The Locus of Variation in Ā-Sensitive Agreement

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1 Introduction

• In many languages, clausal morphology is sensitive to the features typically associated with Ā-extraction, such as those related to wh-questioning, relativization, focus and topicalization.

• In particular, in many languages the form of φ-agreement is sensitive to these features, a phenomenon I will refer to as Ā-sensitive φ-agreement (effects), defined descriptive as in (1).

(1) Ā-sensitive φ-agreement effects
An instance of φ-agreement X exhibits an Ā-sensitivity effect if
a. X takes the form α for a particular set of φ-features φ₁ on nominal N when N does not have an Ā-feature and
b. X takes the form β for φ₁ on N when N does have an Ā-feature, where α≠β.

• Some examples of effects in relative clauses meeting the definition above are shown in (2)–(4), below.¹

(2) Fiorentino (Romance, Italy)
le ragazze che { gli / *le } { ha / *hanno } parlato con te
the girls C { 3SG.M / *3PL.F } { have.3SG / have.3PL } spoken with you
‘the girls who have spoken to you?’ (Brandi and Cordin 1989:124–125)

(3) Abkhaz (West Caucasian, Russia)
way a-xac’a da-{zi/’1i}]-báx a-jyáb,
that DEF-boy 3SG.AN.ABS-{WH.ERG/’3SG.F.ERG}-saw DEF-girl
‘the girl who saw that boy’ (Hewitt 1979:61)

(4) Kabyle² (Berber, Algeria)
taqcikt-nni i { i-wala-n / ’t-wala } Mohand
woman-DEM C { 3SG.M-see-PTCP / 3SG.F-see } Mohand
‘the girl who saw Mohand’

• In all three languages, the form of φ-agreement crossreferencing the head of the relative clause does not take the form expected given the φ-features of that nominal

• However, there are differences in the specifics of the morphology that surfaces in these contexts.
  ☑ Fiorentino → The subject clitic and finite auxiliary are in default form (3SG.M and 3SG)
  ☑ Abkhaz → Ergative agreement takes a specialized form that only occurs with Ā-arguments (z-)
  ☑ Kabyle → The verb takes default agreement (i-3SG.M) and an additional ‘participle’ suffix (-n)

The Puzzle

Why does implication in an Ā-dependency affect the form of agreement referencing a DP? That is, why does the situation in (5) potentially affect φ-agreement on H?

(5) [ ... DF[φ, Ā] ... AGR-H ... ]

• The dominant line of thought in the previous literature has been to treat default morphology in the Ā-context and specialized morphology in the Ā-context as distinct.

  ☑ Default morphology → generally referred to as anti-agreement since Ouhalla (1993);
    – Treated as lack of agreement. Syntactic constraints on Ā-movement block extraction of the agreeing DP. Circumvention of these constraints disrupts the normal syntax of agreement (Ouhalla 1993; Richards 1997, 2001; Boeckx 2003; Schneider-Zioga 2007; Diercks 2010; Henderson 2013, a.o.).

  ☑ Specialized morphology → generally referred to as wh-agreement in the literature (Georgopoulos 1991; Watanabe 1996; Chung 1998).
    – Treated as the result of a normal agreement process between a head/probe and DP bearing Ā-related features (Chung and Georgopoulos 1988; Georgopoulos 1991; Chung 1998; Watanabe 1996; O’Herin 2002; Caponigro and Polinsky 2015)

¹Abbreviations used in this handout: 1 = first person, 2 = second person, 3 = third person, AA = anti-agreement (form), AA = absolute, AN = animate, CL = class (Bantu), def = definite, dem = demonstrative, erg = ergative, f = feminine, foc = focus, inan = inanimate, m = masculine, pfv = perfective, pl = plural, prs = present, pst = past, PTCP = participle, rel = relative, subj = subject, sg = singular, wh = wh-related morpheme.

²Unless otherwise cited, Kabyle data in this talk were elicited by me during work with two native speakers in Montréal.
On this view, Ā-sensitive φ-agreement effects do not constitute a single theoretical class.

