Low sluicing in Turkish is VPE *

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1 Overview

This talk is concerned with an ellipsis construction in Turkish – low sluicing—that resembles sluicing on the surface but aligns more closely with VPE.

Sluicing is

• a construction where a question consisting only of a wh-phrase receives the full interpretation conveyed in a preceding sentence (Ross, 1969)

(1)
$$\underbrace{\text{Correlate}}_{\text{Somebody}_i \text{ just left}} = \underbrace{\text{wh-remnant}}_{\text{CP} \text{ who}_i} \underbrace{[_{\text{TP}} \ _]]}_{\text{ellipsis site}}.$$
 Ross (1969)

• prominently explained by a movement and deletion approach in which a TP is elided at PF under *some* identity with another TP after wh-extraction (Merchant, 2001).

Turkish has two ellipsis constructions that resemble sluicing:

(2) Yağmur biri-ne_i kız-dı. Yağmur somebody-DAT get.mad-PST 'Yağmur got mad at someone.'

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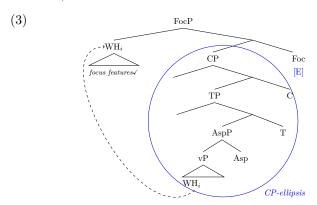
a. Kim- e_i ? who-DAT 'Who?'

high sluicing

b. Kim-e_i-y-di? who-dat-cop-pst int. 'Who?'

low sluicing

- For reasons that will become clear later, I refer to (2a) as **high sluicing** and (2b) as **low sluicing**, with *high* and *low* reflecting the size of the ellipsis site.
- The key surface difference between high sluicing and low sluicing lies in the wh-remnants:
 - remnants include *copula* (aka auxiliary) and tense besides case in low sluicing.
 - remnants bear only case in high sluicing which I assume involves whmovement and deletion following Ince (2012) as in English (Merchant, 2001).¹



¹It has been argued that wh-movement in in-situ languages occurs exceptionally in sluicing to realize focus (e.g., Toosarvandani 2008 for Persian; Ince 2006; 2009; 2012 for Turkish). This is controversial for Turkish, where focus is typically pre-verbal (Şener, 2012; Palaz, 2018). While I do not specifically argue for focus movement in Turkish here, I assume that wheextraction is possible in sluicing, considering how common scrambling is in the language.

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Puzzle:

- i. Does the presence of the copula and tense in low sluicing necessarily imply a different derivational source from high sluicing, one that does not involve movement and deletion?
- ii. What implications does the source of low sluicing have for licensing and identity requirements in ellipsis?

Proposal:

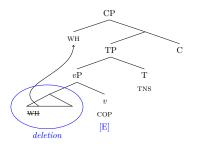
- I argue that low sluicing must involve a clausal source, not merely copular clause (aka truncated cleft) sources contra Kizu (1997), unlike languages such as Uzbek (Gribanova, 2013) or Japanese (Hiraiwa and Ishihara, 2012; Saito, 2004).
- I advance an analysis of low sluicing in Turkish which involves the deletion of a deverbal projection licensed mainly by a verbal functional head such as v that hosts copula or sometimes by negation (in line with Ince 2006 and contra Palaz 2018).
 - This analysis of low sluicing serves as a support for Rudin's (2019) claim that the domain of identity is smaller than the ellipsis site.

2 Potential sources of low sluicing

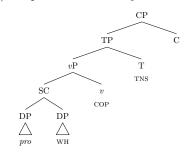
Today

- I consider two potential sources for low sluicing in Turkish:
 - i. a full clause analysis (FCA) in (4) due to case marking that antecedents and the wh-remnants share
 - ii. a copular clause analysis (CCA) in (5) due to copula on wh-remnants
- I argue that low sluicing must originate from a full clausal source and is not necessarily a product of copular clauses.

4) full clause analysis



(i) copular clause analysis



FCA and CCA are fundamentally different:

- FCA **involves** the deletion of a constituent after wh-movement while CCA **does not** involve any deletion.
- Wh-phrases in CCA behave as the **predicates** of a copular clause with a null pronominal subject, but those in FCA **are not**.
- \Rightarrow CCA represents a plausible parse of low sluicing given how both can bear copula and tense however, it cannot be the only source for low sluicing.

