LONG-DISTANCE CONDITIONS ON FLOATING SEGMENTS IN IRANIAN ARMENIAN

Hossep Dolatian

Stony Brook University

September 27, 2021
Table of Contents

- Introduction
- Background
- Perfective converb
  - Floating segment
  - Decomposing the process
  - Long-distance conditions
- Syntax of connected speech
- Conclusion
Joint w/ a Karine Megerdoomian + Afsheen Sharifzadeh + Bert Vaux

Thanks to kindness of Iranian Armenian informants
Joint w/ a Karine Megerdoomian + Afsheen Sharifzadeh + Bert Vaux

Thanks to kindness of Iranian Armenian informants

Title: Long-distance conditions on floating segments in Iranian Armenian

1. Look at a suffix that has a floating segment: -e<ô> or -e<û>
2. Docking the segment is conditioned by presence of an auxiliary to the right
3. But the suffix and Aux don’t need to be adjacent
Joint w/ a Karine Megerdoomian + Afsheen Sharifzadeh + Bert Vaux

Thanks to kindness of Iranian Armenian informants

Title: *Long-distance conditions on floating segments in Iranian Armenian*

1. Look at a suffix that has a floating segment: \( -e<\mathcal{b}> \) or \( -e<\mathcal{t}> \)
2. Docking the segment is conditioned by presence of an auxiliary to the right
3. But the suffix and Aux don’t need to be adjacent

Docking the floating segment is conditioned by long-distance c-command

\[ <C> \rightarrow C \ / \ [ \ _ \ ... \ AUX \ ] \]

- Obviously has effects on the morphology-phonology-syntax interface
- Modelable with classical but under-used Direct Reference strategies (Kaisse, 1985)
• Introduction

• Background

• Perfective converb
  • Floating segment
  • Decomposing the process
  • Long-distance conditions

• Syntax of connected speech

• Conclusion
Table of Contents

Introduction

Background

Perfective converb
- Floating segment
- Decomposing the process
- Long-distance conditions

Syntax of connected speech

Conclusion
Iranian Armenian

- Armenian is Indo-European language with two standard lects and many non-standard lects
- Standard: Western (Ottoman Empire) and Eastern (Armenia, Soviet Union, Persian Empire)
- In Iran, Armenian population is diglossic/triglossic
  - Persian is spoken with non-Armenian
  - Eastern spoken as formal register + school + literary
  - Spoken ‘dialect’ as informal register for spoken communication
- Focus on spoken Iranian Armenian:
  - Developed + spoken in Tehran
  - Spoken by Iranian diaspora (LA)
  - Variably called Persian Armenian, Iranian Armenian, or Tehrani Armenian
- FYI: the rhotic is /r/ in Armenia, and a /ɾ/ in Iran
Syntax and morphology

- Eastern and (Tehrani) Iranian have largely similar syntax and morphology
- Basic syntax is SOV, and morphology is suffixing
- Verbal inflection is mainly periphrastic
- Most tenses utilize a *converb* + inflected *auxiliary*
- Following is Iranian

(1) jes gi.i kʰ-ə gər-um =em
    I book-DEF write-IMPF am
    ‘I am writing the book.’

(2) du gi.i kʰ-ə kətʰ-um =es
    you book-DEF read-IMPF are
    ‘You are reading the book.’

- Syllabification: [gə.ru.mem]
In the base case, inflected auxiliary is after the verb

(3) \text{jes giôk}^{h-\emptyset} \text{gô-um} \quad =\text{em}
    \text{I book-DEF write-IMPF am}

‘I am writing the book.’

Auxiliary is mobile and shifts leftward when the sentence has...

Negation:

(4) \text{jes giôk}^{h-\emptyset} \text{tʃ}^{h} =\text{em} \text{gô-um}
    \text{I book-DEF NEG=am write-IMPF}

‘I am not writing the book.’
Auxiliary movement

- In the base case, inflected auxiliary is after the verb

(5) jes gi.ikʰ-ə̃ gəɾi-um =em
    I   book-DEF   write-IMPF   am

‘I am writing the book.’

- Auxiliary is mobile and shifts leftward when the sentence has...

- Bare object:

(6) jes gi.ikʰ =em gəɾi-um
    I   book   =am   write-IMPF

‘I am writing books.’
Auxiliary movement

- In the base case, inflected auxiliary is after the verb

  (7) jes gi.ıkʰ-ə gəɾ-um =em
      I book-DEF write-IMPF am

  ‘I am writing the book.’

- Auxiliary is mobile and shifts leftward when the sentence has...

