

CONTEXTUAL ALLOMORPHY IN THE MEHRI DP

Morgan Rood | Georgetown University | kr364@georgetown.edu
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1. INTRODUCTION

- Data: Mehri language (Semitic, Modern South Arabian) possessive pronominal constructions
- Framework: Distributed Morphology
- Problem: In certain contexts, agreement markers display allomorphy conditioned by plural features that apparently do not exist (=are not exponed).
- Proposal: Mehri data supports a new adjacency condition on contextual allomorphy (based hierarchically rather than linearly) and additionally bears consequences on the timing and nature of Linearization/Vocabulary Insertion.

This paper argues:

1. Grammatically-conditioned inwardly-sensitive allomorphy can be licensed hierarchically (supporting the idea sketched out in Adger, Béjar and Harbour (2003). (§4)
2. Linearization/Vocabulary Insertion must occur cyclically (node-by-node). (§5)
3. With regards to a specificity hierarchy for the Subset Principle, idiosyncratic properties of the Root are more highly specified than grammatical or phonological properties for the purposes of Vocabulary Insertion. (§5)

2. CONTEXTUAL ALLOMORPHY AND PREVIOUS APPROACHES

- Suffixes (and other morphemes) can be morphologically conditioned by the surrounding environment
- Eg, English plural:
[Cat + s] vs [Ox + en]
- Above, the English plural morpheme (in most contexts -s) demonstrates contextual allomorphy in the context of the \sqrt{OX} and is spelled-out as *-en*

Within a DM framework, contextual allomorphy is schematized as follows:

Selected VIs for Feature [α]
a. [α] \leftrightarrow X / Context1
b. [α] \leftrightarrow Y / Context2

Theoretical Questions:

- Does allomorphic context require immediate adjacency, and should any adjacency requirements be defined hierarchically or linearly?
- Can context make reference to grammatical features, phonological features, or both?
- Can allomorphy be sensitive to the contexts of features closer to the root (inwards sensitivity) and/or features further from the root (outwards sensitivity)?

3. DATA: PRONOMINAL POSSESSIVE CONSTRUCTIONS IN MEHRI¹

- **Singular nouns:** the agreement markers are straightforward suffixes that agree in ϕ -features with the possessor²:

(1)	a. bayt house	b. bayt-ī house-POSS.1S ³ my house	(Watson 2012)
	c. ḥayb father	d. ḥayb-əkən father-POSS.2FPL your (F.PL) fathers	(Rubin 2010)
	e. ḥə-brīt DEF-daughter the daughter	f. ḥə-brət-čh ⁴ DEF-daughter-POSS.3MS his daughter	(Rubin 2010)

- **Plural nouns:** Mehri plurals can be formed via a plural suffix or, more commonly, via a change in the vocalic pattern (the Semitic “broken plural”).
- **Suffixed plurals** (as in (2b), (2c), (2h)): the suffix is absent in the presence of the agreement marker, which takes a special plural form:

(2)	a. ḥayd hand	b. ḥād-ūt-ən ⁵ hand-F-PL hands	c. ḥād-it-ya hand- F-POSS.PL.1S my hands	(Watson 2012)
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¹ Watson (2012) and Rubin (2010) have published the only two modern Mehri grammars. All data is from their texts.
² Watson (2012) and Rubin (2010) both describe pronominal possessive constructions in Mehri as nouns followed by suffixed pronouns. However, because the pronominal possessor can co-occur with an overt possessor, I propose that these suffixes are not pronouns but instead possessor agreement from a pro-dropped possessor (diagnostic from Kramer 2014):

(0)	a. ḥa-brīt-ī DEF-daughter-POSS.1S my daughter	ḥa-hōh DA-PRO.1s ²	(Watson 2012)
	b. šawr-ī opinion-POSS.1S my opinion	ḥa-hōh DA-PRO.1S	

³ Gloss abbreviations: 1-first person, 2-second person, 3-third person, DEF-definiteness marker, M-masculine, NEG-negation, OBJ-object marker, PL-plural, POSS-possessive, PST-past tense, S-singular

⁴ The reduction of syllable-final vowel to a schwa in the context of a suffix is a well-attested phonological process in Mehri (Rubin 2010).