Here are three arguments why this is the case:

- i) Adjuncthood: Copular clauses cannot have adjunct predicates whereas whremnants of low sluicing can be adjuncts.
 - (6) A: Yağmur bir yer-de Fatih'i gör-dü. Yağmur one place-LOC Fatih.ACC see-PST 'Yağmur saw Fatih somewhere.'
 - B: #?Ev-de-y-di. house-LOC-COP-PST INT. '(He) was at the house.'

 $copular\ clause$

B': Nere-de-**y-di**?
where-LOC-COP-PST
INT. 'Where?'

low sluicing

ii) Island effects: Copular clauses contain no islands, ipso facto, no island effects whereas low sluicing is island-sensitive also as noted in Ince (2006).²

 $^{^2\}mathrm{Note}$ that this is unusual of sluicing which is well-known to be island-insensitive (Merchant, 2001).

(7) A: Yağmur Fatih'e [biri-nden sakla-n-an adam-ı] Yağmur Fatih.DAT someone-ABL hide-PASS-REL man-ACC göster-di. show-PST

'Yağmur showed Fatih the man who was hiding from someone.'

B: Polis-ten-Ø-di. police-ABL-COP-PST

'(It) was from the police.'

copular clause

B': *Kim-den-Ø-di? who-ABL-COP-PST INT. 'From who?'

low sluicing

- iii) Multiple wh-remnants: Low sluicing exhibits multiple wh-remnants whereas copular clauses have only one predicate position, which means that they can employ only one wh-remnant, but not multiple.
 - (8) A: Yağmur biri-ne bir şey ver-di. Yağmur someone-DAT one thing give-PST 'Yağmur gave something to someone.'
 - B: #?Fatih'e hediye-**y-di**.
 Fatih.DAT gift-COP-PST

 INT. 'It was a gift for Fatih.' copular clause
 - B': Kim-e ne-y-di? who-DAT what-COP-PST INT. 'To whom what?'

low sluicing

Although CCA is quite a compelling source due to the occurrence of copula, the diagnostics show that FCA is **necessary** – at least in cases where CCA is unavailable.

3 Why FCA?

Under the FCA

• low sluicing involves ellipsis of a deverbal constituent smaller than a clause via wh-movement and deletion approach.

As every elliptical construction, it must be governed by two conditions:

- i) licensing condition = ellipsis is triggered by a functional head (Lobeck, 1995; Merchant, 2001)
- ii) identity condition = elided material must be identical to its antecedent in some fashion (Sag, 1976; Fiengo and May, 1994; Lobeck, 1995; Merchant, 2001; Rudin, 2019)
- For the licensing condition, I adopt Merchant's (2001; 2005) [E]-feature
 - which instructs PF to not pronounce the complement of the functional head which hosts it
 - and instructs LF to identify an antecedent based on the identity condition
- For the identity condition, I draw on Rudin's (2019) theory of syntactic identity, which I explain further in Section 5.

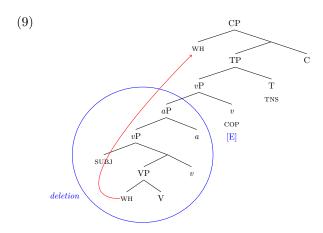
The current analysis builds on previous work, but it introduces new insights into the licensing and identity mechanisms of low sluicing.

- Ince (2006) has proposed AspP-ellipsis triggered by T head under a full clausal source.
- However, having significant limitations, their analysis overlooks (i) the possibility of copula as a licenser of low sluicing and (ii) the problem with the identity condition.
 - Ince (2006) implicitly assumes that the copula occupies T for purely morphological reasons based on the view that it requires a host and must attach to tense as a bound support morpheme (Kornfilt, 1996, 1997).

I however show that copula **cannot be** merely a support morpheme due to the independent evidence from the verbal domain in Turkish.

This claim leads to two consequences for the current proposal:

i. Copula can be a potential licenser of low sluicing when analyzed syntactically.



ii. FCA requires some syntactic non-isomorphism where the wh-remnant always bear copula, but the antecedent does not.