- Narrow focus:

  (8) jes =em gi.ıkʰ-ə gəɾ-um
      I =am book-DEF write-IMPF

  ‘I am writing the book.’
What to know

- Looks like a lot of syntax and information structure goes into auxiliary placement
- But we don’t care about that 😊
- What matters is that the auxiliary can move
- For some converbs like the imperfective -um, the suffix stays constant with or without the auxiliary

<table>
<thead>
<tr>
<th>Base: 'I am writing the book.'</th>
</tr>
</thead>
<tbody>
<tr>
<td>jes</td>
</tr>
<tr>
<td>I book-DEF</td>
</tr>
<tr>
<td>Neg:</td>
</tr>
<tr>
<td>Bare O:</td>
</tr>
<tr>
<td>Subj Focus:</td>
</tr>
</tbody>
</table>

- That will also be the case for the perfective suffix in Eastern, but not Iranian
**Table of Contents**

- **Introduction**
- **Background**
- **Perfective converb**
  - Floating segment
  - Decomposing the process
  - Long-distance conditions
- **Syntax of connected speech**
- **Conclusion**
In Eastern, the perfective converb is formed by the suffix -el

\[(9)\] \text{j}es \text{gir}k^h-\text{ə} \text{gər-el} \quad =em
I \quad \text{book-DEF} \quad \text{write-PERF} \quad =am

‘I have written the book.’

Syllabification: [gə.re.ləm]

In Eastern, this suffix stays constant with or without the auxiliary

<table>
<thead>
<tr>
<th>Base:</th>
<th>‘I have written the book.’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neg:</td>
<td>jes \text{gir}k^h-\text{ə} \quad tʃ^h =em \quad \text{gər-el}</td>
</tr>
<tr>
<td>Bare O:</td>
<td>jes \text{gir}k^h \quad =em \quad \text{gər-el}</td>
</tr>
<tr>
<td>Subj Focus:</td>
<td>jes \quad =em \quad \text{gir}k^h-\text{ə} \quad \text{gər-el}</td>
</tr>
</tbody>
</table>
In contrast in Iranian, the perfective suffix is -el or -e\text{\textae} (people vary)

\begin{equation}
\text{j\text{\textae}g\text{\textae}k^{\text{\textae}-\text{\textae}}} \quad \text{g\text{\textae}el/e\text{\textae}} \quad =\text{em}
\end{equation}

\begin{tabular}{ll}
I & book-DEF \\
& write-PERF
\end{tabular} =am

‘I have written the book.’

- Syllabification: [g\text{\textae}.e.l\text{\textae}]
- Syllabification: [g\text{\textae}.e.e.l\text{\textae}]
Perfective converb in Iranian

- In contrast in Iranian, the perfective suffix is -el or -e\(\alpha\) (people vary)

\[
\text{(11)} \quad \text{jes } \text{gi\(\mathring{k}\)-\(\alpha\) g\(\varepsilon\)-el/e\(\alpha\)} \quad =\text{em}
\]

I book-DEF write-PERF =am

‘I have written the book.’

- Syllabification: [g\(\varepsilon\)-i.e.lem]
- Syllabification: [g\(\varepsilon\)-i.e.iem]
- When the auxiliary shifts, the suffix loses its liquid

<table>
<thead>
<tr>
<th></th>
<th>jes</th>
<th>gi(\mathring{k})-(\alpha)</th>
<th>g(\varepsilon)-el/e(\alpha)</th>
<th>=em</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base:</td>
<td>I</td>
<td>book-DEF</td>
<td>write-PERF</td>
<td>am</td>
</tr>
<tr>
<td>‘I have written the book.’</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>jes</th>
<th>gi(\mathring{k})-(\alpha)</th>
<th>t(\mathring{h}) =em</th>
<th>g(\varepsilon)-e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neg:</td>
<td>jes</td>
<td>gi(\mathring{k})-(\alpha)</td>
<td></td>
<td>g(\varepsilon)-e</td>
</tr>
<tr>
<td>Bare O:</td>
<td>jes</td>
<td>gi(\mathring{k}) =em</td>
<td></td>
<td>g(\varepsilon)-e</td>
</tr>
<tr>
<td>Subj Focus:</td>
<td>jes</td>
<td>=em</td>
<td>gi(\mathring{k})-(\alpha)</td>
<td>g(\varepsilon)-e</td>
</tr>
</tbody>
</table>
So far we seen different types of suffix behavior

1. Imperfective -*um* stays constant in Eastern and Iranian

   Base: \[ \text{g@ô-*um} \quad =\text{em} \] ‘I am writing’
   Neg: \[ \text{tj}^h =\text{em} \quad \text{g@ô-*um} \] ‘I am not writing’
   Neg(=is) write-IMPF (=is)

2. Perfective -*el* is constant in Eastern

   Base: \[ \text{g@r-*el} \quad =\text{em} \] ‘I have written’
   Neg: \[ \text{tj}^h =\text{em} \quad \text{g@r-*el} \] ‘I have not written’
   Neg(=is) write-PERF (=is)

3. Perfective -*el/e*r is variable in Iranian

   Base: \[ \text{g@r-*el/e*r} \quad =\text{em} \] ‘I have written’
   Neg: \[ \text{tj}^h =\text{em} \quad \text{g@r-*e} \] ‘I have not written’
   Neg(=is) write-PERF (=is)