⁵ While Watson and Rubin both describe the *-lən* plural suffix as one morpheme, I propose that the suffix can be broken into the feminine suffix *-l* and the feminine plural suffix *-ən*. Feminine nouns are often marked with the suffix *-l*, which can be clearly seen in this masculine~feminine pair:

(0)	a. gōr servant male servant	b. gər-īt servant-F female servant	(Rubin 2010)
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d. 'ayn eye	e. 'āyɛn-t-ən eye-F-PL. eyes	f. 'āyən-t-i-sən eye-F-POSS.PL.3FPL. their (f) eyes	(Rubin 2010)
g. ġayt sister	h. a-ġawt-an DEF-sister-PL. sisters	i. a-ġit-ya DEF-sister-POSS.PL.1S my sisters	(Watson 2012)

- Note: different forms of the agreement marker in (1b) and (2c), despite same ϕ -features of the possessor
- Note: feminine suffix is exponed only in the context of the plural feature in (2b) and (2c). I argue that this is contextual allomorphy of *n*, seen in select feminine plurals.

- **Broken plurals:** plural form of the noun remains unchanged and the plural form of the agreement marker is suffixed:

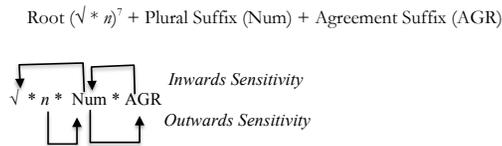
(3) a. xəlĕk cloth, dress	b. xəlōwəḵ cloth.PL. clothes	c. xəlāwḵ-əya ⁶ cloth.PL-POSS.PL.1S my clothes	(Rubin 2010)
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PROPOSAL:

- DM analysis **constrained enough to prevent the plural feature from being exponed as a suffix in certain contexts** ((2c) vs. (2b)), **but allows for the plural feature to be exponed via a vocalic pattern in all contexts** ((3c) vs. (3b)).
- I account for the special plural forms of the possessive agreement that appear regardless of whether the plural feature is exponed ((2c), (3c) vs (1b)).

4. ANALYSIS

Schematization of the Mehri possessive pronominal constructions:



Allomorphic relations:

1. Lexically-conditioned inwardly-sensitive allomorphy of Num to the Root ((2b) vs (3b))
2. Grammatically-conditioned outwardly-sensitive allomorphy of *n* to Num ((2a) vs (2b))
3. Grammatically-conditioned outwardly-sensitive allomorphy of Num to AGR ((2b) vs (2c), (3b) vs (3c))
4. Grammatically-conditioned inwardly-sensitive allomorphy of AGR to Num ((2c), (3c) vs (1b))

⁶ The deletion of the schwa between [w] and [k] in (3c) is the result of a common phonological process in Mehri.

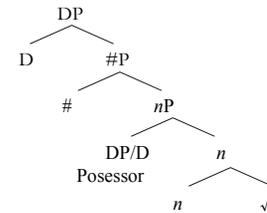
⁷ Simplification for expository purposes: I assume Root is category-neutral and selected by a categorizing head *n* (Marantz 1997). I also assume *n* hosts gender (Lecarme 2002, Kramer 2009, Kramer 2013)

Problem: (4) is problematic for the DM assumption of “rewriting”: once Vocabulary Insertion has taken place, the grammatical features are discharged and no longer available in the derivation (Bobaljik 2000).

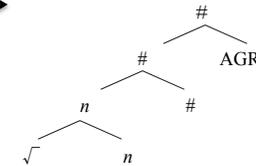
Solution:

Grammatically-conditioned inwardly-sensitive allomorphy can be licensed hierarchically (supporting the idea sketched out in Adger, Béjar and Harbour (2003)).

Possessive structure (narrow syntax):



After head movement (PF):

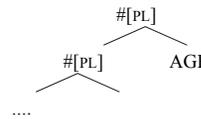


- Following head movement, a complex head is formed within which the ϕ -features of the possessor have been copied onto an AGR node inserted post-syntactically (Embick and Noyer 2001).
- The entire complex head will be Spelled-Out in the same cycle, making the nodes available for contextual allomorphy under locality domains (Embick 2010).
- Presuming inside-out cyclicity (Carstairs 1987, Bobaljik 2000, Embick 2010): Vocabulary Insertion begins at the Root and works upwards (*n* and then Num). The VI for AGR will be inserted last.
- As seen in (1b), (2c), and (3c), the AGR takes a special form when adjacent to a plural node. This would suggest the following Vocabulary Item:

$$\text{AGR} \leftrightarrow \text{plural allomorph} / \text{Num}[\text{PL}] \text{ ___}$$

Because of rewriting, **the above Vocabulary Item is illicit in DM**. However, the AGR is clearly conditioned by the presence of Num. How, then, does the AGR node “see” Num’s grammatical features after they have been discharged?