**Evidence from variation**

- I focus on the range of variation in the morphology that languages employ in the Ā-context, what this morphological variation tells us about Ā-sensitive φ-agreement.

⇒ I argue that the above analytic dichotomy should be abandoned – anti-agreement and wh-agreement are two different surface instantiations of the same underlying phenomenon. Variation is located in the morphology.

**Analysis in a nutshell**

- **Syntax**
  When a φ-probe agrees with a goal bearing an Ā-feature, the resulting feature bundle on the probe includes both φ-features and an Ā-feature.

(6) \[ H, φ, Ā \]

- **Morphology**
  When Ā-features and φ-features cooccur in the same feature bundle, partial or total impoverishment of the φ-features may take place.

(7) Bundle on \( H \) \[ H, φ, Ā \]

(8) Impoverishment \[ φ −→ ∅ / [∼, H, Ā] \]

- Impoverishment leads to the realization of an unexpected underspecified exponent.
- **Variation** arises from how a given language’s morphology manipulates and realizes feature bundles of the type in (7).

Focus on two dimensions of variation:

1. How many φ-feature contrasts are expressed in the Ā-context?
   - No φ-features = total φ-impoverishment
   - Some φ-features = partial φ-impoverishment
   - All φ-features = no φ-impoverishment

2. Is there specialized morphology that occurs only in the Ā-context = Ā-exponence

Dimensions 1 and 2 are independent of one another, that is, we can fill in completely a two by three typology of the interaction between φ-impoverishment and Ā-exponence, as shown in table 1.

<table>
<thead>
<tr>
<th>φ-impoverishment</th>
<th>TOTAL</th>
<th>PARTIAL</th>
<th>NONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ā-exponence</td>
<td>YES</td>
<td>Abaza</td>
<td>Tashlhit, Kobiana, Fiorentino, Lubukusu, Spanish</td>
</tr>
</tbody>
</table>

Table 1: Typology of Ā-exponence and impoverishment

The analysis argued for here derives this variation through a uniform syntax for agreement in the non-Ā- and Ā-contexts. Variation is located in the morphology.

# 2 Deriving Ā-sensitive φ-agreement effects

- In section 2.1, I motivate the morphological analysis of Ā-sensitive φ-agreement, taking a close look at the West Caucasian language Abaza (closely related to Abkhaz).

- In section 2.2, I give an overview of the types of syntactic accounts that have been employed in the literature to account for anti-agreement.

## 2.1 Abaza: motivating the analysis

- Verbs in Abaza display an ergative-absolutive agreement pattern for person/gender/number. Both subjects and objects control agreement in transitive clauses.

  - Intransitive subjects and transitive objects control one agreement paradigm; transitive subjects control another.

  - Absolutive is distinguished from ergative by position in the verb and by the form of 3rd person exponents.
Following O’Herin’s (2002) analysis of Abaza, I assume that agreement prefixes spell out φ-probes on functional heads along the clausal spine. Specifically, I assume these probes are hosted by T (absolutive) and v (ergative).

(9) Agreement with T and v

In (9), the lower φ-probe on v agrees with the external argument in Spec-vP.

(10) Features on T and v after Agree

- [T, φ, Agr]
- [v, φ, Agr]

Each agreement paradigm in Abaza includes a morpheme that indexes Ā-arguments: y- for absolutives, (11) and z- for ergatives, (12).

Ergative wh-agreement: z-

- a. dǝzda, s-axč'ya, yǝ-νa-axʷ
  Izmir pro who abs.wh-in-prs
  ‘What stole my money?’ (O’Herin 2002:252)
- b. a-fač'ya, a-finǰan, a-pna dǝzda, y-na-νa-z, axʷ
  def-sugar def-cup 3sg.inan-at who 3sg.inan-pfv-erg.wh-take
  ‘Who took the sugar out of the cup?’ (O’Herin 2002:252)

Absolutive wh-agreement: y-

- a. a-čʷwal dǝzda, yǝ-ta-wa
  def-sack what abs.wh-in-prs
  ‘What is in the sack?’ (O’Herin 2002:252)
- b. Izmir pro dǝzda, yǝ-t-bakʷaz
  Izmir 3pl who abs.wh-3pl-see.pl pst
  ‘Who did they see in Izmir?’ (O’Herin 2002:252)

Observation 1: The two wh-agreement morphemes differ in their relationship to the rest of the paradigm.