Q: when and why does this suffix lose its liquid?
Questions and Answers

- We’ll focus on Iranian perfective and its liquid loss
  
  Base: \texttt{gəɾ-el/eɾ} \texttt{=em} ‘I have written’
  
  Neg: \texttt{tʃʰ=em} \texttt{gəɾ-e} ‘I have not written’
  
  Neg(=is) \texttt{write-PERF} (=is)

Questions and Answers

1. Target of liquid deletion?
   - Morpheme specific = the perfective suffix
   - Representationally the liquid is floating

2. What blocks liquid deletion?
   - Morpheme-specific
   - Liquid is retained if there’s a ‘close-enough’ auxiliary

3. Relationship between target and trigger?
   - Liquid deletes if auxiliary is to the left of the liquid
   - Liquid can surface if auxiliary is the right even if not local
Questions and answers

- We’ll focus on Iranian perfective and its liquid loss
  Base: \( \text{g@R-el/e.r} = \text{em} \) ‘I have written’
  Neg: \( \text{tʃh} = \text{em} \) \( \text{g@R-e} \) ‘I have not written’
  Neg(=is) \( \text{write-PERF} (=\text{is}) \)

- Questions and answers
  1. Target of liquid deletion?
Questions and answers

- We’ll focus on Iranian perfective and its liquid loss
  Base: \[ gər-el/e\ddot{e} \] \[ =em \] ‘I have written’
  Neg: \[ t\ddot{j}h = em \] \[ gər-e \] ‘I have not written’
  Neg(=is) \[ write\text{-PERF} (=is) \]

- Questions and answers
  1. Target of liquid deletion?
     ★ Morpheme specific = the perfective suffix
     ★ Representationally the liquid is floating
  2. What blocks liquid deletion?
Questions and answers

- We’ll focus on Iranian perfective and its liquid loss
  
  Base: \[ g\,\text{er-el/ei} \quad =\text{em} \quad \text{‘I have written’} \]
  
  Neg: \[ \text{tf}^{\text{h}} =\text{em} \quad g\,\text{er-e} \quad \text{‘I have not written’} \]
  
  Neg(=is) \quad \text{write-PERF} \quad (=\text{is})

- Questions and answers
  
  1. Target of liquid deletion?
     
     ★ Morpheme specific = the perfective suffix
     
     ★ Representationally the liquid is floating

  2. What blocks liquid deletion?
     
     ★ Morpheme-specific
     
     ★ Liquid is retained if there’s a ‘close-enough’ auxiliary

  3. Relationship between target and trigger?
We’ll focus on Iranian perfective and its liquid loss

Base: \( g\text{\textael}/\text{e} \text{r} \) =em ‘I have written’

Neg: \( \text{t}^{\text{h}} =\text{em} \) \( g\text{\textael} -\text{e} \) ‘I have not written’

Neg(=is) write-PERF (=is)

Questions and answers

1. Target of liquid deletion?
   - Morpheme specific = the perfective suffix
   - Representationally the liquid is floating

2. What blocks liquid deletion?
   - Morpheme-specific
   - Liquid is retained if there’s a ‘close-enough’ auxiliary

3. Relationship between target and trigger?
   - Liquid deletes if auxiliary is to the left of the liquid
   - Liquid can surface if auxiliary is the right even if not local
Final liquid deletion is restricted to this perfective suffix

Final liquids in roots and in other suffixes don’t delete

\[
\begin{align*}
k\circ \ell & \quad \text{‘rock’} \\
k\circ \ell - e & \quad \text{‘rock-PL’}
\end{align*}
\]

The perfective -el/e is ‘special’ in that it deletes

Represent it as a consisting of a floating segment, cf. the stable segments in imperfective -um

\[
\begin{array}{c|c|c}
\text{-e<} & \text{V} & \text{C} \\
\text{l>}/ \text{ or } /e< & | & | \\
\text{-} & \text{V} & \text{C} \\
\text{-} & \text{-u} & \text{m}
\end{array}
\]

Q: What allows the liquid to dock/anchor and surface?
Blocker of deletion

- Liquid surfaces when there is an auxiliary to the right
  
  (12)  \( \text{d̃onin} \quad \text{təv-ɛ\text{=em}} \quad \text{θt}^\text{h} \text{or-ə} \)
  
  John \quad \text{give-PERF=am} \quad \text{chair-DEF}

  ‘I have given the chair to John’

- The auxiliary is always V-initial: \( e, i, \varphi \)
**Blocker of deletion**

- Liquid surfaces when there is an auxiliary to the right

  \[\begin{align*}
  \text{d}\text{z}onin & \quad \text{t}\text{e}v-\text{e}r \Rightarrow \text{em} \\
  \text{John} & \quad \text{give-PERF} \Rightarrow \text{am} \quad \text{chair-DEF}
  \end{align*}\]

  ‘I have given the chair to John’

- The auxiliary is always V-initial: \(e, i, o\)

