

Factivity defeated*

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1 Introduction

- I look at a **factivity alternation** in Turkish attitude reports.

(1) Factivity alternation

A single lexical item is interpreted as factive in some environment, but as non-factive in another.

This raises the question of whether factivity is *defeated* or whether it is *built up* in the semantic composition.

I argue in favor of *defeating* factivity.

- **Background 1:** Attitude predicates like “know” and “remember” are (nearly) always factive with *that* clauses in English. I assume that **a factive attitude predicate is one that presupposes the truth of the proposition it embeds.**
(Kiparsky & Kiparsky, 1970)

- (2) a. Münci remembers/knows that Bernie won.
→ Bernie won.
- b. Münci believes/said that Bernie won.
↯ Bernie won.

There are alternative proposals.
(Romoli, 2015; Moltmann, 2003; Kratzer, 2002, 2006).

I have not thought about potential alternations in English.

- **Core observation:** In Turkish, there is an alternation and it correlates with the syntax of the embedded clause.
- (3) Factive attitude predicates are factive with nominalizations and non-factive with tensed *diye* clauses.

- **Background information 2:** Turkish embedded clauses.

(4) a. Nominalization

Ali [Berni-nin kazan-dıĝ-ın-ı] hatırlıyo.
Ali B.-GEN win-NMZ-3S.POSS-ACC remembers
Ali remembers that Bernie won.

b. Tensed *diye* clause

Ali [Berni kazan-dı diye] hatırlıyo.
Ali B.NOM win-PST.3S *diye* remembers
Ali has the recollection that Bernie won.
(Literal: Ali remembers that Bernie won.)

c. Nominalizations are not always factive

Ali [Berni-nin kazan-dıĝ-ın-ı] sanıyo.
Ali B.-GEN win-NMZ-3S.POSS-ACC believes
Ali believes that Bernie won.

- **Goals for today:**

G1 Describe the data, novel, to the best of my knowledge.¹

G2 An analytical alternative: Is factivity defeated or built up?

G3 Argue in favor of factivity defeated & implementation options.

- **Proposal:** In presuppositional accounts of attitude factivity, a proposition is required to hold in the actual world. There is a mechanism in Turkish that defeats this requirement.

- **Not included in the talk:**

- Syntax of *diye* vs. nominalizations; Prosody.
- Cross-linguistic picture. *I don't know that p*
Tagalog *akala* Kierstead (2013), Mandarin *yǐwéi* (Glass, 2016)
Korean? (Jaieun Kim, p.c.)

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¹I only know of one paper, by Şener (2008), that has a *diye bil-* example translated with “thinks,” instead of the expected “knows.”

2 The factivity alternation

Section goal:

Factives interpreted as factive with nominalizations;
Factives not (never?) interpreted as factive with *diye* clauses.

(Note: This section's results are general for a class of predicates, though illustrated only with *bil-*, “to know.”)

2.1 Presupposition tests

- It is odd to follow up a nominalized attitude report with a factive predicate by negating the embedded proposition.

- (5) a. Ali [Berni-nin kazan-dıgını] biliyo.
Ali Bernie-GEN win-NMZ knows
Ali knows that Bernie won.
- b. #... Ama Berni kazan-**ma**-dı.
but Bernie win-NEG-PST.3S
#But Bernie didn't win.

Contrast: It is perfectly acceptable to follow up a *diye* attitude report by negating the embedded proposition.

- (6) a. Ali [Berni kazan-dı] diye biliyo.
Ali Bernie win-PST.3S *diye* knows
Ali “knows” that Bernie won.
- b. ✓... Ama Berni kazan-**ma**-dı.
but Bernie win-neg-pst.3S
But Bernie didn't win.

- Projection under **negation**:

With a nominalization, (7) the truth of the embedded proposition is presupposed, like in (5).

- (7) *Berni kazanmadı ve...* (“Bernie didn't win and ...”)
Ali [Berni-nin kazan-dıgını] bil-**mi**-yo.
Ali Bernie-GEN win-NMZ know-NEG-PRES.3S
Ali doesn't know that Bernie won.

Contrast: (8), with *diye*, does not presuppose the truth of the embedded proposition.

- (8) *Berni kazanmadı ve...* (“Bernie didn't win and ...”)
Ali [Berni kazan-dı] diye bil-**mi**-yo.
Ali Bernie.nom win-PST.3S *diye* know-NEG-PRES.3S
Ali doesn't “know” that Bernie won. (cf. ✓ think)

- Projection under **polar question**:

With a nominalization, (9) the truth of the embedded proposition is presupposed.

