Class 10
Mobile Affixation (in Huave)

10/29/21

1 Mobile affixation

- All of the affixation we've seen thus far has been oriented to one edge of the word or the other.
  - Even when we've seen infixes, they've always been consistent close to the left edge or the right edge.
  - There haven't been any instances where a single affix has alternated between one edge of the word and the other.

⋆ But actually there are some known cases of affixation that have exactly this character.
→ Affixes that behave like this are usually called **mobile affixes**, or sometimes **ambifixes**.

- Some seem to be motivated by morphosyntactic considerations:

(1) **Known cases of morphosyntactically-conditioned mobile affixation**
  a. **Swahili** (Bantu, East Africa; Stump 1993:139):
  The relative marker alternates between a prefix (sandwiched between agreement prefixes) and a suffix (immediately after the root), depending on tense and polarity.
  b. **Fula** (Atlantic-Congo, West Africa; Stump 1993:141):
  Agreement morphs alternate between prefixal and suffixal depending on tense and mood; the preterite tense suffix alternates between prefix and suffix depending on aspect.

∗ Examples like these may be thicker on the ground than normally believed (Arkadiev & Lander 2021).

- Others seem to be motivated by phonological considerations:

(2) **Known cases of phonologically-conditioned mobile affixation**
  a. **Moro** (Kordofanian, Sudan; Jenks & Rose 2015):
  Certain object marking affixes alternate between suffixal position and prefixal position, driven by the interaction between tone and alignment.
  b. **Afar** (or Qafar [ʕafar]; Cushitic, Ethiopia; Fulmer 1991):
  Various verbal affixes alternate between suffixal position and prefixal position, driven by the vowel/consonant status of the base-initial segment.
  c. **Huave** (Huavean, Mexico; Noyer 1994, Kim 2008, 2010, Zukoff 2021):
  Various verbal affixes alternate between suffixal position and prefixal position, driven by the vowel/consonant status of the base-initial and base-final segments.

- Among the phonologically-motivated cases, Huave has received the most attention in the literature, and is perhaps the best documented, so that's where we'll start.

2 Mobile affixation in Huave

- In the San Francisco del Mar variety of Huave, as described by Kim (2008), there are at least 5 affixes that can appear on either side of the root, hence *mobile affixes*:

(3) **Huave's mobile affixes** (Kim 2010:139–141)

a.	/t/	[CP]	Completive	} **"ASPECT"**
b.	/n/	[ST]	Stative	
c.	/m/	[SB]	Subordinate (/n/ in 1st person [SB1])	
d.	/r/	[2I]	2nd Person Intransitive (occurs only in conjunction with 2nd Person /e/)	
e.	/s/	[1]	1st Person (the only affix in Kim's "Layer 3"; all the others in "Layer 1")	

- Note that all of the exponents are single consonants.

- The descriptive generalization is as follows:

(4) **Huave's affix mobility generalization**

a. A mobile affix surfaces as a prefix (i.e., to the left of the root) just in case the constituent it attaches to starts in a vowel and ends in a consonant (5a).

b. Otherwise, it surfaces as a suffix (i.e., to the right of the root), after the constituent it attaches to (5b–d).

(5) **Completive /t/ mobile affixation** (Kim 2010:140, 141, 149)

a.	**V**(...)**C** bases:	***t*-*uc***	's/he ate'	[**uc*-*(i)****t***]
b.	**C**(...)**V** bases:	*mo^{h}ko*-***t***	's/he lay face down'	[****t****(a)*-*mo^{h}ko*]
c.	**V**(...)**V** bases:	*uju*-***m***	'that it spins'	[****m***-*uju*]
d.	**C**(...)**C** bases:	*ɲ*-*uk^{w}al*-***as***	'I am pregnant'	[****s****a*-*ɲ*-*uk^{w}al*]

∗ But there's actually some question about the default behavior for **V**(...)**V** bases (Kim 2015b:116):

