On the timing and mechanics of multiple exponence: Evidence from Armenian verbs

Nikita Bezrukov
Princeton University
bezrukov@princeton.edu

PLC 47 at the University of Pennsylvania

March 19, 2023
Outline of the talk

Preview

What is Armenian?

Basics

Syntax

Vocabulary Insertion

Diachronic context

Circumfixation mechanics
Armenian Indicative marking is a curious case of multiple exponence

We analyze it as post-syntactic, spurious insertion

In terms of derivational mechanics, we analyze it as fission followed by linearization

This has implications for the mechanics of spell out:

Linearization $<$ Fission, Fusion $<$ Vocab Insertion applied cyclically at each node
Armenian

- Armenian is a separate branch of Indo-European.
- Two Standard languages (Eastern, Western), 11 dialect groups [Jah72].
- Today: same group, two dialects: Erzurum (X), Arapgir (O).
Verb basics

- Armenian is primarily head-final, suffixing.
- Core morphemes in the thematic domain attach ornamental elements (glossed as TH) [DG21].

(1) \( \text{lav-ats}^\text{h}-v-i-n \)

\( \text{wash-TH-PASS-TH-3PL} \)

‘(if) they wash themselves’

Erzurum

- This is one of the simplest finite forms.
Armenian is primarily head-final, suffixing.

Core morphemes in the thematic domain attach ornamental elements (glossed as TH) [DG21].

(2) M-Word Structure for (1):
The form in (1) is used to form the Indicative via an affix (glossed as IND).

IND is a prefix in most Armenian varieties. A rare case of prefixation in the language. It’s idiosyncratic.

(3) \[
\begin{array}{c}
g\text{-}\\l\text{əv}-\text{ats}\text{h}-\text{v-i-n}
\end{array}
\]

IND-wash-TH-PASS-TH-3PL

‘they wash themselves’

Standard Western
Adding IND

- Caveat: In principle, IND has a more complex distribution.
- IND is a high, syncretic Mood (Indicative, Conditional) x Polarity (Non-negative) morpheme [Bez22].

(4) M-Word Structure for (1):
Erzurum and Arapgir double IND, placing both markers word-peripherally (circumfixation).

The first IND is a prefix, and the other IND is a suffix.

\[(5) \quad \text{IND-say-TH-3PL-IND} \]

‘they say’

Note: A doubled IND is identical to the prefixal IND in Standard Western semantically, it does not provide added value.

Question: How do we model IND-doubling in Erzurum/Arapgir?
IND-circumfixation vs. Syntax

- IND-circumfixation is post-syntactic [Bez22].
- This is best revealed through interactions with clausal syntax.
- In Erzurum, Wh-words and elements under contrastive focus displace IND to attach to the focused element.
- A single encliticizing IND is observed.

(6) Erzurum

a. \[ k-\text{ŋs-em}_n-g\partial \]
   \boxed{IND\text{-say-TH-3PL-IND truth}}
   ‘They’re right (they say the truth).’

b. \[ v\text{ev}_g\partial \] \boxed{(\text{ŋf} j\text{d})} \text{ŋs-em?}
   \boxed{who IND truth say-TH.3SG}
   ‘Who’s right (who says the truth)?’
Claim: This is the same class of phenomena as T-Agr placement in English.

(7) English
   a. John finished his chores.
   b. What did John finish?

In 7a, a locally available -ed attaches to the verb. In (7b), a displaced -ed receives do-support.
Components of an analysis: English

- No head-movement to T
- Wh- movement to CP, followed by T-to-C head-movement
- Morphological merger (local) combines T with the verb in case WH does not happen.

(8) English

```
CP
  /   |
DP   CP
     /|
     C |TP
     /|
T-Agr |VP
     /|
     ... ...
```
Components of an analysis: Erzurum

- No head-movement to Mood/Pol
- Wh- movement to FocP, followed by Mood/Pol-to-Foc head-movement
- Morphological merger (local) combines T with the verb in case WH does not happen.