- Ergative wh-agreement z- does not occur elsewhere in the paradigm.
- Absolutive wh-agreement y- does occur elsewhere in the paradigm.

Observation 2: Wh-agreement is highly syncretic – it only expresses that a given Agr head has agreed with an Ā-operator. No other φ-feature contrasts are expressed.

Assuming syncretism arises from underspecification, we come to the following conclusion:

(13) The prefixes z- and y- are highly underspecified. They spell out a very small set of features.

- a. The prefix y- is a morphological default.
- b. The prefix z- spells out the feature [Ā]

\^See Coon (2017) for arguments that ergative agreement is low, derived by Spec-Head agreement with v.

I take the [Agr] feature in (10) to be equivalent to the postsyntactically inserted, dissociated Agr-nodes that are assumed in some analyses of morphological agreement in DM (Halle and Marantz 1993; Kramer 2010; Norris 2014).
Taking (13) seriously, I assume that there are basically three types of agreement vocabulary items (VIs) in Abaza, shown in table 4:

<table>
<thead>
<tr>
<th>VI type</th>
<th>Features spelled out</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full agreement</td>
<td>[φ, Agr]</td>
<td>Abs/Erg</td>
</tr>
<tr>
<td></td>
<td>[φ, Agr, T]</td>
<td>Abs</td>
</tr>
<tr>
<td></td>
<td>[φ, Agr, v]</td>
<td>Erg</td>
</tr>
<tr>
<td>Proper Wh-agreement (z-)</td>
<td>[Ā, Agr, v]</td>
<td>Erg</td>
</tr>
<tr>
<td>Elsewhere (y-)</td>
<td>[Agr]</td>
<td>Abs</td>
</tr>
</tbody>
</table>

Table 4: Types of Abaza agreement VIs

The agreement VIs z- and y- do not spell out φ-features.

- The prefix z- spells out [Ā], [Agr], and [v].
  (14) Abaza wh-agreement
  z- ↔ [Ā, Agr, v]

- The prefix y- spells out just [Agr].
  (15) Abaza default agreement
  y- ↔ [Agr]

I argue that a feature bundle including an Ā-feature like the one in (14) is an option because of the way φ-probes interact with the features on a goal that they agree with.

Ingredients of the account

1. XP's that undergo Ā-movement bear some kind of Ā-feature. I assume that Ā-features on DPs are merged on D and both Ā-features and φ-features percolate to the DP level.

(16) DP bearing both Ā- and φ-features

\[
\begin{array}{c}
\text{DP} [φ, Ā] \\
\text{D} [φ, Ā] \\
\end{array}
\]

2. Following Deal (2015, 2016), a probe's interaction condition(s) and satisfaction condition(s) may be distinct.

(17) Interaction and Satisfaction in φ-agreement

A probe H may interact with feature set F even if it may only be satisfied by feature set G, G ⊆ F.

- Interaction: Probe H interacts with feature [F] by copying [F] to H.
- Satisfaction: Probe H is satisfied by feature G if copying G to H makes H stop probing.

(adapted from Deal 2016:3)

When a probe interacts with a feature but is not satisfied by that feature, it continues searching. Search only halts when probe's satisfaction condition is met.

3. The set of φ-features (Φ) and the set of Ā-features (Ā) belong to a larger set of features, F.

(18) a. F = {Φ, Ā}

b. There is no variation in interaction conditions – φ-probes and Ā-probes both have the same interaction conditions: F.

Consider the consequences of (17) and (18) for a φ-probe on a head H that finds a DP that bears both [φ] and [Ā].