- A following V-initial word is not good enough to license the liquid

  \[\begin{align*}
  \text{d}\text{z}onin & \Rightarrow \text{em} \\
  \text{John} & \Rightarrow \text{am} \quad \text{give-PERF} \quad \text{chair-DEF}
  \end{align*}\]

  ‘I have given the chair to JOHN’

- This means we got morpheme-specificity on both sides of the equation
  
  - The suffix is ‘unique’ because it deletes
  - The auxiliary is ‘unique’ because it blocks deletion

  → We can’t let *just* the phonology handle liquid deletion.
Morphological docking

- The floating segment in -el/eI is defective because it sometimes delete
- But its docking depends on the morphology: being before the auxiliary

\[
\begin{align*}
\langle C \rangle & \rightarrow C / _- \text{AUX} \\
\end{align*}
\]

- Or more abstractly

\[
\begin{array}{c}
\begin{array}{ccc}
C & C & C \\
| & | & |
\end{array} \\
X & X & \rightarrow X & X & / _- \text{AUX}
\end{array}
\]
Morphological docking

- The floating segment in -el/eI is defective because it sometimes delete
- But its docking depends on the morphology: being before the auxiliary

\[ <C> \rightarrow C / _{\text{AUX}} \]

- Or more abstractly

\[
\begin{array}{c}
\text{C} \\
\mid \\
\text{X X} \\
\end{array} \rightarrow \begin{array}{c}
\text{C} \\
\mid \\
\text{X X} \\
\end{array} / _{\text{AUX}}
\]

- Simple derivation

<table>
<thead>
<tr>
<th></th>
<th>‘I have written’</th>
<th>‘I have not written’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input</td>
<td>gər-e&lt;.r&gt; =em</td>
<td>tʃʰ gər-e&lt;.r&gt; =em</td>
</tr>
<tr>
<td>Syntax (movement)</td>
<td>tʃʰ =em gər-e&lt;.r&gt;</td>
<td></td>
</tr>
<tr>
<td>Morphophonology (docking)</td>
<td>gər-e =em</td>
<td>tʃʰ =em gər-e</td>
</tr>
</tbody>
</table>
Long-distance conditions

- So far, we’ve seen that the liquid is dropped when the auxiliary shifts leftward

<table>
<thead>
<tr>
<th></th>
<th>Base: ‘I have written the book.’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neg: jes giₘₖʰ-ᵉ tₗʰ =em</td>
<td>gₗᵢᵽ-e</td>
</tr>
<tr>
<td>Bare O: jes giₘₖʰ =em</td>
<td>gₗᵢᵽ-e</td>
</tr>
<tr>
<td>Subj Focus: jes =em giₘₖʰ-ᵉ</td>
<td>gₗᵢᵽ-e</td>
</tr>
</tbody>
</table>

- It appears that liquid surfaces WHEN the auxiliary is immediately to the right

- But, liquid docking doesn’t need to be adjacent to the auxiliary, just before it
LONG-DISTANCE CONDITIONS

• Coordination lets us see long-distance conditions in docking
• Base case, we coordinate two sets of verb + auxiliary combinations

(16)  χəm-ei =em kəm kei-ei =em
  drink-PERF =am or eat-PERF =am
  ‘I have drunk or have eaten.’

• Both verbs have their liquid surface because before an auxiliary
Long-distance conditions

- Coordination lets us see long-distance conditions in docking
- Base case, we coordinate two sets of verb + auxiliary combinations

\[(18)\] \underline{\chiem-ei} \text{=em} \quad \underline{kom \ kei-ei} \text{=em}

\underline{drink-PERF =am} \quad \text{or} \quad \underline{eat-PERF =am}

‘I have drunk or have eaten.’

- Both verbs have their liquid surface because before an auxiliary
- Can reduce the coordination by dropping the first auxiliary

\[(19)\] \underline{\chiem-ei} \quad \underline{kom \ kei-ei} \text{=em}

\underline{drink-PERF} \quad \text{or} \quad \underline{eat-PERF =am}

‘I have drunk or eaten.’

- Notice the subtly different translation
  - Some speakers ‘feel’ that 2-aux is more like ’exclusive-or’
- Verb1 keeps the liquid thanks to the rightmost auxiliary
Reduced coordination

- Reduced coordinations use only one auxiliary with two or more converbs
- The liquid surfaces because of high-scoping auxiliary
- Base: V1 or V2 aux

\[(20) \quad \underline{\chi\text{em-eri}} \quad \underline{\text{kom kei-eri}} \quad =\text{em} \]

\text{drink-PERF or eat-PERF =am}

‘I have drunk or eaten.’
Reduced coordination

- Reduced coordinations use only one auxiliary with two or more converbs
- The liquid surfaces because of high-scoping auxiliary
- Base: V1 or V2 aux

\[
\begin{align*}
\chi{\text{em-e}i} & \text{ kōm ke}i-ei \quad =\text{em} \\
\text{drink-PERF or eat-PERF} & =\text{am} \\
\end{align*}
\]

‘I have drunk or eaten.’