Let us go over the basics of verbal complex in Turkish, and see how these play out.

3.1 Verbal domain in Turkish

Getting started...

- As an agglutinating language, Turkish exhibits rich inflectional morphology, with suffixes appearing in complex combinations as either phonologically null or overt.
- These inflectional suffixes generally include based on their surface order:

$$negation \rightarrow TAM \rightarrow copula \rightarrow agreement$$

- (10) Git-ti-m. go-PST-1SG '(I) went.'
- TAM markers are in general classified into three sets based on their behavior and combinations (Enç, 2004; Kelepir, 2001; Sag, 1976; Kelepir, 2021):

(11)

	Set 1	Set 2	Set 3
	modality: -A	perfect: $mI_{\tilde{s}}$	past: $-DI$
	modality: -AbIl	future: $-(E)cEk$	evidential: $-mI_{s}$
verb root		imperfective: $-(I)yOr$	conditional: $-sE$
		aorist: -Ir	
		necessity: $-mAlI$	

- Set 2 TAM markers are only observed on verbs.³
- (12) a. Gid-iyor- \varnothing -um. go-IPFV-COP-1SG
 - '(I) am going.'
 - b. *Ucuz-**uyor**-Ø. cheap-IPFV-COP INT. 'It is being cheap.'
- When a Set 2 marker and a tense marker co-occur, a copula is inserted between them:⁴
- (13) Gid-**iyor-Ø-du**-m. go-IPFV-COP-PST-1SG '(I) was going.'
- To test copula's presence, its cliticized forms (null or -y-) can be replaced with its free form i-:
- (14) Gid-**iyor i-di**-m. go-IPFV COP-PST-1SG '(I) was going.'
- While copula **is not** allowed on just a verbal predicate without a suffix from Set 2, it **must occur** on predicative nouns or adjectives:

 $^{^3}$ While some Set 2 suffixes, such as $-mI_s$ (perfect) and -(E)cEk (future), can function as participles, this distinction does not affect the distribution of the copula.

⁴Copula is not overt after a consonant. It is realized as -y- after a vowel (Kornfilt, 1997).

b. Ucuz-Ø-du. cheap-COP-PST '(It) was cheap.'

Generalization:

- Copula attaches to non-verbal stems, which can be:
 - a verb affixed with a marker from Set 2, or
 - a predicative noun or adjective.
 - This explains why wh-remnants in low sluicing surface with a copula.
- The occurrence of copula is not limited to copular clauses despite often being analyzed as a support morpheme hosted by the T head (Kornfilt, 1996, 1997).

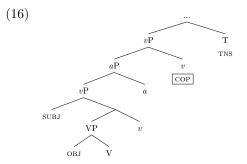
Suffixes in Set 2 appear to transform verbs into non-verbal elements, which the copula subsequently follows to re-verbalize. I refer to these markers as non-verbal suffixes and propose that they are projected through a non-verbal head, a.

3.2 Copula as a Functional Head

Upshot:

• The copula in Turkish attaches to all non-verbal elements and can carry verbal inflection, such as past tense markers (Sağ, 2013; Zanon, 2014; Kelepir, 2021).

Unlike the old assumption that copula is a support morpheme, I adopt the idea that the copula serves as a verbalizer and is hosted by a functional head v, located higher than non-verbal suffixes but lower than tense markers (Sağ, 2013; Kelepir, 2021), and surfaces whenever an adjectival layer i.e., aP is present.



Is there any empirical evidence for copula being more than merely a support morpheme?

There is.⁵

- i) Positioning of the Question Particle: The position of mI differs depending on the presence of a copula:
 - In copular forms, mI precedes person agreement (17a).
 - In non-copular forms, mI follows person agreement (17b).

• Even when tense is not overtly realized, the position of mI depends on the copula (18).

$$(18) \quad \text{a.} \quad \text{*Gid-iyor-}\varnothing\text{-}\mathbf{sun} \quad \mathbf{mu}? \qquad \qquad \text{b.} \quad \text{Gid-iyor-}\varnothing \quad \mathbf{mu-sun}? \\ \quad \text{go-IPFV-COP-2SG Q} \qquad \qquad \text{go-IPFV-COP Q-2SG} \\ \quad \text{INT. 'Are you going?'} \qquad \qquad \text{`Are you going?'}$$

ii) Change in Stress Patterns: Non-copular forms follow regular word-final stress pattern, but stress is exceptionally penultimate in copular forms (Zanon, 2014).