- [uφ] on H searches in its c-command domain for features and finds the DP bearing [φ] and [Ā].
- The probe interacts with both of these features, and therefore copies back both sets of features to H.
• Therefore, a head with \([uφ]\) that Agrees with a DP with \([Ā]\) in Abaza will always have (at least) the features in (20).

\[
(20) \quad \text{Form of an Abaza head hosting a } φ\text{-probe after Agree with operator }
\left[ \begin{array}{c}
φ, Ā, Agr, \\
\{ v \}
\end{array} \right]
\]

• However, if (20) is the form of a \(φ\)-probe at the point of Vocabulary Insertion, the prefixes \(z\)- and \(y\)- should never be inserted, even in \(Ā\)-contexts where this indeed occurs.

• This is because vocabulary insertion is constrained by the Subset Principle (Halle and Marantz 1993).

\[
(21) \quad \text{Subset Principle (based on Keine 2010:8)}
\]

A vocabulary item \(V\) is inserted into a terminal node \(N\) iff (a) and (b) hold:

a. The morphosyntactic features of \(V\) are a subset of the morphosyntactic features of \(N\).

b. \(V\) is the most specific vocabulary item that satisfies (a).

• Full agreement VIs should always be inserted instead of \(z\)- or \(y\)- because they will always realize more features of the feature bundle in (20) than \(z\)- or \(y\)-.

\[\text{The Solution}\]

• I propose that \(z\)- and \(y\)- can be inserted in the first place because of the postsyntactic operation \textit{impoverishment} (Bonet 1991; Noyer 1992, 1997; Halle and Marantz 1993; Keine 2010).

• Specifically, I argue that the impoverishment rule in (22) applies prior to Vocabulary Insertion in Abaza

\[
(22) \quad \text{Abaza } φ\text{-feature impoverishment}
\left[φ\right] \rightarrow \emptyset / \left[\_\_ \_\_, Ā, Agr\right]
\]

• By deleting features from a terminal nodes, impoverishment may block the insertion of a VI into that node because the VI’s features are no longer a subset of that node.

• Thus, impoverishment systematically leads to the insertion of underspecified morphemes in certain environments.

• Consider how this analysis derives ergative \textit{wh}-agreement with a 3sg feminine DP.⁵

\[
(23) \quad \text{Derivation of } \textit{wh}-\text{agreement with a 3sg feminine ergative argument}
\]

\[
\begin{array}{c}
a. \text{Agree in the Syntax} \\
b. \text{In the morphology}
\end{array}
\]

\[
i. \text{Feature bundle on } v:\n\begin{array}{c}
3, -pl, +anim, +fem, Ā, v, Agr
\end{array}
\]

\[
ii. \text{Impoverishment:}
\begin{array}{c}
3, -pl, +anim, +fem, Ā, v, Agr \rightarrow [Ā, v, Agr]
\end{array}
\]

\[
iii. \text{Vocabulary Insertion:}
\begin{array}{c}
z\leftrightarrow [Ā, Agr, v] \\
y\leftrightarrow [Agr]
\end{array}
\]

\[\text{This analysis centers the mechanism that derives } Ā\text{-sensitive agreement primarily in the morphology.}\]

\[\text{Core Intuition}
\]

There is a deep connection between underspecification, impoverishment, and the morphology that appears in the context of Ā-movement.

\[\text{In terms of the dimensions of variation mentioned in the introduction, Abaza has ...}\]

\[\text{Total impoverishment, as no } φ\text{-features are expressed in the } Ā\text{-context}\]

\[\text{Ā-exponence with ergative agreement}\]

\[\text{No Ā-exponence with absolutive agreement}\]

---

⁵ I assume that the set of \(φ\)-features is decomposed into an articulated set of binary valued features. For Abaza, the relevant features are:

\[\{±partcipant\}, \{±author\}, \{±plural\}, \{±animate\}, \{±feminine\}\]
The fact that Abaza instantiates both these options is significant, in that it shows that lack of φ-agreement is not in complementary distribution with Ā-exponing morphology in the same language.