- Neg: Aux V1 or V2

\[
\begin{align*}
\text{tʃ}^h =\text{em} \quad \chi{\text{em-e}} & \text{ kōm ke}i-e \\
\text{NEG=am drink-PERF or eat-PERF} & =\text{am} \\
\end{align*}
\]

‘I have not drunk or eaten.’

- Focus: Aux V1 or V2

\[
\begin{align*}
\text{jes} =\text{em} \quad \chi{\text{em-e}} & \text{ kōm ke}i-e \\
\text{I=am drink-PERF or eat-PERF} & =\text{am} \\
\end{align*}
\]

‘I have drunk or eaten.’
Reduced coordination

- Same patterns with a vowel-initial conjunction

\[ \text{X@m-eô} \text{drink-perf} \text{and} \text{keô-eô} \text{eat-perf} = \text{em} = \text{am} \]

'I have drunk and eaten.'

\[ > \text{tS} \text{h} = \text{em} \text{neg} = \text{am} \text{X@m-e} \text{drink-perf} \text{and} \text{keô-e} \text{eat-perf} \]

'I have not drunk and eaten.'

\[ \text{jes} = \text{em} \text{I} = \text{am} \text{X@m-e} \text{drink-perf} \text{and} \text{keô-e} \text{eat-perf} \]

'I have drunk and eaten.'
Reduced Coordination

- Same patterns with a vowel-initial conjunction
- Base: V1 and V2 aux

(29) \( \chi\text{em-e}u \text{ ke}\text{i-e} =\text{em} \)
drink-PERF and eat-PERF =am

‘I have drunk and eaten.’
Reduced Coordination

- Same patterns with a vowel-initial conjunction
- Base: V1 and V2 aux

$$ (32) \quad \chi\emph{m-e} \text{ u } \text{kei-e} \quad =\text{em} $$

drink-PERF and eat-PERF =am

‘I have drunk and eaten.’

- Neg: Aux V1 and V2

$$ (33) \quad \widehat{t}^{\text{th}} =\text{em} \quad \chi\emph{m-e} \text{ u } \text{kei-e} $$

NEG=am drink-PERF and eat-PERF

‘I have not drunk and eaten.’

- Focus: Aux V1 and V2

$$ (34) \quad \text{jes} =\text{em} \quad \chi\emph{m-e} \text{ u } \text{kei-e} $$

I=am drink-PERF and eat-PERF

‘I have drunk and eaten.’
C-COMMAND AND DOCKING

• The coordination data show that the liquid surfaces if there’s an auxiliary somewhere later, not necessarily adjacent

\[(35) \ \chi_\text{em-ei} \quad \text{kam kei-ei} \quad =\text{em}\]

\[\text{drink-PERF} \quad \text{or} \quad \text{eat-PERF} =\text{am}\]

‘I have drunk or eaten.’

• For our docking rule, the liquid is docked if there’s a Aux that is rightward (= precedes and c-commands)

\[<\text{C}> \quad \rightarrow \quad \text{C} \quad / \quad [ \_ \_ \_ \_ \_ \_ \_ \_ \_ \_ \ AUX \ ]\]
C-command and docking

- The coordination data show that the liquid surfaces if there’s an auxiliary somewhere later, not necessarily adjacent

\[(36) \quad \chi\wedge m-e_i \quad k\wedge m \quad ke_i-e_i \quad =em\]

drink-PERF or eat-PERF =am

‘I have drunk or eaten.’

- For our docking rule, the liquid is docked if there’s a Aux that is rightward (= precedes and c-commands)

\[<C> \rightarrow C / [ \_ \_ \_ \_ \_ \_ \ Aux ]\]

- Derivation

\[
\begin{align*}
\text{Input} & : \quad \chi\wedge m-e<r> \quad kam \quad ke_i-e<r> \quad =em \\
\text{Syntax} & : \quad t^h \chi\wedge m-e<r> \quad kam \quad ke_i-e<r> \quad =em \\
\text{Docking} & : \quad \chi\wedge m-e_i \quad kam \quad ke_i-e_i \quad =em \\
\end{align*}
\]

‘I have drunk or eaten’

‘I have not drunk or eaten’
Table of Contents

Introduction

Background

Perfective converb
  - Floating segment
  - Decomposing the process
  - Long-distance conditions

Syntax of connected speech

Conclusion
What is this rule

- The ingredients so far:
  1. Representation: The suffix has a floating segment: -e<l> or -e<r>
  2. Derivation: docking based on long-distance c-command by auxiliary

\[
\langle C \rangle \rightarrow C \quad / \quad [ \_ \ldots \text{Tense} ]
\]
What is this rule

- The ingredients so far:
  1. Representation: The suffix has a floating segment: -e<l> or -e<r>
  2. Derivation: docking based on long-distance c-command by auxiliary