(6) $[VC]_{ROOT}+[V]_{THEME} \rightarrow$ *suffix*
[uj+u]-**m** (***m**-[uj+u])
'that it spins'

(7) $[V]_{THEME}+[CV]_{ROOT} \rightarrow$ *prefix*
m-[a+la] (*[a+la]-**m**)
'that s/he gobbles (it)'

- Kim (2010) assumes that suffixation is the default (6), and that prefixation in these kinds of bases happens as a way to avoid parsing certain suffixes into the root syllable (7).
- Kim (2015b) assumes that prefixation is the default (7), but that this is blocked just in case the initial vowel is a root vowel (6).

- The problem is, there's not a lot of either of these types of bases, so there isn't quite enough evidence to confidently decide between the characterizations.

- When there are multiple mobile affixes, e.g. (8), one of the affixes always takes "priority" over the other.

(8) ***ɲ*-*uk^{w}al*-*as*** 'I am pregnant' (****ʃ*-*uk^{w}al*-*an***)

- If we're thinking about it **cyclically** (à la Kim 2010):
  - STATIVE /n/ must be attaching *first*, and 1ST PERSON /s/ must be attaching *second*.
  - If the base at the time of attachment is [uk^{w}al], the generalizations in (4) tell us that that affix should surface as a prefix.
  - → Since /n/ is the one that does surface as a prefix, it must be attaching first.

- If we're thinking about it **non-cyclically** (à la Zukoff 2021, to appear):
  - The relative order of the affixes is determined by the ranking of their alignment constraints.
  - → So, ALIGN-1-R ≫ ALIGN-SUB-R (if right aligned) or ALIGN-SUB-L ≫ ALIGN-1-L (if left aligned).
  - The generalization in (4) tells us that they can't both end up as prefixes or suffixes.

3 Analyses of Mobile Affixation in Huave

- There's (more or less) three analyses out there in the literature:

(9) a. Cyclic subcategorization (Kim 2015b)
b. Cyclic alignment (Kim 2010)
c. Non-cyclic alignment (Zukoff 2021)

- None of them are perfect, but comparing them will be illuminating about the relationship between spell-out and affix order, and what the phonology-morphology interface might look like.

3.1 Cyclic subcategorization

- Responding to comments by Mary Paster, Kim (2015b) proposes a cyclic subcategorization model of Huave's affix mobility.
  - It's based around the idea that affix direction could be specified in VI, and that differences in affix direction could be the only difference between suppletive allomorphs.

- Following the idea that prefixation (7) is the default for all vowel-initial bases (with root vowels specially rejecting it), Kim (2015b:118) proposes the following subcategorization frames:

(10) a. COMPLETIVE ⇔ /t-/ / _[$V_{[-ROOT]}$]
b. COMPLETIVE ⇔ /-t/

(11) a. 1ST PERSON ⇔ /s-/ / _[$V_{[-ROOT]}$]
b. 1ST PERSON ⇔ /-s/

⋆ The equivalent pair of VI's would have to be specified for each of the 5+ mobile affixes. This is a very serious duplication problem:

(12) **Duplication problem for mobile affixes' subcat frames**
a. Each one has the same phonological relationship between their two suppletive allomorphs:
→ *identity*
b. Each one has the same ordering relationship between their two suppletive allomorphs:
→ *prefix* vs. *suffix*
c. Each one has the same relationship between the conditioning environments of their two suppletive allomorphs:
→ _[$V_{[-ROOT]}$] (for the prefix one) vs. *elswhere* (for the suffix one)

- This is a hallmark that a generalization is not being captured properly. But, again, advocates of Paster's (2009) subcategorization approach don't balk at this.

3.2 Cyclic alignment

- Like Kim's (2015b) subcategorization analysis, Kim's (2010) approach is also crucially cyclic, but it differs in the way that affix direction is determined.
  → Rather than being underlyingly specified, affix direction emerges through transparent interaction with the phonology via **P** ≫ **M**.