### 2.2 Syntactic alternatives

- **As mentioned above, the dominant line of thought in previous literature has been to treat default morphology in the Ā-context (“anti-agreement”) as different from specialized Ā-related agreement morphology (“wh-agreement”).**

- **There is little theoretical consensus in the literature on how anti-agreement should be derived, but existing accounts are predominantly syntactic.**

- **The core idea is that anti-agreement results from syntactic constraints on movement.** The logic is generally as follows:

  1. Agreement with a DP requires a certain structural configuration.
  2. This structural configuration blocks Ā-movement of that DP.
  3. For such a DP to be extracted, it must not enter into the structural configuration required for φ-agreement.
  4. Because the DP does not enter into this configuration, no φ-agreement occurs.

- **In other words, anti-agreement should arise in the scenario in (24), where α is a position normally targeted for φ-agreement, and β is the landing site of Ā-movement.**

  \[
  \begin{array}{c}
  \alpha \\
  \beta \\
  \ldots
  \end{array}
  \]

  \[
  \begin{array}{c}
  \alpha \\
  \ldots
  \end{array}
  \]

- **Syntactic accounts of anti-agreement differ on the specifics of the nature of the constraint employed.**

  1. **Criterial Freezing (Rizzi and Shlonsky 2007; Diercks 2010; Shlonsky 2014)**

    - Canonical φ-agreement requires that the DP move to a ‘criterial position’, from which further movement is blocked (Rizzi 2006, 2007).
    - Avoidance → don’t move to the criterial position

  2. **Feature Strength (Richards 1997, 2001; Boeckx 2003; Henderson 2013)**

    - Positions in a movement chain may be ‘strong’ or ‘weak’ (defined featurally). A chain may not contain more than one ‘strong’ position. Ā-movement and φ-agreement both involve ‘strong’ features.
    - Avoidance → ‘weaken’ a strong position (voiding agreement)

  3. **Anti-locality (Bošković 1997; Cheng 2006; Schneider-Zioga 2007; Erlewine 2016; Pesetsky 2016)**

    - Phrasal movement must not be too short/local. Canonical φ-agreement brings a DP into a position from which Ā-movement will qualify as too short.
    - Avoidance → move from a position that is not in an anti-local configuration

- The shared property of this type of accounts is that the normal syntax of φ-agreement is disrupted by Ā-movement.

- In the next sections, I’ll present data that are problematic for this core property.

- The unified, morphological theory of Ā-sensitive φ-agreement developed in the previous section handles these data in a straightforward way.

### 3 Variation in φ-feature neutralization

- **Languages differ as to how many φ-feature contrasts are neutralized in the presence of Ā-features.**

  - **Total neutralization** → all φ-feature contrasts are neutralized
  - **Partial neutralization** → some φ-feature contrasts are neutralized while others are retained.

- **Compare the Kabyle data in (25) with the Tashlhit (Berber, Morocco) data in (26).** In Tashlhit, number agreement is retained under subject extraction, while person and gender agreement are suppressed.

  (25) **Kabyle (Berber, Algeria)**

    \[
    \text{iqicin-nni} \quad \text{woman-DEM} \quad \text{Mohand}
    \]

  \[
  \text{i-wala-n} \quad /wala-n \quad \text{Mohand}
  \]

  ‘the boys who saw Mohand’

  *See Baier (2017) for further arguments against an anti-locality based approach to anti-agreement not discussed in this talk.*
Parameters Workshop for Lisa Travis, McGill University      May 18, 2019

(26) Tashlhit (Berber, Morocco)

\[\text{irgazn, nna flegh-}n^-\text{(in)} \]
\[\text{man. pl } \text{C} \text{ext left-PFV-} \text{PTCP}^-\text{(pl)} \quad \_i\]

‘the men who left.’ (Ouhalla 2005 citing Chafiq 1990:123)

• In Kabyle, the verb takes a 3sg.m prefix \(i\) and the participle suffix -\(n\).

• In Tashlhit, the verb takes the participle suffix, and in addition must take the plural suffix -\(in\).

