Mobile Affixes Across Western Armenian: Conflicts Across Modules

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1 Introduction

Studying affix order concerns understanding the principles behind affix placement. Cross-linguistically, affixes are usually STABLE and always on the same edge of the word: a prefix (suffix) is always a prefix (suffix). The rare exceptions are MOBILE affixes which switch between a prefix and suffix based on their base’s phonological or lexical properties, e.g. Huave (Noyer 1994, Kim 2010, 2015) and Afar (Fulmer 1991, 1997), but these are controversial (Paster 2006, 2009). Similar cases are morphosyntactically conditioned endoclisis, e.g. Udi (Harris 2002).

In this paper, we document our fieldwork results on Armenian affix order. Armenian is an independent branch of the Indo-European family. It is primarily suffixing, has SOV word order, preverbal focus position, and the distribution of sentential stress is similar to Persian and Turkish. We focus on four Armenian lects: Standard Western, Hamshen, Gyumri, and Akhalkalaki (1). The four lects are part of the Western branch of Armenian which used to be widely spoken in the Ottoman Empire (OE). Gyumri and Akhalkalaki are subdialects of the Karin/Erzurum subbranch.

We focus on the imperfect indicative (INDC) affix */gV/ which is shared across the four lects but has a divergent distribution across them. Diachronically, the INDC affix was a prefix in Middle Armenian, and in most modern Western Armenian lects like Standard Western. But in some dialects, the affix is mobile (2) and its placement is determined by phonological, syntactic, and prosodic factors. In Hamshen, the only factor is phonological. The INDC is a prefix in V-initial words and a suffix elsewhere. In Gyumri and Akhalkalkali, there are additional syntactic factors involved. In general, C-initial verbs take the suffix but can exceptionally take the prefix under specific syntactic conditions. In Akhalkalaki, affix order is additionally influenced from sentential prosody. The morpheme can leave the verb and cliticize onto the stressed constituent.

2 Standard Western: Fixed prefix and diachronic origins

In Standard Western, subjunctive verbs are formed by the verb stem and Tense/Agreement suffixes: arnes, xosis (2). There is no overt subjunctive marker. Imperfective indicatives are formed by

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1Verbs can be decomposed into a base, theme vowel and T/Agr morphology: xos-i-s ‘speak-TH-2SG’ you speak. For clarity, we only show the prefix boundary; the internal division of verbs is orthogonal.
adding the prefix \([g-]\) before V-initial verbs and \([g@-]\) before C-initial verbs: \(g\)-arnes, \(g@\)-xosis.\(^2\)

For V- vs. C-initial verbs, the underlying form of the affix is /\(g/\). A schwa is added before C-initial verb in order to repair the consonant cluster. Complex onsets are generally banned in Armenian and repaired by schwa epenthesis (Vaux 1998). A sample derivation is in (3).

\[
\begin{array}{|c|c|c|}
\hline
\text{Exponent} & \text{INDC}={\{g\}} & \text{g-arnes} \\
\hline
\text{Phonology} & \text{Schwa epenthesis} & \text{g@-xosis} \\
\hline
\text{Output} & \text{g-arnes} & \text{g@-xosis} \\
\hline
\end{array}
\]

The IND is a prefix because of diachrony. It descends from the construction \(kay\ ew\ \text{VERB} ‘exists and \text{VERB}’\) from Classical Armenian (Vaux 1995). This construction grammaticalized into a prefix based on the hypothesized trajectory in (4). Various voicing shifts occurred on the way (Baronian 2017). This trajectory explains the different voicing and vowel qualities in (2). Synchronically, the fact that the IND is a prefix is an arbitrary fact about this affix. Armenian is primarily suffixing; the only inflectional prefixes are the IND and negation marker /\(t\)h/.\(^3\)

\[
\begin{array}{c}
\text{Diachronic trajectory of the IND} \\
\text{\(kay\ ew\ V > kay\ u\ V > ku\ V > gu\ V > g\alpha\ V\)}
\end{array}
\]

3 Hamshen: Phonologically-conditioned affix mobility

In Hamshen, the subjunctive is formed the same way as in Standard Western. But the form and distribution of the IND is different. The IND is a prefix \([g-]\) for V-initial verbs and a suffix \([-gu]\) for C-initial verbs: \(g\)-arnes, xosis-gu (2).\(^4\)