3.2.1 Cyclic ordering

- Whether we go for the subcategorization approach or the alignment approach, we need to specify the very specific cyclic spell-out order in (13):

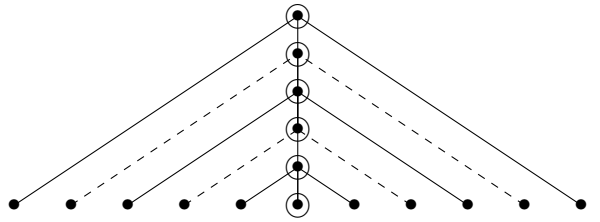
(13) **Spell-out order** (mobile affixes bolded; vocalic affixes boxed; a few things omitted)

ROOT > [TV /a-,u-,-V/] > CS /^{h}ʧ/ > **2I /r/** > [2 /e/] > {**CP /t/, ST /n/, SB /m∼n/**} > [**FUT /i/, RFL /e/**] > **1 /s/** > **PL /n/**

Layer0 Layer1 Layer2 Layer3 Layer4

- Kim (2008, 2010) breaks these up into "Layers" (14), in order to emphasize the alternating zones of mobile and non-mobile affixes, and the dissociation of attachment order from linear order:

(14) **Huave's "layered" morphology** (Kim 2015a:114)



- But as we can see from Layer 1 in (13), there's an even more granular level for this alternation.

⋆ Everything comes out right because there's a crucial alternating ordering between every (potentially co-occurring) mobile affix (all consonantal) and some vocalic affix.

- Consider the 2nd person intransitive future subordinate forms:

(15) **2nd Intransitive Future Subordinate** [(Kim 2010:141)]

a. **V(...)C base**	b. **C(...)V base**
i-m-e-r-u+c (*imeruc*)	i-m-e-wic+i-r (*imewicjor*)
FUT-SB-2-2I-eat	FUT-SB-2-rise-2I
'you will eat'	'you will get up'

- The cyclic derivations for these two forms have to be as follows:

(16) **Cyclic derivations**

	(15a)	(15b)		*(15a)	*(15b)
1. Root	c	wic			
2. Theme Vowel	u+[c]	[wic]+i			
3. 2I /r/	r-[uc]	[wici]-r			
4. 2 /e/	e-[ruc]	e-[wicir]	5. SB /m/	*[ruc]-*im*	*[wicir]-*am*
5. SB /m/	m-[eruc]	m-[ewicir]	4. 2 /e/	*e-[rucim]	*e-[wiciram]
6. FUT /i/	i-[meruc]	i-[mewicir]			
	imeruc	*imewicjor*			

→ Switching, e.g., the order of attachment of SB /m/ and 2 /e/ will change the direction of attachment for /m/.
- If the prefixal vowel is not yet available, the base at that moment is **C(...)C**.
- This would cause /m/ to surface on the right, for both derivations, contrary to fact.

- We could go through the same exercise for various other combinations. Here's one more:

(17) **1st person Future Subordinate** [(Kim 2010:141)]

a. **V(...)C base**	b. **C(...)V base**
s-i-n-a+^{h}ʧ (*ʃina^{h}ʧ*)	s-i-ʧut+u-n (*ʃitʧutun*)
1-FUT-SB1-give	1-FUT-sit-SB1
'(that) I will give (it)'	'(that) I will sit'

(18) **Cyclic derivations**

		(17a)	(17b)		*(17a)	*(17b)
1.	Root	^{h}ʧ	ʧut			
2.	Theme Vowel	a+[^{h}ʧ]	[ʧut]+u			
3.	2I /r/	*n/a*	*n/a*			
4.	2 /e/	*n/a*	*n/a*			
5.	SB1 /n/	n-[a^{h}ʧ]	[ʧutu]-n			
6.	FUT /i/	i-[na^{h}ʧ]	i-[ʧutun]	7. 1 /s/	*[na^{h}ʧ]-*is*	*[ʧutun]-*us*
7.	1 /s/	s-[ina^{h}ʧ]	s-[itʧutun]	6. FUT /i/	*i-[na^{h}ʧis]	*i-[ʧutunus]
		ʃina^{h}ʧ	*ʃitʧutun*			