• The Kabyle and Tashlhit subject agreement paradigms and participle forms are given in the tables below.¹

<table>
<thead>
<tr>
<th>SG</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(V-b)</td>
</tr>
<tr>
<td>2m</td>
<td>(t-V-t)</td>
</tr>
<tr>
<td>2f</td>
<td>(t-V-t)</td>
</tr>
<tr>
<td>3m</td>
<td>(i-V)</td>
</tr>
<tr>
<td>3f</td>
<td>(t-V)</td>
</tr>
</tbody>
</table>

Table 6: Kabyle \(\varphi\)-agreement

<table>
<thead>
<tr>
<th>SG</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(i-V-n)</td>
</tr>
<tr>
<td>2m</td>
<td>(i-V-n)</td>
</tr>
<tr>
<td>2f</td>
<td>(i-V-n)</td>
</tr>
<tr>
<td>3m</td>
<td>(i-V-n)</td>
</tr>
<tr>
<td>3f</td>
<td>(i-V-n)</td>
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</tbody>
</table>

Table 7: Kabyle participle

<table>
<thead>
<tr>
<th>SG</th>
<th>PL</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>(V-b)</td>
</tr>
<tr>
<td>2m</td>
<td>(t-V-t)</td>
</tr>
<tr>
<td>2f</td>
<td>(t-V-t)</td>
</tr>
<tr>
<td>3m</td>
<td>(i-V)</td>
</tr>
<tr>
<td>3f</td>
<td>(t-V)</td>
</tr>
</tbody>
</table>

Table 8: Tashlhit \(\varphi\)-agreement

<table>
<thead>
<tr>
<th>SG</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(i-V-n)</td>
</tr>
<tr>
<td>2m</td>
<td>(i-V-n)</td>
</tr>
<tr>
<td>2f</td>
<td>(i-V-n)</td>
</tr>
<tr>
<td>3m</td>
<td>(i-V-n)</td>
</tr>
<tr>
<td>3f</td>
<td>(i-V-n)</td>
</tr>
</tbody>
</table>

Table 9: Tashlhit AA

• Partial neutralization is significant because it indicates that there must be some successful agreement with the extracted DP in the syntax.

• In Tashlhit, at least the [NUMBER] feature of the extracted subject must be available to Agree in the syntax so that these features can be spelled out in the morphology.

• This fact is an important explanandum for any general theory of \(\varphi\)-agreement neutralization under Ā-extraction.

• In terms of the current theory, the difference between total and partial neutralization rests in the impoverishment rules active in a given language.

¹Tashlhit paradigms from Applegate (1958:27).

\(\varphi\)-agreement neutralization under Ā-extraction

\(\varphi\)-agreement under Ā-extraction

\(\varphi\)-agreement under Ā-extraction

\(\varphi\)-agreement under Ā-extraction

\(\varphi\)-agreement under Ā-extraction

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\(\varphi\)-agreement under Ā-extraction

\(\varphi\)-agreement under Ā-extraction

\(\varphi\)-agreement under Ā-extraction

\(\varphi\)-agreement under Ć-extraction
- **Ghadamès** (Berber, Libya) has three participle forms—masculine singular, feminine singular, and plural. Compare these to the full agreement forms (Kossman 2013:91–95).

<table>
<thead>
<tr>
<th>SG</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1M</td>
<td>V-ăʕ</td>
</tr>
<tr>
<td>1F</td>
<td>V-ăʕ</td>
</tr>
<tr>
<td>2M</td>
<td>t-V-ăt</td>
</tr>
<tr>
<td>2F</td>
<td>t-V-ăt</td>
</tr>
<tr>
<td>3M</td>
<td>i-V</td>
</tr>
<tr>
<td>3F</td>
<td>t-V</td>
</tr>
</tbody>
</table>

Table 10: Ghadamès φ-agreement

- The participle never expresses agreement for [PERSON].
- When the extracted subject is plural, the verb has only one possible form → V-n-in.
- When the extracted subject is singular, the verb has two possible forms → i-V-ăn (masculine) or t-V-ăt (feminine).

- The current account captures this pattern with impoverishment rules that are conditioned not only by the presence of an Ā-feature, but also by the presence of specific φ-features.

