry. The account based on it generates factivity compositionally. This line of thinking is instantiated in [2, 16, 18], who argue that attitude predicates do not directly impose conditions (like a truth presupposition) on propositions. Finally, the *lexical factivity hypothesis* states that *bil-* and other factives have a single, factive lexical entry. The account based on it derives non-factive reports by introducing a device for suspending the factive presupposition. These two accounts are difficult to tease apart. Although I am unable to dismiss the external fac-

tivity hypothesis decisively, I argue that the lexical factivity hypothesis is better fit to handle the Turkish alternation, as it is able to capture the patterns in the data, without placing a load on the lexicon and on selectional properties.

As a final remark, I take the 'justified true belief' definition of knowledge to be an accurate working hypothesis for the meaning of *factive* know. I show that, with *non-factive* know, although the belief proposition need not be true, it nevertheless requires justification. This makes non-factive knowledge reports different, on the one hand, from factive ones (which require truth), and, on the other, from neutral belief reports (which do not require justification). I do not intend to make claims here about the *definition* of knowledge, say, from a philosophical standpoint. But non-factive knowledge reports should prove to be an interesting case study for the epistemologist.

2 The factivity alternation

This section first compares non-factive knowledge reports with factive ones and with plain belief reports. The result is that something, namely justification, is retained of knowledge. The second subsection generalizes this result to other attitude predicates, and argues that *diye*'s function is to introduce a secondary speech/attitude predicate, along with its content, that is scopally independent from the matrix predicate.

2.1 A case study: Non-factive know

In (1), *diye bil-* construction was translated as *thinks*, as opposed to *bil-* with a nominalization, translated as *knows*. Overall an attitude report with factive know is (often) only felicitous if the belief proposition is both justified and true. An attitude report with non-factive know requires the belief to be justified, but not that it be true. A neutral belief report requires neither justification nor truth. This is summarized in (6):

(6)

| | | requirement | | |
		belief	*justification*	*truth*
	factive know	yes	yes	yes
att. pred.	*non-factive know*	yes	yes	no
	think	yes	no	no

To motivate this result, I report in table (9), the felicity of the sentences in (7) across four conditions crossing justification of the belief (J, ¬J) and truth of the belief proposition (T, ¬T). Different conditions are obtained by minimally manipulating the context in which the sentences in (7) are judged. These contexts are provided in (8). The judgments reported in (9) are based on my own native intuition. The present set up could serve to run a wider scale controlled felicity judgment experiment, as an anonymous reviewer suggests. I must leave this for further research.

The content of the belief is kept constant: that *Bernie won*. The nature of the attitude varies: A tensed clause clause introduced by *diye* composes with *bil-*, in (7a), to

give rise to non-factive know. A nominalization composes with *bil-* in (7b) for factive know, and a nominalization[3] with *düşün-*, 'think,' in (7c) for neutral belief.

(7)   a.   Tunç [Bernie kazan-dı   diye] biliyor.
           Tunç Bernie win-PST.3S *diye* knows
           Tunç *thinks* (lit. *knows*) that Bernie won.

      b.   Tunç [Bernie-nin kazan-dığ-ı-nı]   biliyor.
           Tunç Bernie-GEN win-NMZ-3S-ACC knows
           Tunç knows that Bernie won.

      c.   Tunç [Bernie-nin kazandığ-ı-nı]   düşünüyor.
           Tunç Bernie-GEN win-NMZ-3S-ACC thinks
           Tunç thinks that Bernie won.

Suppose the overall context in (8), and the four conditions in (a-d).

(8)   **Overall context for (7)**: Tunç is in solitary confinement when the US presidential election happens. He has no access to the news, and his guards do not communicate with him. He gets out after the elections. Somebody teases him: "So, who won?" Tunç, who is a fervent Bernie supporter, says "Bernie won."