A simple analysis is that the allomorphs \([g-, -gu]\) are derived from two suppletive underlying forms /\(g/-, -gu/\) that are selected by the insertion rules in (5a).\(^5\) To facilitate cross-dialectal comparison, we separate the linearization of the affix from its surface shape (5b). The affix is linearized as a prefix by phonological factors (= a prefix if V-initial); it is linearized as a suffix in the elsewhere case by the morphology (= Armenian is primarily suffixing). If prefixed, the allomorph /\(g/\) is used; if suffixed, the allomorph /\(-gu/\) is used. A sample derivation is in (5c).

\[
\begin{array}{l}
\text{a. Insertion rules for IND in Hamshen} \\
\text{INDC} \iff g- / _\text{VX} \\
\quad -gu / _\text{elsewhere}
\end{array}
\]

\[
\begin{array}{l}
\text{b. Decomposed insertion rules for IND in Hamshen} \\
\text{i. Linearization} \\
\quad \text{INDC} \iff \text{INDC-} / _\text{VX} \\
\quad \quad \text{-INDC} / _\text{elsewhere}
\end{array}
\]

\[
\begin{array}{l}
\text{ii. Spell-out} \\
\quad \text{INDC-} \iff g- \\
\quad \quad \text{-INDC} \iff -gu
\end{array}
\]

\(^2\)Armenian has only three monosyllabic verbs. Here, the IND takes a separate, suppletive, phonologically non-optimizing allomorph gu-: gu-las ‘you cry’, gu-das ‘you give’, gu-kas ‘you come’. We set these aside.

\(^3\)Various sound changes have affected the affix’s surface allomorphs across the lects at this stage.

\(^4\)The distribution of the affix is entirely phonological. There is no semantic factor behind the two surface positions. The valency of the verb does not play any role. The quality of the initial vowel or consonant likewise doesn’t matter. The only exception are the three monosyllabic verbs in Armenian (Vaux 2007).

\(^5\)In most Hamshen varieties, the IND is the outermost morpheme on the verb: \(g\)-ertom ‘I go’, xosim-gu ‘I speak’. But in some varieties like Köprüçü Hamshen, the suffix can optionally surface inside the verb stem between the Tense and Agreement markers on C-initial verbs: \(g\)-ertom ‘I go’, xarbi-gu-m ‘I speak’ (Vaux 2007).

\(^6\)With two URs, equivalent treatments are using of sub-categorization frames (Inkelas 1989, Paster 2006) or constraint interaction (Kim 2010). Alternatively, the IND can be one underlying form /\(g/\). If placed before a V-initial verb, the vowel /\(u\) would be deleted by a morpheme-specific rule of vowel truncation. This rule must be morpheme specific because the most common vowel hiatus repair rule for /\(u\) is glide-hardening into [v].
c. Sample derivation for Hamshen

<table>
<thead>
<tr>
<th>Input</th>
<th>INDC.ar mes</th>
<th>INDC.xosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonology</td>
<td>Prefix for V-initial</td>
<td>INDC-arnes</td>
</tr>
<tr>
<td>Morphology</td>
<td>Suffix elsewhere</td>
<td>xosis-INDC</td>
</tr>
<tr>
<td>Exponence</td>
<td>INDC={g-,gu}</td>
<td>g-arnes</td>
</tr>
<tr>
<td>Output</td>
<td>g-arnes</td>
<td>g-arnes</td>
</tr>
</tbody>
</table>

4 Gyumri: Phonological and morpho-syntactic mobility

Like in Hamshen, the position of the INDC in Gyumri is based on phonology by default. V-initial verbs take the prefix [k-] while C-initial verbs take the suffix [-go]: k-arnes, xoses-go (2). But unlike Hamshen, Gyumri displays additional morphosyntactic factors on the placement of the INDC. These factors cause C-initial verbs to exceptionally take the prefix [k-] or even [g-]. Throughout this section, this change is called the prefix switch. We catalog and analyze these conditions.