(31) **Ghadamès partial φ-impoverishment**

a. [PERSON] → Ø / [_, Ā, Agr]

b. [NUMBER] → Ø / [_, +PART, Ā, Agr]

- **Ben Tey** (Dogon, Mali) presents another example of this type of partial neutralization.

- Subjects normally control person and number agreement on the verb.
- Subject focus triggers anti-agreement.
- The full agreement and anti-agreement paradigms are given in tables 12-13.

<table>
<thead>
<tr>
<th>SG</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>V-yy</td>
</tr>
<tr>
<td>2</td>
<td>V-ww</td>
</tr>
<tr>
<td>3</td>
<td>V</td>
</tr>
</tbody>
</table>

Table 12: Ben Tey φ-agreement (Heath 2013)

<table>
<thead>
<tr>
<th>SG</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>V</td>
</tr>
<tr>
<td>2</td>
<td>V</td>
</tr>
<tr>
<td>3</td>
<td>V</td>
</tr>
</tbody>
</table>

Table 13: Ben Tey AA (Heath 2013)

- [PERSON] agreement is always suppressed.
- [NUMBER] agreement is only suppressed if the focused subject is 1st/2nd person.

- Assuming that that 1st person and 2nd person are distinguished from 3rd person minimally with the feature [+PART] (Harley and Ritter 2002; Nevins 2007, a.o.), the Ben Tey pattern can be derived through two partial φ-impoverishment rules.

(32) **Ben Tey partial φ-impoverishment**

a. [PERSON] → Ø / [_, Ā, Agr]

b. [NUMBER] → Ø / [_, +PART, Ā, Agr]

- In both Ghadamès and Ben Tey, it is the presence both of an Ā-feature and of specific φ-feature that triggers anti-agreement.

- The requirement of a specific φ-feature requirement makes these patterns challenging to syntactic analyses of anti-agreement.

- Again recall the underlying logic of syntactic accounts:

(33) \[ \[\_ \_ \_ α \_ \_ \_ β \_ \_ \_ \_ \_ \] \]

α is a position normally targeted for φ-agreement, β is the landing site of Ā-movement.

- In order to derive the **Ben Tey pattern**, we would have to say something like the following:

  - [+PART] agreement is only possible when a DP is at α,
  - [NUMBER] agreement is possible even if a DP is not at α,
  - but [NUMBER] agreement is impossible if the DP could have agreed for [+PART] and is not located at α.
  - In other words, DPs with [+PART] can only agree from α, while DPs with [-PART] agree from another position.

- In order to derive the **Ghadamès pattern**, we would have to say something like the following:

  - [PERSON] agreement is only possible when a DP is at α,
  - [NUMBER] agreement is possible even if a DP is not at α,
  - [NUMBER] agreement is possible even if a DP is not at α but only when a DP is [-PLURAL],
  - ... but this limitation on [NUMBER] agreement is only in play when the DP is not at α.

\*The impoverishment rules proposed for Ben Tey in (32) must be crucially ordered, with (32b) preceding (32a).
- I suggest that the morphological alternative is a much more straightforward way of explaining the Ben Tey and Ghadamès patterns.
- It is known that \( \varphi \)-features are capable of triggering impoverishment of other \( \varphi \)-features (Noyer 1992, 1997).
- Therefore, it should be possible for \( \varphi \)-features to condition such deletion in the context of Ā-features.

4 The independence of impoverishment and Ā-exponence

- We have now seen examples of morphological variation along two dimensions
  1. How many \( \varphi \)-feature contrasts are impoverished in the Ā-context?
  2. Is there morphology that realizes the Ā-feature copied by the \( \varphi \)-probe.
- Whether a language has total or partial \( \varphi \)-impoverishment is independent of whether or not that language exhibits Ā-exponence.
- Both Abaza and Kabyle have morphemes that realize this Ā-feature, (34).