⋆ **Take-away:**

- Maybe this perfect alternations between consonantal morphemes and vocalic morphemes just happens to be the way the language's morphology is organized.
- Or maybe there's something more phonological going on than meets the eye...

• Before following up on that skepticism, let's see how Kim (2010) actually derives affix direction.

3.2.2 Cyclic alignment via P ≫ M

• Kim (2010) uses Cophonology Theory (Orgun 1996, 1999, Inkelas, Orgun, & Zoll 1997, Inkelas 1998, Inkelas & Zoll 2005, 2007, *a.o.*) to implement a cyclic **P** ≫ **M** analysis of affix direction.

⋆ In Cophonology Theory, each morpheme is associated with a (potentially) unique phonological grammar ("cophonology").

- Words are built up completely cyclically, adding one morpheme at a time.
- Each time a morpheme is added to the word, a round of phonological derivation occurs, using that morpheme's cophonology.

• The way that Kim (2010) accounts for the affix direction generalizations from (4) is by giving different morphemes different cophonologies. These cophonologies differ in:

1. Which alignment constraints they contain
2. How their alignment constraints are ranked with respect to other phonological constraints

• Kim (2010) posits two alignment constraints:

(19) **Affix placement constraints** (Kim 2010:148)

a. ALIGN-R: Align the *left edge of the affix* to the **right edge of the domain**. "Suffix!"
b. ALIGN-L: Align the *right edge of the affix* to the **left edge of the domain**. "Prefix!"

- These are opposite-edge alignment constraints, technically just saying stick the two things together.
  - (By "domain", she means the base.)
- But nothing would change if we used same-edge alignment constraints treating the entire output as the domain.

∗ She says that the cophonologies of prefixes only contain ALIGN-L and the cophonologies of suffixes only contain ALIGN-R (Kim 2010:148, fn.8), and implies that the existence of these constraints in a grammar controls what candidate orders can be assessed in the phonological evaluation.
  ◦ Neither of these are necessary assumptions. The right result can always be achieved by ranking and an unrestricted candidate set.

• But the basic point is right:
  ◦ Prefixes are morphemes with high-ranked ALIGN-L
  ◦ Suffixes are morphemes with high-ranked ALIGN-R

⋆ **So what are mobile affixes?**
  → If we follow the generalizations in (4), we know that the elsewhere position for mobile affixes is suffix position. This means that they should also have high-ranked ALIGN-R, just like suffixes.

⋆ **So what differentiates them from regular suffixes?**
  → They are sensitive to phonological considerations.
  ◦ i.e., for mobile affixes, ALIGN-R is **dominated** by certain phonological constraints.

⋆ **What are those phonological considerations/constraints?**

(20) **Completive /t/ mobile affixation** (Kim 2010:140, 141, 149)

a.	**V**(...)**C** bases:	***t***-*uc*	's/he ate'	[**uc*-*(i)****t***]
b.	**C**(...)**V** bases:	*mo*^{h}*ko*-***t***	's/he lay face down'	[****t****(a)*-*mo*^{h}*ko*]
c.	**V**(...)**V** bases:	*uju*-***m***	'that it spins'	[****m***-*uju*]
d.	**C**(...)**C** bases:	*ɲ*-*uk*^{w}*al*-*a****s***	'I am pregnant'	[****s****a*-*ɲ*-*uk*^{w}*al*]

(21) **Huave's affix mobility generalization**
  a. A mobile affix surfaces as a prefix (i.e., to the left of the root) just in case the constituent it attaches to starts in a vowel and ends in a consonant (20a).
  b. Otherwise, it surfaces as a suffix (i.e., to the right of the root), after the constituent it attaches to (20b–d).