      Conditions:
      a.   Tunç has no information. Trump won.   ¬J, ¬T
      b.   Tunç has no information. Bernie won.   ¬J, T
      c.   Tunç overheard some talk about Bernie's victory during his confinement.
           This was a prank! Trump won.   J, ¬T
      d.   Tunç overheard some talk about Bernie's victory during his confinement.
           This was not a prank. Bernie won.   J, T

The first pattern to note in table (9) is that justification[4] licenses the use of *bil-*, 'know,' in general. This is seen in the contrast between the first three rows and the last three rows in the table. 'Think' is felicitous in the absence of justification, regardless of whether the belief proposition is true or false. The second observation is that factive 'know' is not licensed by justification alone, but that it requires truth as well. The final observation is that if factive 'know' is licensed, non-factive 'know' and 'think' sound odd, and not maximally collaborative. This is indicated by parentheses around checkmarks (✓) in the lower right quadrant. This effect seems to be pragmatic [19].

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[3] I fail to detect any meaning difference between sentences where a tensed clause under 'think,' compared to those with a nominalization. Further research is required here.

[4] For the importance of justification in ensuring the felicity of knowledge ascription, see Kratzer's [14] discussion of a Bertrand Russell example. In these examples, the kind of justification that suffices to license both factive and non-factive know is weak (hearsay). Problematic justification, such as Gettier cases are not discussed [5]. What kind of evidence is 'good enough' to license knowledge ascriptions with *dye bil-*?

| | | true? | | |
		no Trump	yes Bernie	att. pred.
(9)		# (7a)	# (7a)	non-factive know
	no	# (7b)	# (7b)	factive know
justified?		✓ (7c)	✓ (7c)	think
		✓ (7a)	(✓) (7a)	non-factive know
	yes	# (7b)	✓ (7b)	factive know
		✓ (7c)	(✓) (7c)	think

Consequently, *diye bil-* can in some circumstances be translated as 'think,' (bottom three rows) but the two meanings are not strictly equivalent (top three rows). But non-factive knowledge reports retain a justification requirement from knowledge, which lacks from the expression of neutral belief.

2.2 The meaning contribution of *diye*

The previous result is interesting from an epistemological perspective. A core knowledge meaning component can be isolated, and it seems to include a justification requirement, without truth. The availability of this meaning is perhaps due to the fact that, in general, sentences of the form [*p* diye V] assert the existence of actual events or situations of the kind denoted by V. The examples in (10) illustrate:

(10) a. Use of *diye* with manner of speech predicates
   Tunç [Bernie kazan-dı diye] {bağırdı/fısıldadı}.
   Tunç Bernie win-PST.3S *diye* screamed/whispered

   Tunç {screamed/whispered} that Bernie won. ↛ Bernie won.
   (There is an actual screaming/whispering event.)

  b. Use of *diye* with different belief predicates
   Tunç [Bernie kazan-dı diye] {hatırlıyor/öğrendi}.
   Tunç Bernie win-PST.3S *diye* remembers/learned

   Tunç {remembers/learned} that Bernie won. ↛ Bernie won.
   (There is an actual remembering/learning event.)

This seemingly trivial result rules out a potential line of analysis: It appears that *diye* does not make a factive predicate non-factive by directly operating on its meaning.

 Furthermore, *diye* specifies the verbal content of the scream (whisper), in (10a), and the propositional content of a belief, in (10b). Though it looks like this content scopes under the matrix attitude predicate, evidence from a few 'inherently negative' predicates suggest scopal independence. Sentence (11a) shows a nominalization composed with the predicates 'deny' and 'falsify.' The nominalized proposition is what is denied or falsified. However, a proposition introduced by *diye*, as in (11b), denotes the content of a speech act that *accompanies* the matrix event.

(11)   a.   Nominalizations scope under the matrix predicate

Tunç (*bu-nu)   [Bernie kazan-dığ-ı-nı]   {inkar etti/yalanladı}.

Tunç   this-ACC   Bernie win-NMZ-3S-ACC   denial did/falsified

Tunç {denied/falsified} the proposition that Bernie won.

    b.   *diye p* is scopally independent from the matrix predicate

Tunç (bu-nu)   [Bernie kazan-dı   diye] {inkar etti/yalanladı}.