- (9) *Berni kazanmadı ama...* (“Bernie didn't win but ...”)
Ali [Berni-nin kazan-dıgı-ı-nı] biliyo mu?
Ali Bernie-GEN win-NMZ knows Q
Does Ali know that Bernie won?

Contrast: (10), with *diye*, does not presuppose the truth of the embedded proposition.

- (10) *Berni kazanmadı ama...* (“Bernie didn't win but ...”)
Ali [Berni kazan-dı] diye biliyo mu?
Ali Bernie win-PST.3S *diye* knows Q
Does Ali “know” that Bernie won? (cf. ✓ think)

- (Antecedent of conditional)

Take home:

NMZ + factive → truth of embedded proposition.
diye clause + factive ↗ truth of embedded proposition.
(NMZ facts pattern like English *know that*)

2.2 Can *diye* clauses be presupposed?

We've seen that *diye* clauses *can* not be presupposed.
optionally non-factive

Can we show that they *must* not be presupposed?
obligatorily non-factive?

2.2.1 Characterizing a test in English

- **The core contrast:**

- (11) a. A: It's raining Paris.
B: It's raining in Ankara too.
- b. A: Petr knows that it's raining in Paris.
B: It's raining in Ankara too. (*acceptable dialogue*)
- c. A: Petr believes that it's raining in Paris.
B: # It's raining in Ankara too. (*odd dialogue*)
- (Judgment by Nick LaCara.)

- **Reasoning step:** A statement p containing the string “DP₁ too,” is acceptable only if some similar sentence p' where “DP₂” replaces “DP₁ too” has been asserted, like in (11a), or presupposed, in (11b).

- **Consequence:**

- Given that (11c) is odd compared to (11a) and (11b), *too* is not licensed.
- Neither (11b) nor (11c) assert “it is raining in Paris.”
- Therefore *know*'s presupposition licenses *too* in (11b) and given that (11c) is odd, *believe* is not presuppositional.

2.2.2 The contrast carries over to Turkish

- A dialogue like (11b) is not odd with NMZ+*bil-*, shown in (12).

- (12) NMZ+*bil-*: Presupposition
- a. Münci says to Deniz:
Ali [Pariste yağmur yağ-dığını] biliyo.
A. in.Paris rain rains-NMZ knows
Ali knows that it's raining in Paris.
- b. Deniz replies:
Ankarada da yağmur yağıyo.
in.Ankara TOO rain rains
It's raining in Ankara too.

The dialogue is odd with NMZ+*san-* (“believe”) and *diye+bil-*.

- (13) NMZ+*san-*: No presupposition

- a. Münci says to Deniz:
Ali [Pariste yağmur yağ-dığını] sanıyo.
A. in.Paris rain rains-NMZ believes
Ali believes that it's raining in Paris.
- b. Deniz replies:
Ankarada da yağmur yağıyo.
in.Ankara TOO rain rains
It's raining in Ankara too.

- (14) *diye+bil-*: No presupposition

- a. Münci to Deniz:
Ali [Pariste yağmur yağıyo diye] biliyo.
A. in.Paris rain rain *diye* knows
Ali “knows” that it's raining in Paris.
- b. Deniz replies:
Ankarada da yağmur yağıyo.
in.Ankara TOO rain rains
It's raining in Ankara too.

- **Result:** It is safe to assume that p *diye*+factive never presupposes the truth of p .
- **Worry:** *believe* is associated with “anti-presuppositions.”
(Percus, 2006)

However, anti-presuppositions are unlike presuppositions.

- Presuppositions restrict the domain of a function.
- Anti-presuppositions are not regarded as domain restrictions, but as a kind of implicature.
- In principle, it is possible to define anti-presuppositions as a domain restriction (the negation of an associated presupposition):
 - * The result is undesirable in Turkish. (One reasonable attempt yields to contradiction.)
 - * A competition mechanism is independently needed.

For present purposes, the observation that *diye bil-* patterns like “believe” and less like “know” suffices.

2.3 Take home from this section

- A general factivity alternation in Turkish attitude reports. (*know*, though not shown: *remember*, *learn*, *understand*, . . .)
- Alternation conditioned by the syntax of the embedded clause. A nominalization is presupposed depending on the attitude predicate. *Diye* clauses are never presupposed.

3 A case study: What does *diye bil-* mean?

- We've seen that *diye bil-* behaves like “believe/think” rather than like “know.”
- In this section:
 - I describe a **contrast between third person and first person attitude holders**,
 - and argue that *diye bil-* is different from “plain belief” in that ***diye bil-* requires justification**.
(recall JTB analysis of knowledge)
- I do not attempt to characterize what *kind* of justification here.