- Assuming **feature percolation**, the plural feature on Num is not only present on the terminal node, but has percolated up to non-terminal nodes as well:
- (4) Feature Percolation Principles (simplified from Norris 2014)
 - a. All projections of a head X^0 have the same feature-value pairs that X^0 has.
- Though the feature on the terminal node has been discharged, **the features remain on non-terminal nodes:**



- Thus AGR's sisterhood to the #[PL] will allow grammatically-conditioned inwardly-sensitive contextual allomorphy (sisterhood as an appropriate condition for contextual allomorphy sketched out in Adger, Béjar and Harbour 2003).
- **Contextual allomorphy is still conditioned by strict adjacency relations (sisterhood)**, though not linear concatenation (as assumed in Embick 2010).

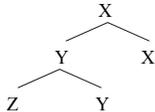
5. ADDITIONAL THEORETICAL CONSEQUENCES

- The present analysis additionally leads to two theoretical consequences regarding the timing and nature of Linearization/Vocabulary Insertion.

Consequence #1:

Linearization/Vocabulary Insertion must occur cyclically (node-by-node).

- Given the following structure, two options for proceeding with Linearization/Vocabulary Insertion:



Option A:

1. Linearization of the M-Word (Z * Y * X)
2. Vocabulary Insertion at Z
3. Vocabulary Insertion at Y
4. Vocabulary Insertion at X

Option B:

1. Linearization/Vocabulary Insertion of Z
2. Linearization/Vocabulary Insertion of Y
3. Linearization/Vocabulary Insertion of X

- The **present analysis necessitates Option B**. Otherwise, AGR would have no sisterhood relationship with non-terminal Num, and thus contextual allomorphy could not happen
- This analysis is contra Embick (2010) that states contextually allomorphy requires linear concatenation, thus necessitating Option A.

Consequence #2:

Specificity Hierarchy for the Subset Principle: idiosyncratic properties of the Root are more highly specified than grammatical or phonological properties with regards to Vocabulary Insertion.

- In order for the plural feature to be expounded via a vocalic pattern in all contexts (regardless of whether it is adjacent to an AGR node), the idiosyncratic property of the Roots (whether it is listed as a “broken plural”) must be the most specific context with regards to the Subset Principle:

Selected VIs for [Num]

- a. [PL] ↔ δw / { \sqrt{xlk} , \sqrt{xm} , $\sqrt{fx...}$ }
- b. [PL] ↔ \emptyset / $__AGR$
- c. [PL] ([FEM]) ↔ $-\partial n$
- d. [PL] ↔ $-\partial m$

- Consistent with DM, the above VIs are ordered.
- If the grammatically-conditioned Vocabulary Item (b) were listed above the lexically-conditioned Vocabulary Item (a), then no plural feature would ever be expounded in the context of an AGR node (erroneously, see (3c)).
- This analysis is akin to the position in Harizanov and Gribanova (2013) that phonological context is more highly specified than a morphosyntactic context.

6. CONCLUSION

- This paper proposed an analysis of the pronominal possessive constructions in Mehri within the framework of Distributed Morphology.
- The data demonstrates how an intricate system of contextual allomorphy can account for puzzling facts regarding possessor agreement.
- Data supports hierarchy-sensitive allomorphy, speaks to controversial issues regarding Linearization/Vocabulary Insertion.

ACKNOWLEDGEMENTS

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APPENDIX 1: Sample Derivation

Reconsider the following example from above:

- (3c) xələwək-sa
cloth-POSS.PL.3FS
her clothes

The following is a step-by-step derivation demonstrating the efficacy of the present analysis.