Tunç this-ACC   Bernie win-PST.3S *diye*   denial did/falsified

Tunç {denied/falsified} this *by saying that* Bernie won.

Syntactically, it is possibile to give the matrix predicate an overt internal argument ('this') in a sentence with *diye*. This is impossibile with a nominalization.

Assuming that the facts in (11) are general, we can conclude about sentences with *diye* where factive predicates get non-factive interpretations that:

1. There is an actual event of the kind denoted by the factive predicate.
2. *Diye* introduces an independent belief predicate, and its propositional content.
3. Consequently, the factive predicate does not operate on the belief proposition.

Before moving on, note that examples like (11b), where the matrix predicate's internal argument is saturated by an overt nominal, are possible with factives too:

(12)   Tunç (bu-nu)   [Bernie kazan-dı   diye] {biliyor/hatırlıyor/öğrendi}.

Tunç this-ACC   Bernie win-PST.3S *diye*   knows/remembers/learned

Tunç {knows/remembers/learned} this as Bernie winning.   ↛Bernie won.

What remains to be accounted for is that the interpretation of *diye* as a speech or a belief predicate depends on the matrix predicate, and that there is a relation between the object of the matrix predicate and the belief proposition.

3   Proposal

In this section, I introduce the lexical factivity hypothesis and provide an argument for adopting it. I then sketch out a semantics for the alternants in the factivity alternation.

3.1   The lexical factivity hypothesis

A traditional way of encoding factivity in the attitude predicate's lexical entry is to say that it presupposes the truth of the propositional object it composes with [12]. This view seems to commit us to considering this propositional object as the attitude predicate's complement.The definition of a predicate like *bil-* can be written as in (13):

(13) $[\![\text{bil-}]\!]^{w} = \lambda p_{st} . \lambda x_{e} : p(w)=1 . \forall w' \; w' \in \text{DOX}(x,w) \rightarrow p(w')=1$

This function is defined only if the proposition expressed by *bil-*'s complement is true in the world of evaluation, and returns true only if that proposition is true in all of the attitude holder's belief worlds.

Under this hypothesis, factive knowledge reports with nominalizations do not pose a challenge. But, attitude reports with *bil-* are generally predicted to be factive. This is challenged by the factivity alternation. To derive non-factive reports with *bil-*, the semantics of *diye* must be such that the presupposition is suspended.

At least since Kartunnen [10], the literature acknowledges the existence of 'plugs,' which block presuppositions from projecting. One type of plug is non-factive attitude and speech predicates: If a presupposition trigger is embedded under such a predicate, the presupposition seems to fail to project. A naturally occurring example is provided in (14), where *know p* does not, to be felicitous, require *p* to be true in the world of evaluation of the sentence. (Such judgments are known to vary [10].)

(14)   Sansa thinks she knows that Theon killed her two younger brothers [. . .][5]
        (Theon did not kill Sansa's brothers.)

A way of accounting for the 'plugging' of the presupposition here could be to assume that the world argument of the proposition in the presupposition component is bound by the universal quantifier introduced by 'think.' Then, it suffices for the proposition expressed by the embedded clause to be true in all of Sansa's thought-worlds, which need not include the world in which the entire sentence is evaluated. This would indeed have the effect of committing the matrix subject to the truth of the proposition expressed by 'Theon killed [Sansa]'s brothers,' but not the speaker.

In Turkish, clauses (apparently) embedded under *bil-* that give rise to non-factive attitude reports are introduced by *diye*. Consequently, it would suffice to write in *diye*'s meaning whatever it is in *think* or *say*'s meaning that makes them act like plugs. In the previous section, I have provided independent evidence for this view. But, instead of 'plugging' the presupposition in the way sketched out in the last paragraph, *diye*'s semantics and mode of composition with the matrix predicate are such that the predicate does not directly operate on the belief proposition, hence being unable to trigger the presupposition of its truth. In the non-factive sentences with *diye* discussed here, the presupposition is not plugged, rather, it is not triggered.