⁵See Zanon (2014) for a more detailed discussion.

(19) a. Git-tí-m. go-PAST-1SG 'I went.' b. Gid-iyór-Ø-um.go-IPFV-COP-1SG'I am going.'

• Such data suggest that the copula is not merely a support morpheme on T, and must have a separate morphological or syntactic analysis.

Some implications for the ellipsis theory...

As an independent functional head, copula

- can serve as a licenser, enabling low sluicing to parallel VPE, thereby expanding the range of potential licensers in sub-clausal ellipsis (contra Ince 2006)
- contributes to the inventory of possible mismatches in ellipsis, providing further evidence for the minimal constituent that the identity condition targets.

4 Exploring the predictions

Under the FCA, the claim that functional heads license the deletion of their complements yields some correct predictions for low sluicing:

- i) Island Sensitivity: Low sluicing must be unavailable when the correlate in the antecedent is within an island, as the extraction of a wh-phrase out of an island would result in unacceptability.
- FCA accounts for the island sensitivity of low sluicing effectively exemplified below repeated from (20) unlike CCA.
- (20) A: Yağmur Fatih'e [biri-nden sakla-n-an adam-1] Yağmur Fatih.DAT someone-ABL hide-PASS-REL man-ACC göster-di. show-PST

'Yağmur showed Fatih the man who was hiding from someone.'

B: Polis-ten-Ø-di. police-ABL-COP-PST

'(It) was from the police.'

copular clause

B': *Kim-den-Ø-di? who-ABL-COP-PST INT. 'Who was it from?'

low sluicing

- However, high sluicing, being island-insensitive, requires a different explanation:
 - it relies on copular clauses as argued for English (Barros et al., 2014) or
 - it repairs island violations as discussed in Ross (1969) and Merchant (2001)
- Whatever the explanation for high sluicing is, it is beyond the scope of this work (but see Ince 2012 for Turkish).
- ii) Compatibility with Higher Material: Elements outside of aP, the deleted constituent must survive deletion, as they are not part of the ellipsis site.
- Complementizer diye ('that') and particle ki ('though') in Turkish are hosted
 on C, higher than copula (Ince, 2012; Gündoğdu, 2017; Palaz, 2018). They
 follow wh-remnants of low sluicing:
- (21) Ali birin-e_i şeker ver-di ama kim-e-y-di_i diye Ali someone-DAT candies give-PST but who-DAT-COP-PST COMP sor-ma-dı-m.
 ask-NEG-PST-1SG
 'Ali gave candies to someone, but I didn't ask who.'
- (22) Ali birin-e_i şeker ver-di ama kim-e-y-di_i ki
 Ali someone-DAT candies give-PST but who-DAT-COP-PST PART
 bil-m-iyor-um.
 know-NEG-IPFV-1SG
 'Ali gave candies to someone, but I don't know who, though.'
- iii) Compatibility with Lower Material: Elements outside of aP, the deleted constituent cannot survive deletion, as they are part of the ellipsis site.
 - Negation değil 'not', a high negation in Turkish, precedes elements like tense, the question particle, and agreement. Its order in (23) reflects its hierarchical position below the licenser copula:
 - (23) Gid-ecek **değil** i-di.
 go-fut not cop-pst
 'It was not the case that they would go.'

• If the suffix order reflects the hierarchical structure (Baker 1985), değil is structurally lower than the licenser copula. Thus, değil is predicted to be deleted along with the ellipsis site:

- Then, the wh-remnants of low sluicing in Turkish must felicitously appear
 without the negation değil in the presence of a negated antecedent, however,
 they are infelicitous:
- (25) A: Ali birin- \mathbf{e}_i kız-mış değil- \varnothing -di. Ali somebody-DAT get.mad-PERF not-COP-PST 'It was not the case that Ali got mad at someone.'

B: *Kim-e-y-di_i? who-DAT-COP-PST INT. 'Who?'