4.1 Catalog of prefix-switch conditions in Gyumri

4.1.1 Morphological triggers: aspect and mood

By default, the INDC is a prefix k- for V-initial and -go for C-initial verbs in Gyumri. But in two morphological contexts, the prefix-switch applies: habitual and conditional forms. Progressive verbs are overtly the same as simple present verbs: k-efl@a, vazze-go (6a). However, if the verb is habitual, both V-initial and C-initial verbs take the prefix [k-]. Schwa epenthesis applies to repair the consonant cluster: k-efl@a, k@-vazze (6b). Sentential stress is underlined; the affix is in bold.

(6) a. i. fun-@ k-efl@a  
    dog-DEF INDC-go  
    ‘The dog is going’  
    ii. fun-@ vazze-go  
    dog-DEF run-INDC  
    ‘The dog is running’

b. i. fun-@ k-efl@  
    dog-DEF INDC-go  
    ‘The dog (habitually) goes’  
    ii. fun-@ k@-vazze  
    dog-DEF INDC-run  
    ‘The dog (habitually) runs’

Interestingly, the voicing quality of the prefix can differ among verbs. For some speakers, the voicing quality of the prefix in C-initial verbs matches that of the ‘normal’ prefix: habitual k-efl@a, k@-vazze. For other speakers, the voice quality instead matches that of the suffix: habitual k-efl@a, g@-vazze vs. progressive vazze-go. As of now, our data is too limited to study this alternation in depth; it can indicate whether affix placement is cyclic and has single vs. multiple underlying forms.

A second instance of prefix-switch comes from irrealis forms. Compare a present indicative form like (7a) which takes the suffix and a conditional in (7b) which always takes the prefix.

(7) a. fun-@ vazze-go  
    dog-DEF run-INDC  
    ‘The dog is running’

b. jete k-uzes, fun-@ k@-vazze  
    if want, dog-DEF INDC-run-  
    ‘If you want, the dog will run’

For the aspect and mood pattern, we could analyze the prefix-switch as a morphological rule. Habitual aspect and conditional are overtly marked in Gyumri by the prefix k- which is superficially identical to the INDC (due to a shared historical origin and/or influence from Standard Eastern Armenian). The purely morphological analysis, however, cannot be extended elsewhere. The shift can be triggered by factors besides morphosyntactic features. Before we discuss those, the next section briefly explains general Armenian syntax.

7 For some Gyumri speakers, aspect does not trigger the prefix-switch.
8 A complicating factor is that Gyumri has a 4-way laryngeal contrast between voiced unaspirated, voiced aspirated, voiceless unaspirated, and voiceless aspiration, with neutralization in different word positions.
9 There is evidence that aspect cannot trigger the switch if the prefix would be sentence-initial: compare [fun-@ k@-vazze] ‘dog (habitually) runs’ (6b-ii) with [vazze-go] ‘(it habitually) runs’ with subject drop.
4.1.2 Excursus into basics of Armenian syntax

Western Armenian word order is primarily SOV. The sentences below are from Standard Western. The verb is in the perfect past and marked by the aorist stem. The imperfective INDC affix isn’t used. Nominative and accusative case are covert zero suffixes; specificity or definiteness (glossed as D or DEF) is marked by the suffix after consonants and -n after vowels.

(8) a. ara-n kirk dzaxeš Ara-D book sold ‘Ara sold books’
   b. ara-n kirk-@ dzaxeš Ara-D book-D sold ‘Ara sold the book’

If the object is a bare object (without definiteness or indefiniteness marking), then it is interpreted as a generic noun and takes nuclear stress (8a) (Sigler 1997). If the object is definite or specific, it still takes nuclear stress in Western Armenian (8b). Definite objects can repel stress if they are presupposed or mark given or topicalized information (8c). In the following sections, a constituent is said to be ‘stressed’ if it receives nuclear or sentential stress under broad focus conditions. If a constituent received sentential stress under narrow focus, then it is ‘focused’.