3.2   A reason for adopting the factivity hypothesis

With nominalized clauses, the availability of a factive interpretation depends on the choice of the attitude predicate. This is illustrated by the contrasts in (15).

(15)   **Context**: Trump won the election but. . .

        a.   # Tunç [Bernie-nin kazan-dığ-ı-nı]   biliyor/öğrendi/hatırlıyor.
                 Tunç   Bernie-GEN win-NMZ-3S-ACC knows/learned/remembers
                 # Tunç knows/learned/remembers that Bernie won.   ⤳ Bernie won.

        b.   Tunç [Bernie-nin kazan-dığ-ı-nı]   düşünüyor/varsayıyor/hayal etti.
                 Tunç   Bernie-GEN win-NMZ-3S-ACC thinks/supposes/imagined
                 Tunç thinks/supposes/imagined that Bernie won.   ⤳̸ Bernie won.

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[5] http://pickledwhale.weebly.com/blog/quite-the-little-finger-indeed

With *diye*, attitude predicates are uniformly non-factive, as shown in (16).

(16)   **Context**: Trump won the election but...

    a.   Tunç [Bernie kazan-dı   diye] biliyor/öğrendi/hatırlıyor.
           Tunç Bernie won-PST.3S *diye* knows/learned/remembers
           Tunç "knows/learned/remembers" that Bernie won.   ↛ Bernie won.

    b.   Tunç [Bernie kazan-dı   diye] düşünüyor/varsayıyor/hayal etti.
           Tunç Bernie won-PST.3S *diye* thinks/supposes/imagined
           Tunç thinks/supposes/imagined that Bernie won.   ↛ Bernie won.

The difference between (15) and (16) strongly suggests that nominalizations are not inherently specified for factivity, and that whether the proposition a nominalization expresses is presupposed depends on the semantics of the embedding predicate. (For a different picture from Korean, where all nominalizations seem to be factive, in support of the external factivity hypothesis, see [18].) However, non-factivity does seem to be contributed by *diye* given that the reports in (16) are non-factive across the board.

    The homophony and the external factivity hypotheses could in principle handle these facts, with the cost of making lexical stipulations and losing explanatory power.

3.3   The semantics of the alternants

The data in section 2 suggest that two pieces of meaning need to be related in attitude reports with *diye*: The event/situation introduced by the matrix attitude predicate and a secondary belief predicate introduced by *diye*, with its propositional content. I give a simplified structure associated with the sentence in (17a) in (17b), and its semantics in (17c). I assume that the attitude holder is introduced by v [13, 16], and that the knowledge (abbreviated by K) of a set of facts *causes* the propositional belief (respectively p and B), adopting the mechanism sketched out in [15] for resultatives.

(17)   a.   Tunç [Berni kazandı diye] biliyor.
           Tunç *thinks* (lit. *knows*) that Bernie won.

    b. $[_{vP}$ Tunç $[v$ $[_{VP}$ [knows it$_{12}$] [*diye* Bernie won]]]]

    c. $[\![(17a)]\!]=1$ iff
        $\exists s_1[K(g(12))(s_1) \wedge holder(tunc)(s_1)] \wedge \exists s_2[B(p)(s_2)] \wedge CAUSE(s_2)(s_1)$

        There is a knowledge state s_1 whose object is g(12) and whose attitude holder is Tunç, and there is a belief state s_2 whose object is the proposition that Bernie won, and s_1 causes s_2.

The internal argument of the predicate 'know' is a contextually valued nominal, which we saw could be overtly expressed in (12). Finally, it is reasonable to think that since we are dealing with connected mental states, the holder of the belief state is identified with the holder of the knowledge state introduced by v.