• The way to turn these generalizations into an analysis is to identify what is being *avoided* by prefixation to **V**(...)**C** bases:
  ◦ This is the only case where prefixation but not suffixation avoids a **consonant cluster**.

• The language does not allow consonant clusters.
  ◦ When they do arise, they are repaired by vowel epenthesis.
  → So we independently know that *CC (22a) outranks DEP (22b):

(22) **Cluster constraints**
  a. *CC: Assign one violation * for each sequence of adjacent consonants.
  b. DEP: Assign one violation * for output segment w/o an input correspondent. ("Don't epenthesize!")

• We can thus characterize affix mobility as a way of avoiding clusters without epenthesis:

(23) **Ranking for mobile affixes:** *CC ≫ DEP ≫ ALIGN-R

  ◦ What this ranking says:
    ▪ The best way to fix a cluster is to move an affix away from the right edge (violate ALIGN-R).
    ▪ If you can't fix the problem that way, fix it by epenthesis (violation DEP).

3.2.3 Single mobile affixes

- If there's a vowel at the end of the base, suffixation will never create a cluster, therefore suffixation is perfect ((24a) and (25a)).

(24) **Derivation of *suffixation* for mobile affix with a C(...)V base**

/[mo^{h}ko], t/	*CC	Dep	Align-R	Align-L
a. ☞ mo^{h}ko-t				*
b. mo^{h}ko-*o*t		*!		*
c. t-mo^{h}ko	*!		*	
d. t*o*-mo^{h}ko		*!	*	

(25) **Derivation of *suffixation* for mobile affix with a V(...)V base**

/[uju], m/	*CC	Dep	Align-R	Align-L
a. ☞ uju-m				*
b. uju-*u*m		*!		*
c. m-uju			*!	
d. m*u*-uju		*!	*	

- If the base both begins and ends in a consonant, both suffixation (26a) and prefixation (26c) would create a cluster, which would need to be repaired by epenthesis (26b,d).
  - Since either option would incur the same violations of the phonological constraints (*CC and Dep), the alignment violation you'd get from prefixation (26d) doesn't buy you anything.
  - So you do suffixation plus epenthesis (26b).

(26) **Derivation of *suffixation* (plus epenthesis) for mobile affix with a C(...)C base**

/[nuk^{w}al], s/	*CC	Dep	Align-R	Align-L
a. nuk^{w}al-s	*!			*
b. ☞ nuk^{w}al-*a*s		*		*
c. s-nuk^{w}al	*!		*	
d. s*u*-nuk^{w}al		*	*!	

- Only when the base begins in a vowel and ends in a consonant is violation of Align-R motivated.
  - Suffixation would lead to a cluster and violation of *CC (27a), which would need to be repaired by epenthesis (27b).
  - Prefixation (27c) doesn't violate either of these constraints, instead just violating Align-R.
  - Since Align-R is ranked lowest, this is the optimal candidate, and we generate **prefixation**.

(27) **Derivation of *prefixation* for mobile affix with a V(...)C base**

/[uc], t/	*CC	Dep	Align-R	Align-L
a. uc-t	*!			*
b. uc-*i*t		*!		*
c. ☞ t-uc			*	
d. t*u*-uc		*!	*	

3.2.4 Multiple mobile affixes

- The cyclic part of the analysis is that the cophonologies can change as you add successive morphemes.