4.1.3 Syntactic triggers: locative, direct objects, and manner adverbs

We catalog four cases where extra-morphological factors trigger the prefix-switch in Gyumri: locatives, direct objects, and manner adverbs. First, if a motion verb takes a locative as an argument, then the locative takes sentential stress. C-initial verbs undergo the prefix switch.\footnote{In Eastern Armenian, definite objects tend to repel stress onto the verb (Megerdoomian 2009).}

(9) a. i. fun-@ vazze:go dog-DEF run-INDC ‘The dog is running’
   b. i. fun-@ tun ko-vazze dog-DEF home INDC-run ‘The dog is running home’

Prefix switch is seen in transitive clauses based on the object’s status as overt vs. covert, bare vs. definite, given vs. new. If no object is present, C-initial verbs take the suffix (10a). If a bare object is used, then the object is stressed and C-initial verbs show the prefix switch (10b). If the object is definite, it can either be stressed if new information (10c); otherwise it is unstressed because it is given or a topic (10d). If the definite object is stressed, then the prefix switch applies.

(10) a. ara-n tsaxe-go Ara-DEF sells-INDC ‘Ara is selling’
   b. ara-n girkb ko-tsaxe Ara-DEF book INDC-sells ‘Ara is selling books’
   c. ara-n girkb-@ ko-tsaxe Ara-DEF book-DEF sells-INDC ‘Ara is selling the book’
   d. ara-n girkb-@ tsaxe-go Ara-DEF book-DEF sells-INDC ‘The book, Ara is selling’

The prefix-switch is likewise found because of certain adverbs which take nuclear stress (11b). Data is preliminary, but it is possible that only morphologically simplex manner adverbs from a closed class can trigger the prefix-switch: good, bad, fast, slow. It excludes manner adverbs which are morphologically complex or which mark the state of the speaker, e.g. hungry, secretly, thirsty.

(11) a. ara-n girkb-@ tsaxe-go Ara-DEF book-DEF sells-INDC ‘The book, Ara is selling’
   b. ara-n girkb-@ lav ko-tsaxe Ara-D book-D well INDC-sells ‘The book, Ara is selling well’

\footnote{In our preliminary results, it is unclear to us if the locative must be an argument, a direction, or must be a simple noun instead of an adpositional phrase.}
4.1.4 Information structure triggers: focus

The prefix-switch is also affected by focus. In the simple intransitive sentence in (12a), the sentence is under broad focus and there is no prefix switch. But if narrow focus is added onto the subject, then we have the prefix switch. The subject can be focused either because it’s a wh-word (12b) or because it answers a wh-question (12c). Focused constituents and in uppercase.

(12) a. ʃun-ə vazze-ɡo  
  dog-DEF run-INDC  
  ‘The dog is running’

b. əv ko-vazze  
  who INDC-run  
  ‘WHO is running?’

c. ʃun-ə ko-vazze  
  dog-DEF INDC-run  
  ‘The DOG is running’

Focus-operator clitics like el ‘also’ induce narrow focus on their host and trigger the switch.

(13) a. ʃun-ə vazze-ɡo  
  dog-DEF run-INDC  
  ‘The dog is running’

b. kadu-n=el ko-vazze  
  cat-DEF=also INDC-run  
  ‘The CAT is also running’

In the above examples, the focused constituent and the verb were adjacent. However, the prefix switch can apply even if the focused constituent is not adjacent to the verb.

(14) a. ara-n girlh-ə  
  Ara-DEF book-DEF sells-IN  
  ‘The book, Ara is selling’

b. mariam-n=el girlh-ə ko-ʃaxe  
  Maria-DEF=also book-DEF IN-sells  
  ‘The book, MARIA is also selling’

4.2 Classification of the prefix-switch conditions

To summarize, the Gyumri INDC is by default a prefix [k-] for V-initial verbs and a suffix [-ɡo] for C-initial verbs. In the simplest cases, the choice is determined by phonological factors: giving an onset to a verb, and by morphological factors: suffixing elsewhere. But in some cases, C-initial verbs switch to a prefix [k@-] in various constructions summarized in (15).

(15) Conditions and distribution of prefix-switch in Gyumri

<table>
<thead>
<tr>
<th></th>
<th>Aspect</th>
<th>Mood</th>
<th>Locative</th>
<th>Object</th>
<th>Manner</th>
<th>Adverb</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefix</td>
<td>HAB</td>
<td>REAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suffix</td>
<td>PROG</td>
<td>IR</td>
<td>or given</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The question posed now is: why these constructions? We argue that prefix-switch is triggered when the verbal predicate (VP) changes or enlarges based on multiple factors:

(16) Prefix switch due to

a. **Morphological Markedness:**
   i. **Context:** Aspect, Mood
   ii. **Generalization:** prefix switch if the morphosyntactic features are ‘marked’

b. **Size of syntactic domain:**
   i. **Context:** Locative, Object, Adverb
   ii. **Generalization:** prefix switch if the verbal predicate (VP) is larger than the verb

c. **Information structure:**
   i. **Context:** Focus
   ii. **Generalization:** prefix switch if focus is added to the sentence

Habitual and irrealis verbs trigger prefix-switch for purely morphological reasons (16a). The affix is recruited via affix mobility to show a contrast and to expressed a marked feature. This means that either i) progressive and realis verbs are unmarked for aspect and mood, or ii) the feature-setting [+habitual] or [+realis] are functionally marked structures. Unlike the other conditions in (15), these morphological conditions do not cause any difference in sentential stress.
The second batch of contexts require access to the larger syntactic structure (16b). All these contexts involve the shift in sentential stress to a preverbal constituent. Some involve the addition of a new item in the VP or the sentence, as long as the new item is not given information.

The third context is changing the information structure of the sentence by adding narrow focus onto some constituent (16c). This factor does not require that a new item is added to the sentence, although it can be caused by the addition of focus operators. Focus likewise doesn’t require overt movement in Armenian and it can marked by only sentential stress.

4.3 Analysis and problems with a phase-base approach

The prefix-switch is clearly sensitive to some relevant syntactic domain in (16b). If the verb appears alone in this domain, then the INDC is a suffix; otherwise, it is a prefix. But what is this domain? One possible formalization are phases (Kahnemuyipour 2009, Kahnemuyipour and Megerdoomian 2017), which are generally treated as cycles for syntactic computation and prosody. Two generally accepted phases are vP and CP to respectively handle the thematic domain and clause-level syntax. In this system, the lower vP phase would be the domain of sensitivity for the prefix switch.

To illustrate, in a simple intransitive sentence like (17a-i), the vP phase contains only the verb (17b-i). The INDC is a suffix. But if a manner adverb is added as an adjunct to the VP (17a-ii), then the vP contains more than the verb (17b-ii). This triggers the prefix switch.

\[(17) \ \text{a. i. sun-@ dog-DEF vazze-g@ run-INDC} \ \text{‘The dog is running.’} \ \text{ii. sun-@ dog-DEF lav well INDC-run} \ \text{‘The dog is running well.’} \]

\[
\begin{array}{ll}
\text{Input} & \text{Output} \\
\text{vP} & \text{vP} \\
\text{INDC} & \text{INDC} \\
\text{vazze} & \text{vazze} \\
\end{array}
\]

The generalization is then simple: Use a prefix if the phase is larger than the verb. This can be alternatively stated as Use a prefix if the pre-verbal position in the phase is occupied, or if the verb isn’t at the phase boundary. We show a sample derivation in (18).

\[
\begin{array}{ll}
\text{Input} & \text{Output} \\
\text{Phonology} & \text{Phonology} \\
\text{Prefix for V-initial} & \text{Schwa epenthesis} \\
\text{Syntax} & \text{Syntax} \\
\text{Prefix in larger phase} & \text{Prefix in larger phase} \\
\text{Morphology} & \text{Morphology} \\
\text{Suffix elsewhere} & \text{Suffix elsewhere} \\
\text{Exponence} & \text{Exponence} \\
\text{INDC={k-,g@}} & \text{INDC=vazze-INDC} \\
\text{Phonology} & \text{Phonology} \\
\text{Schwa epenthesis} & \text{Schwa epenthesis} \\
\end{array}
\]

\[\text{Deriving syntactically-conditioned affix mobility in Gyumri}\]

\[
\begin{array}{ll}
\text{Phonology} & \text{Phonology} \\
\text{Prefix for V-initial} & \text{Schwa epenthesis} \\
\text{Syntax} & \text{Syntax} \\
\text{Prefix in larger phase} & \text{Prefix in larger phase} \\
\text{Morphology} & \text{Morphology} \\
\text{Suffix elsewhere} & \text{Suffix elsewhere} \\
\text{Exponence} & \text{Exponence} \\
\text{INDC={k-,g@}} & \text{INDC=vazze-INDC} \\
\text{Phonology} & \text{Phonology} \\
\text{Schwa epenthesis} & \text{Schwa epenthesis} \\
\end{array}
\]

\[\text{The analysis could be extended to habituаls and irrealis verbs if we assume that i) AspP and MoodP are in the lower phase, and ii) they trigger the prefix-switch when morphologically marked.}\]
This analysis can be extended to focus-driven prefix switch (16c), if we assume that a low FocP is added either (a) within the vP phase or (b) on top of the vP with a subsequent redefining of phase boundaries (Kahnemuyipour and Megerdoomian 2017). But, this approach is problematic because it can’t model focus on high adverbs and subjects (12b)-(12c).\(^{13}\)