    Now, the structure and the semantics associated with the factive attitude report in (18a) are respectively given in (18b) and (18c):

(18)   a.   Tunç [Berninin kazandığını] biliyor.
            Tunç *knows* that Bernie won.

       b.   [$_{v\text{P}}$ Tunç [$_v$ v [$_{\text{VP}}$ knows [$_{\text{DP}}$ NMZ Bernie won]]]]

       c. $\llbracket(18\text{a})\rrbracket=1$ iff $\exists s_1[\text{K}(p)\wedge\text{holder}(\text{tunc})(s_1)]$

            There is a knowledge state s_1 whose object is the proposition that Bernie
            won and whose attitude holder is Tunç.   (Presupposition: Bernie won.)

For simplicity, I leave out how to retrieve the propositional content of the nominal-
ization. In (18c), the attitude predicate 'know' directly composes with the proposition
that Bernie won. Given that the factive predicate is the presupposition trigger, the truth
of the embedded proposition is presupposed.

   This account is able to capture the meaning of *diye* used in conjunction with man-
ner of speech predicates, if it is granted that the paraphrase in (19b) is a good approx-
imation of the meaning of (19a).

(19)   a.   Tunç [Berni kazandı diye] bağırdı.
            Tunç screamed *diye* Bernie won.

       b.   Tunç's screaming caused him to say (*diye*) that Bernie won.

Data from the previous section motivate the need for an additional interpretation of
diye as introducing content of a speech act. I must leave a formal implementation of
this variability (illustrated also in (20)) for further research.

   I would like to close this section by bringing additional plausibility of a causal
interpretation for *diye*. Turkish has uses of *diye* other than in attitude reports. It intro-
duces a reason, in (20a), or a purpose clause, in (20b).

(20)   a.   Tunç [Berni kazan-dı   diye] ağladı.
            Tunç Bernie win-PST.3S *diye* cried
            Tunç cried because (*diye*) Bernie won.

       b.   Tunç [Bernie kazan-sın   diye] ağladı.
            Tunç Bernie win-OPT.3S *diye* cried
            Tunç cried so that (*diye*) Bernie would win.

Many details remain to be worked out, but the present account paves the way for a
unified treatment of *diye*.

3.4   The cross-linguistic perspective

Catalan, Greek, Hungarian [1] and Korean [18], are languages that are reported to dis-
play a factivity alternation like in Turkish. Further research is required to see whether
some of these languages pattern like Turkish, and whether the present analysis could
be extended to them.

   From a cross-linguistic perspective, the meaning associated with *diye bil-* seems
related to ones described by Kierstead [11], for Tagalog *akala*, and Glass [6], for

Mandarin *yǐwéi*. *Akala* and *yǐwéi* are belief predicates reported to express mistaken belief when their attitude holder is a third person. If the attitude holder is also the speaker, Glass reports that the result is a *hedgy* belief report, rather than a *mistaken* one. I do not discuss first person attitude holders here in the interest of space, but Turkish is similar to Mandarin in that non-factive 'know' in the first person signals that: the speaker$_i$ is justified in believing that p but that they$_i$ are open to the possibility that *not p*. Furthermore, data from a native speaker consultant (Hsin-Lun Huang, p.c.) suggests that justification plays a crucial role in licensing *yǐwéi*, which I showed is also the case for *diye bil-*.

The Turkish facts described here are an interesting addition to the Tagalog and Mandarin data, given that although *diye bil-* is sometimes used to express mistaken belief, this is not always the case. Illustrated in (21) is a use of *diye bil-* where the speaker lacks knowledge about p, but asserts that a third person is justified in believing that p, whereby presenting evidence *in favor of p*. This kind of use is consistent with the 'justified but not necessarily true' description of *diye bil-*, and it suggests that Glass's account of *yǐwéi* does not straightforwardly extend to Turkish.

(21)   **Context**: The speaker is asked: "Who won the election?"
        Valla ben bilmiyorum ama Tunç Bernie kazandı diye biliyo.
        tbh   I   don't.know but Tunç Bernie won   *diye* knows
        To be honest, I don't know, but Tunç *thinks* (lit. *knows*) Bernie won.

Consequently, *diye bil-* does not mean *falsely believe* (though this is sometimes an attested inference). The similarities observed at the onset of this subsection could be an effect of *diye* having the semantics of 'believe,' which is known to give rise to falsity inferences, in appropriate contexts, cross-linguistically [19].