<\text{C}> \rightarrow \text{C} \; / \; [ \_ \; \ldots \; \text{AUX} ]

- This looks funny because:
  - rule applies across words
  - rule affects phonological form of Word1 (suffix)
  - rule is sensitive to morphosyntactic label of Word2 (aux)
  - rule references c-command that can be long-distant

→ rule is post-lexical but syntactically conditioned, not phonologically
What is this rule

• The ingredients so far:
  1. Representation: The suffix has a floating segment: -e<\l> or -e<\r>
  2. Derivation: docking based on long-distance c-command by auxiliary

\[ \langle C \rangle \rightarrow C / [ \_ \_ ... \text{ AUX } ] \]

• This looks funny because:
  ▪ rule applies across words
  ▪ rule affects phonological form of Word1 (suffix)
  ▪ rule is sensitive to morphosyntactic label of Word2 (aux)
  ▪ rule references c-command that can be long-distant

→ rule is post-lexical but syntactically conditioned, not phonologically

• Looks like a crazy rule, but there’s precedents!
  = syntax-based rule of external sandhi: P1 rules (Kaisse, 1985)
  ... references verb + Tense feature chains (Elordieta, 1997)
  ... and c-command in tone (McPherson and Heath, 2016)
More long-distance

- So docking is long-distantly conditioned

\[ <C> \rightarrow C / [ \_ \_ \_ \_ \_ \_ AUX ] \]
• So docking is long-distantly conditioned
  \[
  \langle C \rangle \rightarrow C / [ _ \ldots \text{AUX} ]
  \]
• It also applies when got 3 verbs conjoined

(39) \underline{ek-el} = \text{em} \quad \underline{tes-el} = \text{em} \quad \underline{h\nu\chi^h-el} = \text{em}

\begin{align*}
\text{come-PERF} &= \text{am} \\
\text{see-PERF} &= \text{am} \\
\text{conquer-PERF} &= \text{am}
\end{align*}

‘I have come, have seen, have conquered’

(40) \underline{ek-el} \quad \underline{tes-el} \quad \underline{h\nu\chi^h-el} = \text{em}

\begin{align*}
\text{come-PERF} &\quad \text{see-PERF} \\
\text{conquer-PERF} &= \text{am}
\end{align*}

‘I have come, seen, conquered’
Adjunction of clitics

- Because docking is essentially morphological, adjoined clitics don’t matter

(41)  a. $\text{kei-e}_i=\text{em}$
      eat-PERF=am
      ‘I have eaten’

  b. $\overset{\text{ti}}{\text{h}}=\text{em} \text{ kei-e}$
      NEG=am eat-PERF
      ‘I have not eaten’

- Clitic $el$ can mean a mix of ’even, also, at all’ depending on position
Adjunction of clitics

• Because docking is essentially morphological, adjoined clitics don’t matter

(44) a. ke'i-e='em
    eat-PERF=am
    ‘I have eaten’

b. tʃʰ='em ke'i-e
    NEG=am eat-PERF
    ‘I have not eaten’

• Clitic el can mean a mix of ’even, also, at all’ depending on position

• Adding the clitic at the end doesn’t help the liquid surface

(45) a. ke'i-e='em=el
    eat-PERF=am=CL
    ‘I have eaten already!’

b. tʃʰ='em ke'i-e=el
    NEG=am eat-PERF=CL
    ‘I have not eaten anymore’

• Adding clitic in between the aux and verb doesn’t do anything either

(46) a. ke'i-e=el='em
    eat-PERF=CL=am
    ‘I have also eaten’

b. tʃʰ='em=el ke'i-e
    NEG=am=CL eat-PERF
    ‘Also, I have not eaten’
**Imperfectives**

- Another suffix behaves the same!
- For regular verbs, the imperfective converb uses the suffix `-um`. The suffix is stable

<table>
<thead>
<tr>
<th></th>
<th>jes</th>
<th>giəkʰ-ə</th>
<th>gər-um</th>
<th>=em</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base:</td>
<td>I book-DEF</td>
<td>write-IMPF</td>
<td>am</td>
<td></td>
</tr>
</tbody>
</table>

Base: ‘I am writing the book.’

<table>
<thead>
<tr>
<th></th>
<th>jes</th>
<th>giəkʰ-ə</th>
<th>tjʰ=em</th>
<th>gər-um</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neg:</td>
<td>jes</td>
<td>giəkʰ-ə</td>
<td>=em</td>
<td>gər-um</td>
</tr>
<tr>
<td>Bare O:</td>
<td>jes</td>
<td>giəkʰ</td>
<td>=em</td>
<td>gər-um</td>
</tr>
<tr>
<td>Subj Focus:</td>
<td>jes</td>
<td>giəkʰ-ə</td>
<td>gər-um</td>
<td></td>
</tr>
</tbody>
</table>
**Imperfectives**

- Another suffix behaves the same!
- For regular verbs, the imperfective converb uses the suffix `-um`. The suffix is stable