1. Linearization/Vocabulary Insertion of the Root node,⁸ followed by Linearization/Vocabulary Insertion of the *n*.
2. *n* will be the nominalizing vowel pattern specified for this root (adopting Arad 2003):



3. Root and the vocalic pattern undergo phonological processes to create a prosodic word with the Root.¹⁰ The following word has now been formed:

- (ii) xələk
cloth

4. We have now derived the singular noun.
5. Proceeding outwards, Vocabulary Insertion at Num can now occur.
6. Reconsider the following Vocabulary Items:

- (iii) Selected VIs for [Num]
- a. [PL] ↔ əw / { √xlk, √xtm, √ftx... }
 - b. [PL] ↔ ∅ / __AGR
 - c. [PL] ([FEM])¹¹ ↔ -ən
 - d. [PL] ↔ -əm

7. With this ordering, the vowel pattern for broken plurals will always be inserted, regardless of the presence of an AGR node.
8. Because Num is immediately adjacent to xələk, the VI specified for that Root (a) is inserted.
9. Our derivation now includes xələk concatenated with the vowel pattern that has been expounded on the Num node:

- (iv) xələkəw

10. Phonological processing whereby the vocalic pattern is incorporated into word:

- (v) xələwək
clothes

⁸ Embick (2010) assumes Roots come into the syntax fully specified and thus do not require VI. I remain neutral on this topic, as it makes no empirical difference for my analysis.

⁹ I adopt here Embick’s formalism of ◊ to indicate concatenation post-Linearization.

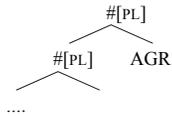
¹⁰ The exact mechanism for this phonological processing in root-and-pattern morphology is still an open area of research. See Tucker (2011) for one prosody-based analysis. Such phonological processing at this stage in the derivation could be reminiscent of Embick’s Pruning, a phonological process that occurs intermittent throughout Vocabulary Insertion.

¹¹ I adopt the formalism in Noyer (1998) in which the parentheses indicate “only insert if this feature has been discharged.”

11. We have now derived the correct form of the plural noun.

12. AGR node is linearized.

13. Remember, though we have linearized $\sqrt{\quad}$, n , and Num, AGR is still in a hierarchical structure:



14. I propose the following VIs for AGR:

(vi) VIs for AGR

- a. [2, FEM] \leftrightarrow -ša /Num[PL]__¹²
- b. [3, FEM] \leftrightarrow -sa /Num[PL]__
- c. [1] \leftrightarrow -ya /Num[PL]__
- d. [2] \leftrightarrow -ka /Num[PL]__
- e. [3] \leftrightarrow -ha /Num[PL]__
- f. [2, FEM] \leftrightarrow -š
- g. [3, FEM] \leftrightarrow -s
- h. [1] \leftrightarrow -i
- i. [2] \leftrightarrow -k
- j. [3] \leftrightarrow -h
- k. [PL] ([FEM]) \leftrightarrow -ən
- l. [PL] \leftrightarrow -əm

15. The VI (b) is inserted into the derivation.

(vii) xəlōwəḳ \circ -sa \rightarrow xəlāwḳəsa
her clothes

16. Success! The correct word has been derived.

APPENDIX 2: Another sample derivation

The following derivation will demonstrate that the present analysis can account for both feminine and plural suffixes on the noun.

(viii) c. a-žefər-ət-iken
DEF-hair-F-POSS.PL.2FPL

1. Linearization/VI of n^{13} and phonological processing:

(ix) žfr \circ əa \circ -t \rightarrow žəfart

2. Vocabulary Insertion at Num. Revist:

(x) Selected VIs for Num:

- a. [PL] \leftrightarrow ḡw / { $\sqrt{\text{xlk}}$, $\sqrt{\text{xm}}$, $\sqrt{\text{tx}}$... }
- b. [PL] \leftrightarrow - \emptyset / __ \circ AGR

4. $\sqrt{\text{žfr}}$ is not listed as a broken plural. (b) is the most highly specified VI.

5. Linearization/VI of Num and phonological processing:

(xi) žəfart \circ \emptyset \rightarrow žəfart

7. Linearization/VI of AGR. I assume fission of the [PL] feature from the AGR node, resulting in VI $-ka$ being inserted for [2F] and $-\text{ən}$ being inserted for [PL]:

(xii) žəfart \circ -ka \circ -ən \rightarrow žefərətikən

10. Success! We have derived the correct word.

¹² I have simply used Num__ to formalize the structural relation, although perhaps a more specific designation of hierarchical adjacency could be beneficial in future work.

¹³ Remember, n hosts gender. I assume fission such that both the appropriate vocalic pattern and the feminine suffix $-t$ can be expounded.