Finally, the alternation in the truth requirement is observed for an attitude predicate otherwise used to express *knowledge* (compare Tagalog *akala*, '(falsely) believe' to *alam*, 'know,' and Mandarin *yǐweí* to *zhīdaò*) and productively extends to other attitude predicates. Non-factive uses of otherwise factive predicates seem to depend on the syntax of the embedded clause, and on the semantics of *diye*, rather than on lexical idiosyncracies associated with the predicates themselves.

4   The two alternative hypotheses about the factivity alternation

In this section, I discuss two competitors of the lexical factivity hypothesis argued for in section 3.

4.1   The homophony hypothesis

The homophony hypothesis is that the Turkish lexicon contains two homophonous attitude predicates *bil-*FACTIVE and *bil-*NON-FACTIVE.

The two predicates select for different kinds of propositional objects, respectively a nominalized and a tensed clause, that have in common the feature of forming the

content of a justified belief. The predicate *bil*-FACTIVE further imposes the condition that the object denote a true proposition, whereas *bil*-NON-FACTIVE comes with no such condition. The former corresponds to the familiar factive predicate 'know.' The latter is a more unusual predicate, yet one that fits cross-linguistic patterns.

Hsin-Lun Huang (p.c.) reports that *yǐwéi*, like *diye bil-*, requires the reported belief to be justified (in addition to implying that the belief is false, in Mandarin, as described by Glass [6]). The existence of two distinct attitude verbs, one for knowledge (*zhīdaò*) and the other for justified (yet perhaps false) belief, could be seen as providing support for the homophony hypothesis. Turkish would have both 'know' and a predicate like *yǐwéi*, which happen to be pronounced the same. A similar reasoning could apply to all predicates participating in the alternation: *hatırla*-NON-FACTIVE and *hatırla*-FACTIVE for 'remember,' etc.

I do not see an easy way of dismissing this hypothesis on empirical grounds. In the absence of a strong motivation in favor of it, this is perhaps enough to set it aside.

4.2 The external factivity hypothesis

The final hypothesis, 'external factivity,' states that *bil-* does not encode factivity in its lexical entry at all. (Keeping to the particular construal of factivity discussed up to now, this can be reformulated as: *bil-* is not a semantic presupposition trigger.) Such an account is argued for by Hazlett [7, 8].

The first question that this hypothesis raises is what the meaning of *bil-* is. In the data section, we observed that justification sets belief reports apart from knowledge reports. This fact could be written down in the lexicon, informally as in (22):

(22)   S *bil-* p := S has the justified belief that p

for S, an attitude holder, and p, a proposition

The definition encodes the justification requirement, and remains silent about the truth of p. This gives us a way of accounting for the non-factive uses of *bil-*, uses that are distinct from plain belief or thought reports. But, a consequence of the external factivity hypothesis is that we must have a way of generating factivity compositionally. This is a requirement given that *bil-* gives rise to factive readings with nominalized clauses. The question then is what, in the semantics, has the potential to introduce factivity? Drawing on work by Kratzer [16, 17] and others [2, 18], the external factivity hypothesis receives a particular implementation with the assumptions that: attitude predicates do not take clauses directly as their syntactic complement, and that modality is introduced from within the embedded clause, by the complementizer. This is appealing, but the facts discussed here do not, I believe, provide sufficient evidence for this view.

5   Concluding remarks

This paper introduces novel data from Turkish attitude reports that suggest that certain predicates including *bil-*, 'know,' are interpreted as factive or as non-factive depending on the syntactic type of the propositional object they combine with. I have argued

that factivity is 'concealed' by the functional element *diye*, which introduces an independent belief predicate along with its propositional content. Given that beliefs are not factive, neither are attitude reports that make use of *diye*. In the absence of *diye*, factive presuppositions are triggered as usual, by factive attitude predicates directly taking scope over the (nominalized) proposition they embed.

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