<table>
<thead>
<tr>
<th></th>
<th>jes</th>
<th>gḭkʰ-ə</th>
<th>gəʔ-um</th>
<th>=em</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base:</td>
<td>I book-DEF</td>
<td>write-IMPF</td>
<td>am</td>
<td></td>
</tr>
<tr>
<td>Neg:</td>
<td>jes</td>
<td>gḭkʰ-ə</td>
<td>tʃʰ =em</td>
<td>gəʔ-um</td>
</tr>
<tr>
<td>Bare O:</td>
<td>jes</td>
<td>gḭkʰ =em</td>
<td>gəʔ-um</td>
<td></td>
</tr>
<tr>
<td>Subj Focus:</td>
<td>jes =em</td>
<td>gḭkʰ-ə</td>
<td>gəʔ-um</td>
<td></td>
</tr>
</tbody>
</table>

- But some irregulars use the suffix `-is`, and the `/s/ is a floating segment

<table>
<thead>
<tr>
<th></th>
<th>jes</th>
<th>gḭkʰ-ə</th>
<th>təl-is</th>
<th>=em</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base:</td>
<td>I book-DEF</td>
<td>give-IMPF</td>
<td>am</td>
<td></td>
</tr>
<tr>
<td>Neg:</td>
<td>jes</td>
<td>gḭkʰ-ə</td>
<td>tʃʰ =em</td>
<td>təl-i</td>
</tr>
<tr>
<td>Bare O:</td>
<td>jes</td>
<td>gḭkʰ =em</td>
<td>təl-i</td>
<td></td>
</tr>
<tr>
<td>Subj Focus:</td>
<td>jes =em</td>
<td>gḭkʰ-ə</td>
<td>təl-i</td>
<td></td>
</tr>
</tbody>
</table>
For the irregular imperfective -\(i(s)\), the floating segment /s/ docks in the same places as the floating liquid.

**Base:** ‘I am giving the book.’

<table>
<thead>
<tr>
<th></th>
<th>jes</th>
<th>giåk(^h)-(o)</th>
<th>t(ô)l-is</th>
<th>=em</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
<td>book-DEF</td>
<td>give-IMPF</td>
<td>am</td>
</tr>
</tbody>
</table>

**Neg:**

<table>
<thead>
<tr>
<th></th>
<th>jes</th>
<th>giåk(^h)-(o)</th>
<th>t(ô)h=em</th>
<th>t(ô)l-i</th>
</tr>
</thead>
</table>

**Bare O:**

<table>
<thead>
<tr>
<th></th>
<th>jes</th>
<th>giåk(^h)=em</th>
<th>t(ô)l-i</th>
</tr>
</thead>
</table>

**Subj Focus:**

<table>
<thead>
<tr>
<th></th>
<th>jes=em</th>
<th>giåk(^h)-(o)</th>
<th>t(ô)l-i</th>
</tr>
</thead>
</table>
FLOATING IMPERFECTIVE

- For the irregular imperfective -i(s), the floating segment /s/ docks in the SAME places as the floating liquid

<table>
<thead>
<tr>
<th></th>
<th>jeş</th>
<th>gi.əkʰ-ə</th>
<th>təɬ-is</th>
<th>=em</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>book-DEF</td>
<td>give-IMPF</td>
<td>am</td>
<td></td>
</tr>
</tbody>
</table>

Base: ‘I am giving the book.’

<table>
<thead>
<tr>
<th></th>
<th>jeş</th>
<th>gi.əkʰ-ə</th>
<th>tʃʰ =em</th>
<th>təɬ-i</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neg:</td>
<td>jeş</td>
<td>gi.əkʰ-ə</td>
<td>tʃʰ =em</td>
<td>təɬ-i</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>jeş</th>
<th>gi.əkʰ =em</th>
<th>təɬ-i</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bare O:</td>
<td>jeş</td>
<td>gi.əkʰ =em</td>
<td>təɬ-i</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>jeş =em</th>
<th>gi.əkʰ-ə</th>
<th>təɬ-i</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subj Focus:</td>
<td>jeş =em</td>
<td>gi.əkʰ-ə</td>
<td>təɬ-i</td>
</tr>
</tbody>
</table>

- We even see the same docking behavior in coordination

(49) təɬ-is =em kəm tʃə’-um =em
give-IMPF =am or sell-IMPF =am

‘I am giving or am selling.’

(50) təɬ-is kəm tʃə’-um =em
give-IMPF or sell-IMPF =am

‘I am giving or selling.’