- The tableaux in (28) show how [n-u+k^{w}al-*a*s] (*ɲuk^{w}alas*) is derived through two successive rounds of mobile affixation:

(28) **Cycle 1: [ROOT] + SUBORDINATE /n/** (mobile affix cophonology)

/[uk^{w}al], n/	*CC	DEP	ALIGN-R	ALIGN-L
a. uk^{w}al-n	*!			*
b. uk^{w}al-*a*n		*!		*
c. ☞ n-uk^{w}al			*	
d. n*u*-uk^{w}al		*!	*	

↪ **Cycle 2: [ROOT-SUBORDINATE] + 1 /s/** (mobile affix cophonology)

/[nuk^{w}al], s/	*CC	DEP	ALIGN-R	ALIGN-L
a. nuk^{w}al-s	*!			*
b. ☞ nuk^{w}al-*a*s		*		*
c. s-nuk^{w}al	*!		*	
d. s*u*-nuk^{w}al		*	*!	

- The tableaux in (30) show how *ʃina^{h}ʧjon* (29) is derived by switching back and forth between the three different kinds of affixal cophonologies.

(29) [s-i-n-a+^{h}ʧ-*i*n] (*ʃina^{h}ʧjon*) [(Kim 2008:279)]
1-FUT-SB1-give-PL
'that we (excl.) will give'

(30) **Cycle 1: [ROOT] + SUBORDINATE /n/** (mobile affix cophonology)

/[a^{h}ʧ], n/	*CC	DEP	ALIGN-R	ALIGN-L
a. a^{h}ʧ-n	*!			*
b. a^{h}ʧ-*i*n		*!		*
c. ☞ n-a^{h}ʧ			*	
d. n*a*-a^{h}ʧ		*!	*	

↪ **Cycle 2: [ROOT-SUBORDINATE] + FUTURE /i/** (prefix cophonology)

/[na^{h}ʧ], i/	ALIGN-L	*CC	DEP	ALIGN-R
a. na^{h}ʧ-i	*!			
b. ☞ i-na^{h}ʧ				*

↪ **Cycle 3: [FUTURE-ROOT-SUBORDINATE] + 1 /s/** (mobile affix cophonology)

/[ina^{h}ʧ], s/	*CC	DEP	ALIGN-R	ALIGN-L
a. ina^{h}ʧ-s	*!			*
b. ina^{h}ʧ-*i*n		*!		*
c. ☞ s-ina^{h}ʧ			*	
d. s*i*-ina^{h}ʧ		*!	*	

↪ **Cycle 4: [1-FUTURE-ROOT-SUBORDINATE] + PLURAL /n/** (suffix cophonology)

/[sina^{h}ʧ], n/	ALIGN-R	*CC	DEP	ALIGN-L
a. sina^{h}ʧ-n		*!		*
b. ☞ sina^{h}ʧ-*i*n			*	*
c. n-sina^{h}ʧ	*!	*		
d. n*i*-sina^{h}ʧ	*!		*	

3.2.5 Local summary

- Affix direction is encoded through the direction of the (highest-ranked) alignment constraint in an affix's cophonology.

(31) a. **Prefix** = ALIGN-L
b. **Suffix/mobile affix** = ALIGN-R

- Mobility vs. immobility is determined based on the relative ranking of {*CC ≫ DEP} and that alignment constraint. (The distribution of mobile and immobile affixes is arbitrary.)

(32) a. **Mobile** = {*CC ≫ DEP} ≫ ALIGN
b. **Immobile** = ALIGN ≫ {*CC ≫ DEP}

- The specified cyclic order is crucial in order to derive the correct distribution of mobile affixes in different kinds of complex bases.

3.3 Non-cyclic alignment

- Kim (2010:146, fn. 5) said the following:

> *"I do not rule out the possibility of a noncyclic reanalysis, though given the complexity of the facts, a full comparison of cyclic and noncyclic analyses and the more general theoretical implications of each must remain for future research."*

∗ Challenge accepted!

- In Zukoff (2021), I develop a non-cyclic, alignment-based analysis of these facts.
  - My analysis contains most of the same basic ingredients as Kim's (2010) analysis, namely (31) & (32).
  - The main difference is that order is computed fully in parallel (i.e. all together, all at once), rather than cyclically (i.e. one at a time).