In focus-neutral contexts, the main problem for this account is the status of objects. The bulk of phase-based treatments of nuclear stress treat definite objects as phase-external or outside the vP-phase (Kahnemuyipour 2009). To illustrate, Persian bans stress on definite direct objects (19a). The same is reported for Standard Eastern Armenian (19b) (Megerdoomian 2009). But the unstressability of definite objects is not universal. Turkish has nuclear stress on pre-verbal definite objects (19c) (Üntak-Tarhan 2006) as does Standard Western Armenian (19d).

\[(19)\]  
**Nuclear stress on definite objects in Persian, Turkish, and Armenian**

<table>
<thead>
<tr>
<th></th>
<th>Persian</th>
<th>E. Armenian</th>
<th>Turkish</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Ali</td>
<td>Ali-n</td>
<td>Ali</td>
</tr>
<tr>
<td>Def O</td>
<td>ketāb-ra</td>
<td>girk(^k)-(\odot)</td>
<td>kitab-(\odot)</td>
</tr>
<tr>
<td>V</td>
<td>xund</td>
<td>kardat(^h)</td>
<td>okudu</td>
</tr>
</tbody>
</table>

One could argue that the difference between the languages is syntactic, i.e. that the definite object is at spec-vP for Persian and Eastern Armenian, while it is at a lower position for Turkish (Üntak-Tarhan 2006) and Standard Western. However the evidence for this different object position is dubious in Turkish (Nakipoğlu 2009, 2019) and in Standard Western Armenian (Sigler 1997).

The second problem is that there is no positive evidence for syntactic cyclacity. The prefix switch is triggered after all syntactic movements and operations have applied. The lack of cyclicity makes it possible to treat the phase as some syntactic domain that is later referenced by the morphophonology without being interleaved in it (Kratzer and Selkirk 2007, Cheng and Downing 2016). This is in contrast to word-level cyclacity which some speakers show. As explained in section 4.1.1, some speakers have the switched prefix match the voice quality of the default suffix instead of the default prefix: progressive \(k\(-ej\)^\(d\)a, vazve-g\(\dot{a}\) vs. habitual \(k\(-ej\)^\(d\), k\(\odot\)-vazve-g\(\dot{a}\)-vazze\). This suggests that the same morph \(l\(-g\\odot\) was first used as a suffix and then shifted to the left.

In our analysis, we acknowledge that (a) the position of \(\text{INDC}\) is determined within some relevant syntactic environment (DOMAIN), and (b) that this environment is determined dynamically. We remain agnostic about the name of the domain, e.g., whether it corresponds to the lower phase boundary or not, as further research is needed. This covers the prefix-switch conditions which involve syntactic size (20). It can also account for prefix-switching under focus if we assume that the focus feature \([+\text{F}]\) on a phrase extends the domain.

\[(20)\]  
**Formalizing ‘size of syntactic domain’ as a dynamic domain (=Dom) boundary**

<table>
<thead>
<tr>
<th>Domain</th>
<th>Locative</th>
<th>Bare Object</th>
<th>Manner Adverb</th>
<th>Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\text{Dom} \text{ Loc V})</td>
<td>(\text{Dom} \text{ O V})</td>
<td>(\text{Dom} \text{ Adv V})</td>
<td>(\text{Dom} [+] F \text{ [O V]})</td>
<td></td>
</tr>
</tbody>
</table>

5  **Akhalcalaki: Prosodic clisis**

The distribution of the \(\text{INDC}\) in complicated in Gyumri. Although the \(\text{INDC}\) is by default a suffix for C-initial verbs, various syntactic factors unexpectedly cause the prefix-switch. Almost the same distribution is found in Akhalcalaki: \(k\text{-arnes}, xoses-g\(\dot{a}\)\) (2). As in Gyumri, some speakers have C-initial verbs take the voiced \(g\(\dot{a}\)-xoses\) or voiceless \(k\(\odot\)-xoses\) when undergoing the prefix-switch.\(^{14}\)

Unlike Gyumri, Akhalcalaki speakers do not have aspect as a conditioning factor. Both progressive (21a) and habitual (21b) C-initial verbs are suffixed, unlike in Gyumri.