(9) Erzurum

```
(9) Erzurum

FocP
  DP
  ...
FocP
  Mood/PolP
    TP
    IND
    ...
```
Components of an analysis: Erzurum

- No head-movement to Mood/Pol
- Wh- movement to FocP, followed by Mood/Pol-to-Foc head-movement
- Morphological merger (local) combines T with the verb in case WH does not happen.
- Circumfixation follows the merger.

(10) Erzurum

```
Mood/PolP
TP  IND
...)
```
No IND-circumfixation is observed if IND is displaced away from the verb.

(11) Erzurum

a. \[k-\Box\text{es-e-n}\Box-g\Box (\text{tfisfd})\]
   \[\text{IND-say-TH-3PL-IND truth}\]
   ‘They’re right (they say the truth).’

b. \[\text{vev } \Box\text{g}_{\Box} (\text{tfisfd}) \Box\text{es-e?}\]
   \[\text{who IND truth say-TH.3SG}\]
   ‘Who’s right (who says the truth)?’

Condition, informally: Double IND if it immediately dominates T within its M-Word.
Upper boundary: IND is doubled post-syntactically.
Lower boundary: IND is doubled before Vocabulary Insertion.
Allomorphy: different allomorphs can be inserted (historically related but not synchronically)

(12) IND allomorphs in Erzurum

<table>
<thead>
<tr>
<th>Irregular</th>
<th>Regular</th>
</tr>
</thead>
<tbody>
<tr>
<td>ku- d-a-[g]ød</td>
<td>k- abr-i-[g]ød</td>
</tr>
<tr>
<td>IND-give-TH.3SG-IND</td>
<td>IND-live-TH.3SG-IND</td>
</tr>
<tr>
<td>(s)he gives’</td>
<td>(s)he lives’</td>
</tr>
</tbody>
</table>

The suffix is always the default form; the prefix can be irregular.

- IND ↔ [g]ød
- IND ↔ k /__V
- IND ↔ ku /__√give,...
Arapgir has a progressive marking pattern that suppresses the suffixal IND.

Negation data are consistent with a pre-VI approach because Prog placement is independent of IND placement.

(13) Arapgir Habituals
a. ku-[-l-a]gu
   IND-cry-TH-IND
   ‘(s)he cries.’

b. tʃhi-[-l-a-r]
   NEG-cry-TH-CN
   ‘(s)he doesn’t cry.’

(14) Arapgir Progressives
a. ku-[-l-a][-n)ə]
   IND-cry-TH-PROG
   ‘(s)he’s crying.’

b. tʃhi-[-l-a-r][-n)ə]
   NEG-cry-TH-CN-PROG
   ‘(s)he’s not crying.’
The incompatibility between IND and Prog is pre-VI, although the exact mechanics is hard to narrow down.

Can be fusion, impoverishment, or zero-insertion.

(15) Arapgir Habituals

a. ku-\l-a-gu
   IND-cry-TH-IND
   ‘(s)he cries.’

b. ku-\l-a-∅-nə
   IND-cry-TH-IND-PROG
   ‘(s)he is crying.’
Origins: grammaticalized /kaj u/ ‘exists and’ + Verb > prefixal /ku/ IND > /k(ə)/ [BD20].

A subset of dialects displays the pressure for a prefix > suffix shift, possibly due to head-finality.

Fieldwork on Erzurum (both endpoints are found in the subdialects):

(16) $\text{k-} \text{abr-i-m}$

IND-live-TH-1SG

‘I live.’

(17) $\text{abr-i-m} \text{[-gə]}$

live-TH-1SG-IND

‘I live.’

(16-17): Variable linearization across Erzurum.
Most Erzurum varieties display mobile affixation, mobile placement wrt the verb [BD20].