- You can get (almost) everything to work out by positing the single ranking in (33).
  - Unlike in the cyclic alignment approach, we need only a single constraint ranking that applies the same to every derivation.

(33) **Total ranking** (all rankings crucial, some morphemes not included)
*CC, ALIGN-PL-R ≫ DEP ≫ ALIGN-FUT-L ≫ ALIGN-2-L ≫ ALIGN-2I-R ≫ ALIGN-SB-R ≫ ALIGN-1-R ≫ ALIGN-ASP$_{(CP/ST)}$-R

- Compare this ranking to the cyclic order Kim needs (34).

(34) **Spell-out order for Kim (2010, 2015b)** (just the morphemes in (33))

ROOT > **2I /r/** > [2 /e/] > {**CP /t/**, **ST /n/**, **SB /m∼n/**} > [**FUT /i/**] > **1 /s/** > **PL /n/**

Layer1 Layer2 Layer3 Layer4

- Interestingly, the relative rankings don't substantially correspond to the cyclic order.
  - This may indicate that the two analyses are actually more different than meets the eye.

3.3.1 Analysis illustration

- Here's a tableau that illustrates how this works for a complex form:

(35) **Tableau for 1st person Future Subordinate of V(...)C bases:** [s-i-n-a^{h}ʧ] (*ʃina^{h}ʧ*)

/a+^{h}ʧ, n_{SB1}, i_{FUT}, s_1/	*CC	Dep	Align-fut-L	Align-sb-R	Align-1-R
a. s-a^{h}ʧ-i-n			**!* (s, a^{h},ʧ)		**** (a^{h},ʧ, i, s)
b. n-a^{h}ʧ-i-s			**!* (n, a^{h},ʧ)	**** (a^{h},ʧ, i, s)	
c. ☞ s-i-n-a^{h}ʧ			* (s)	** (a^{h},ʧ)	**** (i, n, a^{h},ʧ)
d. n-i-s-a^{h}ʧ			* (n)	***!* (i, s, a^{h},ʧ)	** (a^{h},ʧ)
e. i-s-a^{h}ʧ-*i*n		*!			**** (a^{h},ʧ, *i*,n)
f. i-a^{h}ʧ-s-n	*!*				* (s)

- (35f) is the candidate that maximally aligns everything to where it wants to go.
  - FUT /i/ is a "prefix" (Align-fut-L), so it wants to be at the left edge, and it is.
  - SB1 /n/ and 1 /s/ have right-alignment constraints, so they want to be at the right edge, and they are, as best as possible given the ranking Align-sb-R ≫ Align-1-R.

→ But this creates a long cluster at the right edge, and thus two fatal *CC violations.
  - Therefore, as long as *CC outranks all these alignment constraints, this isn't going to be the winner.

- (35e) avoids one of the consonant sequences by kicking 1 /s/ back to between the two left-edge vowels (incurring violations of Align-1-R, the lowest-ranked alignment constraint).
- It leaves the other right-oriented affix SB1 /n/ at the right edge, and avoids that consonant sequence by epenthesizing before it, violating Dep.

→ This violation is fatal because Dep also ranks above all the alignment constraints.

⋆ This means that the optimal candidate will have to have some costly alignment violations.

→ Nevertheless, among the candidates that rearrange the affixes in such a way that avoids all clusters and epenthesis (35a–d), the optimal one is (35c), which minimizes high-ranked alignment violations.
  - This candidate has only one violation of Align-fut-L, but needs that violation because placing one of the right-oriented affixes before alleviates one of the clusters.
  - (35c) also has fewer Align-sb-R violations than its closest competitor (35d), b/c the rightmost right-oriented affix is SB1 /n/ not 1 /s/, even though it's separated from the right-edge by the whole base.

∗ The paper goes through all the derivations in this manner one by one to motivate the rankings in (33), but they all essentially work the same way.