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13Furthermore, deriving focus via a short movement to a low FocP is problematic in neighboring languages like Georgian (Borise and Polinsky 2018).

14There is evidence that there’s a separate and late phonological rule of voicing assimilation for switched prefixes: \(girk\(^k\) ko ßaxe ‘book \text{INDC sells’ but girk\(^k\)-\(\odot\) g\(\dot{a}\) ßaxe ‘book-DEF \text{INDC sells’}. It is unclear if this voicing assimilation rule is obligatory or variable, and if it also applies in Gyumri.
A major difference is that the INDC in Akhalkalaki is additionally sensitive to prosodic factors. In Akhalkalaki, the INDC can cliticize onto the stressed or focused constituent. In an intransitive sentence, a focused subject triggers the prefix-switch (22a-ii). In a transitive sentence, the use of a bare object also triggers the prefix-switch (22b-ii).

(22) a. i. fun-@ vazze-g@ dog-DEF run-INDC ‘The dog is running’
   ii. kadu-n=a=g@ vazze cat-DEF=also=INDC run ‘The CAT is also running’

b. i. ara-n tsaxe-g@ Ara-DEF sell-INDC ‘Ara is selling’
   ii. ara-n girkh=k@ tsaxe Ara-DEF book=INDC sell ‘Ara is selling books’

In the above contexts (22a-ii, 22b-ii), the affix and the stressed/focused constituent are adjacent. The INDC is an enclitic onto the preverbal item, not a prefix onto the verb: *girkh=g@->tsaxe, girkh=k@>tsaxe; evidence is that a pause can be placed between the morpheme and the verb in slow speech.15 When the focused item is not adjacent to the verb, then the INDC will move and clearly cliticize onto the the focused item (23b). This violates the lexical integrity of the verb. A pause can follow the INDC morph. The morph is now a clitic; it follows any other clitics on the stressed/focused item, e.g. the clitic a(l) ‘also’.

(23) a. ara-n girkh=k@ tsaxe Ara-DEF book=INDC sells ‘Ara is selling books’
   b. mariam-n=a=g@ girkh=k@ tsaxe Maria-DEF=also=INDC book sell ‘MARIA is also selling books’

To further understand this extreme mobility, consider the difference between Gyumri and Akhalkalaki below. For a simple transitive sentence with a topicalized definite object, stress is on the verb. V-initial verbs take a prefix while C-initial verbs take a suffix. There is no prefix-switch. If a bare object is used instead, then the object takes stress and is adjacent to the verb. For a C-initial verb, Gyumri shows the prefix-switch while Akhalkalaki has enclisis. If we further add a focused wh-word urdeK ‘where’, the new focused item is not adjacent to the verb. The prefix stays fixed on the verb for Gyumri but it jumps onto the focused item in Akhalkalaki.

(24) Distribution of INDC across Gyumri and Akhalkalaki with and without clisis

<table>
<thead>
<tr>
<th></th>
<th>Gyumri</th>
<th>Akhalkalaki</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>S Top O V</td>
<td>S O V</td>
</tr>
<tr>
<td>Gyumri</td>
<td>amu-f-o hafa=g-saxe</td>
<td>amu-f-o hafa=k-tsaxe</td>
</tr>
<tr>
<td>Akhalkalaki</td>
<td>amu-f-o hafa=saxe</td>
<td>amu-f-o hafa-k-tsaxe</td>
</tr>
<tr>
<td>‘The bread, Anoush is selling’</td>
<td>‘Anoush is selling bread’</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>S O V</td>
<td>S O V</td>
</tr>
<tr>
<td>Gyumri</td>
<td>amu-f-o hafa=k-tsaxe</td>
<td>amu-f-o hafa-k-tsaxe</td>
</tr>
<tr>
<td>Akhalkalaki</td>
<td>amu-f-o hafa=h-tsaxe</td>
<td>amu-f-o hafa-k-tsaxe</td>
</tr>
<tr>
<td>‘Where is Anoush selling bread’</td>
<td>‘Where is Anoush selling bread’</td>
<td></td>
</tr>
</tbody>
</table>