- Surprisingly, low sluicing becomes acceptable when the negation değil follows the wh-remnant kime. Note that the correlate of the wh-remnant in (26) receives a very specific interpretation for this type of felicitious low sluicing.
- (26) Kim-e_i değil-Ø-di? who-DAT not-COP-PST LIT. 'Who wasn't it?'

• In other words, değil must in fact escape the deletion and surface with the wh-remnants of low sluicing, but the current proposal does not account for how an element lower than the licenser survives the deletion.

How do we account for the survival of high negation?

- Two different ways to explain why değil survives with the remnant:
- i) Local Licensing: The [E]-feature is on the Neg head değil and licenses deletion of its local complement: (27)
 - in line with Merchant's (2001) theory of ellipsis that requires [E]-feature to be subject to locality in selecting what the ellipsis-site is
- ii) Non-Local Licensing: The [E]-feature on copula targets a non-local complement (aP) instead of its local complement: (28)
 - under sufficient empirical evidence for this alternative, the [E]-feature becomes theoretically inadequate since it is not quite clear how a feature strictly based on locality under Merchant's (2001) theory of ellipsis can trigger the deletion of a distant element.⁶

NegP COP

NegP COP

NegP Neg

| COP | E|

| AP Neg | Reg | R

 $^{^6}$ It might be claimed that the negation $de\check{gil}$ always undergoes obligatory head movement to v head to eliminate a need for either of these alternatives. The head movement leads $de\check{gil}$ to be high enough to escape the deletion when the copula licenses the deletion of NegP. This seems feasible especially given how it follows from the locality of [E]-feature, however I do not see a reason why a free standing morpheme would undergo such a movement.

Despite no definitive argument favoring one alternative over the other, I assume a local licensing account consistent with the locality of the [E]-feature. Further exploration of non-local licensing remains an avenue for future research.

5 Figuring out the identity

In ellipsis theory, a key question is the extent to which the deleted constituent must be identical to its antecedent.

- i) syntactic isomorphism i.e., a full clausal source (Ross, 1969; Fiengo and May, 1994; Merchant, 2001; Vicente, 2018)
- (29) Somebody_i just left guess who_i [$_{TP}$ t_i just left].
- ii) syntactic non-isomorphism i.e., cleft sources (Vicente, 2008; Van Craenenbroeck, 2010a; Barros, 2012, 2014)
- (30) Somebody_i just left guess who_i [$_{TP}$ it is].

The identity condition on sluicing requires the elided material to be identical to its antecedent in some fashion for the missing element to be recoverable at LF.

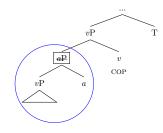
- i. syntactic identity: structural and lexical isomorphism between the antecedent clause and the missing element (Ross, 1969; Sag, 1976; Fiengo and May, 1994; Chung et al., 1995; Rudin, 2019, a.o.)
- ii. semantic identity: Schwarzschild's (1999) e-GIVENness (Merchant, 2001; Van Craenenbroeck, 2010b, a.o.)
- iii. hybrid approach: identity both syntactically and semantically to some extent (Chung, 2013; Merchant, 2013; Barros, 2014)

Ellipsis can fail due to syntactic mismatches even when semantic identity appears intact, highlighting significant challenges with the widely favored semantic identity approach.

On the other hand, low sluicing in Turkish poses a challenge to fully syntactic identity...

- Both the current proposal and Ince's (2006) analysis encounter issues with the identity requirement between the ellipsis site and its antecedent.
- In the current proposal, the presence of the copula depends on a non-verbal projection (aP) serving as the ellipsis site.
- If the antecedent clause lacks a copular verb, it also lacks an aP layer, creating a mismatch with the ellipsis site.
- (31) A: Yağmur biri-ne; kız-dı.
 Yağmur somebody-DAT get.mad-PST
 'Yağmur got mad at someone.'
 - B: Kim-e_i-y-di? who-DAT-COP-PST INT. 'Who?'
- (32) Antecedent
 - TP C

(33) Ellipsis-site



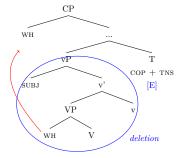
• Similarly, Ince's analysis faces a mismatch when the antecedent lacks an AspP layer due to the absence of an aspect marker or copula, violating the identity requirement.