- TLDR: The floating suffix in /-i(s)/ undergoes the exact same docking rules as the perfective /-e<1/>/
• Looked at a floating segment that seems to obey simple phonological locality and phonological syllabification
• But once you look at a larger pool of data, it’s highly morphologized
• And it’s highly syntax-ized
→ Requires morphophonological rules to reference c-command across words
• Still a lot more to say though based on...
  ‣ Speaker variation and code-switching (33)
  ‣ Diachronic origins (36)
  ‣ Still gathering more data from more speakers to get more variation


Data in talk came from the spoken vernacular of Iranian Armenian

But recall that in Iran, the speakers of Iranian also learn Eastern as a formal register

But for Iranian Armenians in the diaspora (LA), they only acquire Iranian

The data of talk was primarily from these mono-lectal speakers who only know Iranian

Bi-dialectal speakers from Iran show subtle variation
**Code-switching**

- Standard Eastern doesn’t drop, while Iranian drops when the auxiliary isn’t rightward

<table>
<thead>
<tr>
<th></th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern</td>
<td>$g\bar{\tau}-el\overset{=}{=}em$</td>
<td>$t\overset{h}{=}em\ g\bar{\tau}-el$</td>
</tr>
<tr>
<td>Mono-lectal Iranian</td>
<td>$g\bar{\eta}-el\overset{=}{=}em$</td>
<td>$t\overset{h}{=}em\ g\bar{\eta}-e$</td>
</tr>
</tbody>
</table>

‘I have written’ ‘I have not written’

- If one is proficient in both Iranian and Eastern, then they can switch between them based on formality

<table>
<thead>
<tr>
<th></th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilectal-lectal Iranian</td>
<td>$g\bar{\eta}-el\overset{=}{=}em$</td>
<td>$t\overset{h}{=}em\ g\bar{\eta}-el$</td>
</tr>
<tr>
<td></td>
<td>$t\overset{h}{=}em\ g\bar{\eta}-e$</td>
<td>$t\overset{h}{=}em\ g\bar{\eta}-e$</td>
</tr>
</tbody>
</table>

‘I have written’ ‘I have not written’

→ Based on register, speakers choose either floating /-e<l>/ or non-floating /-el/
Coordination

- Choice of UR for the suffix is constant within a coordination though
- For Eastern, don’t drop the liquid in coordination. But for mono-lectal Iranian, obligatorily drop the liquid if auxiliary is leftward

<table>
<thead>
<tr>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern</td>
<td>ḥem-el kam ker-el =em ṭfʰ =em ḥem-el kam ker-el</td>
</tr>
<tr>
<td>Mono Iranian</td>
<td>ḥem-el kam keɾ-el =em ṭfʰ =em ḥem-e kam keɾ-e</td>
</tr>
</tbody>
</table>

“gloss”: written OR eaten have not-have written OR eaten

- The bi-dialectal can ‘optionally’ drop the liquid when aux is leftward, but it has to apply to both liquids

<table>
<thead>
<tr>
<th>“gloss”:</th>
<th>written OR eaten have not-have written OR eaten</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bi-dia. Iranian</td>
<td>ḥem-el kam keɾ-el =em ṭfʰ =em ḥem-e kam keɾ-e</td>
</tr>
</tbody>
</table>

→ code-switching grammars must use same suffix UR in both conjuncts
Diachronic origins

- It is possible that docking by c-command developed from casual speech reduction in colloquial Eastern
- Standard Eastern has the suffix liquid stay constant regardless of auxiliary placement

<table>
<thead>
<tr>
<th></th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Eastern</td>
<td>gər-el(=em)</td>
<td>tʃ(=em) gər-el</td>
</tr>
<tr>
<td>Colloq Eastern</td>
<td>gər-el(=em)</td>
<td>tʃ(=em) gər-el</td>
</tr>
<tr>
<td></td>
<td></td>
<td>tʃ(=em) gər-e</td>
</tr>
</tbody>
</table>

‘I have written’ ‘I have not written’

- But it’s reported that casual speech allows optionally reducing the suffix’s liquid when uncliticized. Some native Eastern speakers told me...
  - they do it optionally, others don’t at all
  - it’s common, others told me it’s ‘vulgar’ and uncommon
  - they only drop the liquid for some verbs, others for all verbs
- Sadly, the process is too under-documented to know what’s up,
Liquid dropping in colloquial Eastern seems to be halfway between standard Eastern and monolectal Iranian.

In Iranian, both liquids are dropped or maintained in coordination. But in colloquial Eastern, two speakers told me they can utter positive coordination without matching liquids.

<table>
<thead>
<tr>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>xem-el kam ker-el =em</td>
<td>tʃʰ =em xem-el kam ker-el</td>
</tr>
<tr>
<td>xem-e kam ker-el =em</td>
<td>tʃʰ =em xem-e kam ker-e</td>
</tr>
<tr>
<td>*tʃʰ =em xem-e kam ker-el</td>
<td>*tʃʰ =em xem-el kam ker-e</td>
</tr>
</tbody>
</table>

But deleting before V feels odd for one speaker, fine for another:

- ‘I have drunk and eaten’
- xem-el u ker-el =em
- (*) xem-e u ker-el =em

It seems that liquid deletion in colloquial Eastern, is sensitive to just the local auxiliary (or even vocalic clitic), and not about c-command.