(18) Mobile (MS) Erzurum

a. ku-[l-a-m
   IND-cry-TH-1SG
   ‘I cry’

b. k-[abr-i-m
   IND-live-TH-1SG
   ‘I live’

c. xos-i-m-[gə
   speak-TH-1SG-IND
   ‘I speak’

Minimality: switch if the conditions are met.
Mobile affixation

- Assume bottom-up spell out.
- ≺ = precedence, X = the complement of the head in question

(19) Linearization statements:

\[ X \ast \text{IND} \rightarrow X \prec \text{IND} \]
\[
\text{if } X \text{ is C initial and non-minimal}
\]

\[ X \ast \text{IND} \rightarrow \text{IND} \prec X \]

(20) \[
\text{IND}(≺)
\]
\[
\quad \text{IND} \quad \text{T}(≺)
\]
\[
\quad \text{abrim}
\]

(21) \[
\text{IND}(≺)
\]
\[
\text{T}(≺) \quad \text{IND}
\]
\[
\text{xosim}
\]
IND-circumfixation

- IND-circumfixation is partial and can be considered a subcase of mobile marking.

(22) Mobile and circumfixing (MC) Erzurum

a. \[ \text{kula-m-gə} \]
   IND-cry-TH-1SG-IND
   ‘I cry’  Mono-consonantal root

b. \[ \text{kabr-i-m-gə} \]
   IND-live-TH-1SG-IND
   ‘I live’  V-initial

c. \[ \text{xos-i-m-gə} \]
   speak-TH-1SG-IND
   ‘I speak’  C-initial non-minimal
Minimality: switch if the conditions are met.

Doubling patterns involve spurious IND insertion to facilitate the prefix flipping.

Spurious morphemes to satisfy morpho-phonological restrictions:
  - do-support, be-support [EN01, GSW21]
  - spurious morphemes [AMV13, Wol08, Wol13]
Similarly to discontinuous agreement in Semitic [Hew22], modelling spurious insertion as:

1. Fission (Doubling the nodes)
2. Linearization

\[
\text{IND} \\
\text{IND} \quad \text{IND} \left( \prec \right) \\
\text{IND} \quad \text{T} \left( \prec \right) \\
\text{abrim}
\]

(23)

\[
\text{IND} \left( \prec \right) \\
\text{IND} \quad \text{IND} \left( \prec \right) \\
\text{IND} \quad \text{T} \left( \prec \right) \\
\text{abrim}
\]

(24)
Condition on fission

▶ Assume bottom-up spell out.
▶ $\prec = \text{precedence, } X = \text{the complement of the head in question}$

(25) Linearization statements (MS and MC Erzurum):

\[ X \ast \text{IND} \rightarrow X \prec \text{IND} \]
\[ / \text{if } X \text{ is C initial and non-minimal} \]

\[ X \ast \text{IND} \rightarrow \text{IND} \prec X \]

(26) Fission (MC Erzurum):

\[ [\text{IND}(\prec) \ldots] \rightarrow [\text{IND} [\text{IND}(\prec) \ldots]] / \sqrt{\text{Root}} \]

▶ Implies linearization interleaved with VI
Derivational mechanics

Order of operations cyclically applied at node:

1. Linearization
2. Fission (Abstract operations)
3. Vocabulary insertion

```
      IND
     /   /
IND  IND(≺)
/     /
IND  T(≺)
     /   /
    abrim
```

(27)

```
      IND(≺)
     /   /
IND  IND
/     /
IND  T(≺)
     /   /
    abrim
```

(28)
Order of operations cyclically applied at node:
1. Linearization
2. Fission (Abstract operations)
3. Vocabulary insertion

(29) \[ \text{IND} \xrightarrow{\prec} \text{IND} \xrightarrow{\prec} \text{IND}(\prec) \]

(30) \[ \text{IND}(\prec) \xrightarrow{\prec} \text{IND} \]
Armenian Indicative marking is a curious case of multiple exponence

We analyze it as post-syntactic, spurious insertion

In terms of derivational mechanics, we analyze it as fission followed by linearization

This has implications for the mechanics of spell out:

Linearization < Fission, Fusion < Vocab Insertion applied cyclically at each node
References

Karlos Arregi, Neil Myler, and Bert Vaux.

Nikita Bezrukov and Hossep Dolatian.

Nikita Bezrukov.

Hossep Dolatian and Peter Guekguezian.

David Embick and Rolf Noyer.

Ekaterina Georgieva, Martin Salzmann, and Philipp Weisser.