5.1 A potential solution

A third possible source, which I term the *Copula Insertion Analysis* (CIA), could resolve this identity issue:

- The T head takes a vP complement only when it licenses the deletion of this complement.
- This triggers the insertion of the copula in the T head, analogous to doinsertion in English.

- Consequently, the identity requirement between the ellipsis-site and the corresponding constituent is maintained.
- (34) Copula Insertion Analysis (CIA)



While CIA resolves the syntactic mismatch between the ellipsis-site and the antecedent, it raises some concerns.

Conceptual challenges of CIA:

- Copula is not observed in non-elliptical contexts with only a vP. It exclusively appears with non-verbal constituents (e.g., aP).
- This means that under CIA, the T head must take a vP complement only when it licenses deletion of this constituent.
- This requirement makes CIA fairly abstract and raises questions about whether the proposed derivation is a plausible parse for low sluicing.

Empirical challenges of CIA:

- High negation, marked by $de\check{g}il$ 'not' can only follow non-verbal forms (aPs) and is incompatible with verbal forms (vPs).
- (35) a. Gid-iyor $\mathbf{de\check{gil}}$ - \varnothing -im. go-IPFV not-COP-1SG 'It is not that I am going.'
- c. *Git-ti değil-Ø-im. go-PST not-COP-1SG INT. 'It is not that I went.'
- b. *Git değil-Ø-di-m.
 go not-COP-PST-1SG
 INT. 'It is not that I went.'

and DPs.

• This pattern is also observed with other non-verbal forms, such as adjectives

- (36) Hediye çok ucuz değil **i-di**. gift very cheap not COP-PST 'The gift wasn't very cheap.'
- Recall from Section 4 that değil 'not' can appear with wh-phrases and survive with the remnants, indicating that the ellipsis site **must include** an aP projection for negation to occur.
- CIA as a derivational source fails to meet this requirement due to its lack of an aP layer.

5.2 Solution: head-based syntactic identity

Instead of a rigid syntactic match between the ellipsis-site and the corresponding constituent, I adopt Rudin's (2019) head-based syntactic identity where:

- identity is not assessed over the entire ellipsis site but *head-by-head* for each stranded head
- mismatches associated with moved material are allowed, as such material does not affect the syntactic identity calculation

Rudin (2019) formalizes this approach as follows:

(37) Syntactic condition on sluicing

Given a prospective ellipsis site \mathbf{E} and its antecedent \mathbf{A} , non-pronunciation of the phonological content associated with any head h ϵ \mathbf{E} is licit if at least one of the following conditions holds:

- a. h did not originate within **E**'s eventive core
- b. h has a structure-matching correlate $i \in \mathbf{A}$.

Showing possible mismatches between the antecedent and the ellipsis-site in voice, tense, modality, polarity and finiteness, Rudin (2019) claims that the domain of syntactic identity is restricted to the eventive core stated as follows:

(38) Eventive core

The eventive core of a clause is its highest vP that is associated with an event-introducing predicate.

In line with the idea that the identity is restricted to the highest vP that introduces an event, I argue that the identity in low sluicing in Turkish is also restricted to the lower vP.

- Only material originating within the verbal domain (eventive core) is subject to identity and material above the verbal complex can be mismatched.
- In other words, the mismatches that occur above the vP, which includes the aP projection, does not pose a problem for the identity condition.

6 Conclusion

In this talk, I have investigated (i) what the source(s) for low sluicing is, (ii) the possible licensers of ellipsis and (iii) the ways to solve the identity problem.

I have argued that low sluicing

- i. is best analyzed under a full clause analysis where the deletion of a non-verbal constituent is triggered by a verbal head,
- ii. is akin to VPE in terms of licensing i.e., multiple licensers are possible
- iii. supports Rudin's (2019) proposal that the identity is assessed over the eventive core.

There are still issues that need to be addressed in the further steps:

- the interaction between the position of subject in Turkish and low sluicing
- how island-sensitivity of low sluicing is explained under the deletion analysis licensed by copula
- if low sluicing is restricted to wh-phrases or can be extended to any DP

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