3.3.2 The distribution of mobility

- What I see as one of the points in favor of this analysis over the cyclic one is that it gives a principled explanation to why the plural markers, including default PL /n/, is always a suffix, even though (almost) all the other consonantal affixes are mobile (Zukoff 2021:§3).

- The plural is not just always a suffix, but always the *rightmost* affix in the word (Kim 2010:137), as shown in (36–37).

(36) **2nd person Plural Intransitive (C(...)V)**
i-wic+i-r-u-n (*iwicjorun*) 'you (pl.) rise'
2-rise-2I-ITR-PL [(Kim 2008:252)]

(37) **1st person Plural Atemporal (V(...)C)**
s-a+^{n}ɟim-an (*sa^{n}ɟjoman*) 'we (excl.) want'
1-want-PL [(Kim 2008:249)]

→ If we're handling order via parallel alignment, this will necessarily mean that Align-PL-R is the highest ranked alignment constraint (as is shown in (33)).

- The interesting thing about the plural, in the context of everything else we've seen thus far, is that it remains a suffix even if this requires epenthesis that could have been alleviated by mobility:

(38) **Phonotactically unnecessary epenthesis in plural forms** [(Kim 2008:249, 257, 279)]

a. e-c-[*in*] (*icjon*)
2-eat-PL
'you (pl.) eat (s.t.)'
*[n]-e-c,
*e-[n]-a+c

b. e-^{h}ʧ-[*in*] (*i^{h}ʧjon*)
2-give-PL
'you (pl.) give'
*[n]-e-^{h}ʧ,
*e-[n]-a+^{h}ʧ

c. e-^{n}ʝim-[*an*] (*i^{n}ʝjoman*)
2-want-PL
'you (pl.) want'
*[n]-e-^{n}ʝim,
*e-[n]-a+^{n}ʝim

d. e-r-u+c-[*in*] (*irucjon*)
2-2I-eat-PL
'you (pl.) eat' (generic)
*[n]-e-r-u+c,
*r-e-[n]-u+c

e. i-m-e-^{h}ʧ-[*in*] (*ime^{h}ʧjon*)
FUT-SB-2-give-PL
'you (pl.) will give'
*[n]-i-m-e-^{h}ʧ,
*m-i-[n]-e-^{h}ʧ,
*i-m-e-[n]-a+^{h}ʧ

⋆ While mobility in all the other consonantal affixes is driven by the fact that their alignment constraints rank *below* DEP, the fact that ALIGN-PL-R outranks all these alignment constraints means that having it rank *above* DEP is consistent with all the necessary rankings.

- Whereas the cyclic approach simply has to stipulate that the plural happens to have a suffixal cophonology and everything else has the mobile cophonology, this difference falls out in the parallel approach precisely because of its ranking consistency.

4 Conclusions

- Understanding mobile affixation in Huave is important for understanding the phonology-morphology interface, because it requires grappling with some of the big questions we've been asking throughout the semester:

(39) **How cyclic is the interface?**
a. Kim (2010, 2015b) says it's totally cyclic
b. Zukoff (2021) says it's not cyclic at all

(40) **How does phonological information come into play?**
a. Kim (2015b) says it's just in subcategorization frames in VI (following Paster 2009)
b. Kim (2010) and Zukoff (2021) say it interacts transparently with ordering in the phonological component (**P** ≫ **M**)

- The two kinds of approaches also make (potentially) different predictions about the morphosyntactic structure:

(41) **How does morpheme order relate to morphosyntactic structure?**
a. Unless we adopt a strongly lexicalist view, Kim's cyclic order should reflect the morphosyntactic structure.
b. If we adopt the MAP (Zukoff to appear), Zukoff's alignment ranking should reflect the morphosyntactic structure.

- Since Kim's cyclic order does not match Zukoff's alignment ranking, something's gotta give.
→ But this is good! We want our analyses to make falsifiable predictions.

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