3.1 Third person attitude holders

With third person attitude holders, the use of *diye bil-* gives rise to a cancellable implicature (?) that the belief proposition is false.

- (15) **Context:** Can is making spaghetti. A few moments before the spaghetti is ready, and when John's not looking, I swap the ready spaghetti with raw spaghetti. I turn to Münci:

✓ Can [sıpagetti oldu] diye biliyo.
Can spaghetti is.ready diye knows
Can “knows” that the spaghetti is ready. (p is false)

- (16) **Context:** No prank. Münci and me are in the living room and sincerely wondering whether the spaghetti is ready. Münci asks me: “Is the spaghetti ready?”

Ben bilmiyorum ama Can [*pro* oldu diye] biliyo.
I don't know but Can 3S is.done diye knows
I don't know but Can “knows” that it's ready. (◇p)

3.2 First person attitude holders

With first person attitude holders, the use of *diye bil-* gives rise to **hedgy knowledge**: I have reasons to believe that *p*, but I'm open to the possibility that *not p*.

- (17) **Hedgy knowledge context:** I heard that Bernie won the election, but I haven't double checked. Münci, who is not informed at all, asks me: “Who won the election?”

Emin değilim ama [Berni kazandı diye] biliyorum.
sure I'm not but Bernie won diye I know
I'm not sure but I think that Bernie won.

- “Hedgy belief” in the first person is coined by Glass (2016) for Mandarin *yǐwéi*: an attitude predicate expressing false belief in the third person (distinct from the lexical item *zhīdào*, “know”).

3.3 Difference with plain belief: Justification!

- For a *diye bil-* attitude report to be felicitous, there needs to be **belief and justification**.
 - This is **knowledge without a truth requirement**.
 - (≠Beliefs: No justification & no truth requirements.)
- In both (15) and (17), attitude holder's belief is motivated: by world knowledge in (15) and a reliable rumor in (17).
- *diye bil-* is infelicitous with unmotivated beliefs.
- In (19), I cross and manipulate two factors in a single scenario: Justification (yes/no) and truth (yes/no).

- (18) The following sentences are judged in four contexts in (19).
The state of the world we're interested in is whether it is the case that p ="Bernie won".
- a. Can [Berni kazandı] **diye düşünüyö**.
Can thinks that Bernie won. *plain think*
 - b. Can [Berni kazandı] **diye biliyo**.
Can *diye bil*s that Bernie won. *non factive know*
 - c. Can [Berninin kazandığını] **biliyo**.
Can knows that Bernie won. *factive know*
- (19) **Contexts:** Can is in solitary confinement with no access to information about the real world. He's a Bernie supporter. After the election, we ask Can who won.
- a. **Justification:** NO
He doesn't accept any state of the world where Bernie isn't the winner. He (irrationally) believes that Bernie won. He can't justify.
 - (i) **Truth:** NO
Trump won. ✓(18a), #(18b), #(18c)
 - (ii) **Truth:** YES
Bernie won. ✓(18a), #(18b), #(18c)
 - b. **Justification:** YES
Can overheard the guards celebrating Bernie's victory outside his cell.
 - (i) **Truth:** NO
Trump won. ✓(18a), ✓(18b), #(18c)
(The guards tricked Can.)
 - (ii) **Truth:** YES
Bernie won. ?(18a), ?(18b), ✓(18c)
- *Thinks* is acceptable without justification.
 - *diye bil-* is only acceptable with justification.
 - NMZ+*bil-* is only acceptable where there is justification and truth.
 - *Thinks* and *diye bil* are infelicitous where there is justification and truth.

4 Two hypotheses and the sketch of a proposal

- **What to explain:**

- (20) **The factivity alternation:** (restated)
A factive attitude predicate is interpreted as factive with a nominalization. The same predicate is interpreted as non-factive with a *diye* clause.

- **The analytical alternative:**

- **Option 1:** Factive predicates are lexically factive.
Consequence: Factivity is defeated in the semantic composition, in environments with *diye*.
One way of implementing this option is to think about plugs.
(Karttunen, 1973)
- (21) ✓Sansa thinks she knows that Theon killed her two younger brothers.
(Theon did not kill Sansa's brothers.)

Hypothesis (plugs): *diye* is a plug.