The analysis is straightforward. Akhalkalaki has almost the same grammar as Gyumri based on a mix of morphological, phonological, syntactic, and semantic factors. The difference is that Akhalkalaki has an additional prosodic rule that the INDC must cliticize onto the stressed item. The INDC becomes an enclitic instead of a proclitic because Armenian is primarily suffixed. A sample derivation is in (25).16

15These judgments are however impressionistic and need further acoustic verification. In casual speech, pauses can’t be detected easily.

16The syntactic condition is almost always completely neutralized because of the prosodic condition. In a focus-neutral sentence, the syntactic changes which trigger the prefix-switch in Gyumri involve adding a preverbal item. This preverbal item always takes stress away from the verb. In Akhalkalaki, this causes the affix to appear as an enclitic instead of a prefix for the speaker described in this paper. It is unclear if other Akhalkalaki speakers are more lax and accept a prefix instead of an enclitic in these same syntactic constructions.
6 Discussion & Conclusion

All in all, the position of the InDC is multimodal and based on many factors across the lects (26).

(26) Cross-modular conditions on affix mobility across the Armenian lects

<table>
<thead>
<tr>
<th>Dialect:</th>
<th>Standard</th>
<th>Hamshen</th>
<th>Gyumri</th>
<th>Akhalkalaki</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position:</td>
<td>Fixed</td>
<td>Mobile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Determined by:</td>
<td>Morphology</td>
<td>Phonology</td>
<td>Syntax</td>
<td>Prosody</td>
</tr>
</tbody>
</table>

In Standard Western, the InDC is a stable prefix because of diachronic reasons. Its prefixhood is synchronically modeled as an arbitrary morphological property of the affix. In Hamshen and beyond, the affix is mobile and its mobility is phonologically conditioned. The generalization is simple and motivated by syllable structure: Use a prefix to give a V-initial verb an onset, otherwise use a suffix. This phonological mobility opens a phonological Pandora’s Box and leads to syntactically-conditioned mobility in Gyumri and Akhalkalaki. The position of the InDC is sensitive to some notion of syntactic domains, e.g. phases or otherwise. Hansen (2012) documents cases where sentences may use different word orders to highlight different semantics: aspect, irrealis, object definiteness, focus, etc. under the general framework of discourse transitivity (Hopper and Thompson 1980). Gyumri and Akhalkalaki show an extreme case where affix order is used for such a purpose.

This requires the Late Linearization and Late Realization of the InDC. The right order and shape must be based after the verb has been spelled out and after the entire sentence has been crafted, following any movements, focus placement, and interpreting information structure. This requires that affix-placement be post-syntactic for at least the InDC.

The intermingling of these phonological and syntactic factors with nuclear stress further complicates matters in Akhalkalaki. In Akhalkalaki, the morpheme is now realizable as a clitic on the stressed/focused constituent. This cliticization is clear when the stressed/focused item is not adjacent to the verb. For some speakers, cliticization is blocked if the verb is V-initial. This suggests that cliticization is relatively late in the derivation. Other speakers, however, do allow cliticization even for V-initial verbs too.

The above generalizations and data are however still preliminary. We are still in a continuous process of fieldwork on these lects. We have found additional evidence of the prefix-switch interacting with i) morphological factors like multiple exponence and word-minimality, ii) phonological factors like the final segment in the preverbal item, iii) syntactic factors like ditransitives, sentential adverbs, coordination, unaccusative verbs, iv) prosodic factors like post-verbal items, polar questions, and verb focus, and v) variation among speakers and the liability of attrition. One possible discovery is the ability of V-initial verbs to optionally undergo a suffix switch or to optionally undergo the displacement of the prefix onto a focused item.

We suspect that the development of the prefix-switch was motivated by language internal change and dialect leveling. There may have been indirect language contact with other languages of the South Caucasus that have similar clitic patterns. Clearly, our work is cut out for us.
References


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