- **Option 2:** Factive (descriptively) predicates are not in fact lexically factive.
Consequence: Factivity is built from the bottom up in the semantic composition.
One way of implementing this is by appealing to proposals on factive vs. non-factive complementizers. (Kratzer, 2002, 2006)
- Hypothesis (factive Cs):** Some nominalizations are headed by/include a factive complementizer.
- The two options are equally "easy."
A core lexical meaning of attitude predicates remains.
A condition on the truth of the embedded proposition is defeated or generated.
- Empirical predictions?
- Comparability?

4.1 Favoring Option 1

- Nominalizations are sometimes factive and sometimes not, depending on the attitude predicate.
→ Factivity comes from the attitude predicate.
- *Diye* clauses are (it seems) never factive.
→ *diye* blocks the factive meaning component.

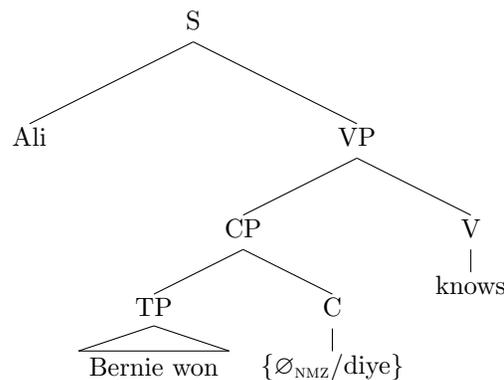
- This option:
 - Captures our generalizations.
 - Nothing extra is stipulated about selection.
 - Explains why we can't factivize certain predicates. (Or why they don't occur naturally in Turkish.)
Factive *believe, think, say, etc.*

4.2 Tentative proposals

4.2.1 Accounting for the lack of truth restriction

Option: *Diye* as a modal complementizer

- Assume the semantic parse in (22): for “Ali knows that Bernie won.”



- “Knows” has its traditional presuppositional lexical entry. It requires CP to be true in the world of evaluation for felicity.
- Nominalizations and tensed clauses are introduced by different Cs.

- The action is in the complementizer: \emptyset_{NMZ} vs. *diye*.
- **Accounting for factive nominalizations:** Just like English!
 - \emptyset_{NMZ} is semantically vacuous: $\llbracket CP \rrbracket = \llbracket TP \rrbracket$
 - $\llbracket S \rrbracket = 1$ iff Bernie won in all of Ali’s belief worlds and Bernie won in the actual world.
- **Non-factive *diye* clauses**
 - *diye* maps a proposition to another proposition: $\llbracket CP \rrbracket \neq \llbracket TP \rrbracket$
 - * $\llbracket TP \rrbracket = 1$ iff Bernie won in w
 - * $\llbracket CP \rrbracket = 1$ iff in all the worlds w’ *diye*-accessible from w, Bernie won in w’
 - The worlds that are *diye*-accessible from the actual world need not include the actual world.
 - Consequently, the truth of $\llbracket CP \rrbracket$ can be presupposed, without any further condition on the truth of $\llbracket TP \rrbracket$
- Independent support for an extra modal base coming from *diye*? Predictions? (yet thin)
 - But *if diye* introduces a second modal base, we can safely assume that it is distinct from that of the attitude.
 - The attitude predicate varies and its modal base too: *know* vs. *remember*.
 - *diye* is constant across attitudes.
 - **Important note:** *bil-* and other factive predicates do not cease to be factive. The semantics of *diye* simply makes their presupposition go undetected.

4.2.2 Accounting for nmz blocking *diye*

- Reporting knowledge or any other attitude is odd if the attitude proposition is true in the actual world: In the appropriate circumstances, the use of *diye* generates a mistaken belief or an ignorance inference.

- (22) a. ✓ ‘p and Kp’ with NMZ
 Berni kazandı ve Ali Berninin kazan-dığını biliyo.
 Bernie won and Ali Bernie won-NMZ knows
 Bernie won and Ali KNOWS that Bernie won.
- b. #‘p and *diye* Kp’
 # Berni kazandı ve Ali Berni kazan-dı diye biliyo.
 Bernie won and Ali Bernie won-PST.3S *diye* knows
 # Bernie won and Ali THINKS that Bernie won.

- This contrast can be captured by setting up a **competition** between:
 - The use of *bil-* with a NMZ, and
 - The use of *bil-* with *diye*.
- Such accounts exist for English ‘know’ vs. ‘think.’

5 Concluding remarks

- A factivity alternation in Turkish: Whether an attitude verb is interpreted as factive or not depends on the syntax of the clause the attitude verb embeds.
- This raises the question of whether factivity is defeated or built up.
- Defeating factivity is a more desirable theoretical option.
- The way to implement this idea is to subtract the actual world from the worlds in which a belief proposition holds

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