(34) Abaza and Tarifit \( \rightarrow \) total impoverishment, Ā-feature realized

a. Abaza
   a-faːsîm a-finj’an a-pn̥a daːzda y-na-z-ax
   DEF-sugar DEF-cup 3SG.INAN-at who 3SG.INAN-PFV-ERG.WH-take
   ‘Who took the sugar out of the cup?’ (O’Herin 2002:252)

b. Kabyle
   iqqicin-nni i { i-wala-n / *wala-n } Mohand
   woman-DEM C { 3SG.M-SEE-PTCP / see-3PL.M } Mohand
   ‘the boys who saw Mohand’

- The northern Italian dialect Fiorentino does not realize the Ā-feature responsible for impoverishment, (35).

(35) Fiorentino \( \rightarrow \) total impoverishment, Ā-feature not realized

    Quante ragazz{e}e gli ha parlato con te
    many girls sg have.sg spoken with you
    ‘How many girls (it) has spoken to you?’ (Brandi and Cordin 1989:124)

- All three languages, however, exhibit total \( \varphi \)-impoverishment.

- The Berber language Tashlhit displays partial impoverishment and a morpheme expressing the Ā-feature left over after such impoverishment has taken place, as shown in (36).

(36) Tashlhit \( \rightarrow \) partial impoverishment, Ā-feature realized

    irgran lli kerz-n-in igran
    men CREL plow-PTCP-PL fields
    ‘the men who have worked the fields’ (Aspinon 1953:166)

- In the Bantu language Lubukusu, on the other hand, we have partial impoverishment but no overt realization of the Ā-feature that is responsible for triggering the impoverishment rule, (37).

(37) Lubukusu \( \rightarrow \) partial impoverishment, Ā-feature not realized

a. Nise o-{w/*n}-onak-e kumulyango kuno
   1sg CL1.C-{CL1AA/1SG.SBJ}-damage-PST CL3.DOOR CL3.DEM
   ‘It is I who damaged the door’ (Diercks 2010:133)

b. Nifwe ba-{w/*khw}-onak-e kumulyango kuno
   1PL CL2.C-{CL2.SBJ/1PL.SBJ}-damage-PST CL3.DOOR CL3.DEM
   ‘It is us who damaged the door’ (Diercks 2010:133)

- Assuming that 1st persons are specified for as class 1/2 (gender A singular or gender A plural), (37) involves the impoverishment of [PERSON] without deleting [GENDER, NUMBER] (Diercks 2010; Henderson 2013)

- It is also clearly the case that some languages do not neutralize \( \varphi \)-features in the context of Ā-features.

- An example of such language is Mexican Spanish, where full subject-verb \( \varphi \)-agreement is present on the verb in the relative clause part of a subject cleft.

(38) Mexican Spanish subject cleft \( \rightarrow \) full \( \varphi \)-agreement, no Ā-exponence

    Soy yo que estoy aquí
    be.1SG 1SG C be.1SG here
    ‘It’s me who is here.’

- The full agreement between the verb estoy and the clefted 1SG pronoun can be accounted for by saying that Mexican Spanish does not have an active \( \varphi \)-impoverishment rule in the context of Ā-features.

\(^{10}\)Judgement from a native speaker of Mexican Spanish from Oaxaca.
A clear prediction of the theory of Ā-sensitive agreement developed in this talk is the following:

There should be languages that exhibit Ā-exponence while lacking φ-impoverishment in the context of Ā-features.

There is at least one such language → **Kobiana** (Atlantic, Guinea-Bissau).

Verbs in Kobiana agree with their subjects for person and number through a set of subject agreement prefixes. Subject focus triggers a second set of subject agreement prefixes on the verb.

**Kobiana subject-verb agreement** (John Merrill, p.c.)

<table>
<thead>
<tr>
<th>Subject focus</th>
<th>No subject focus</th>
<th>Subject focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>á-ndékk-i</td>
<td>áyi ée-ndékk-ǝn-i</td>
<td>'You walked.'</td>
</tr>
<tr>
<td>2sg-walk-PFV</td>
<td>2sg 2sg.FOC-walk-FOC-PFV</td>
<td>'It’s you who walked.'</td>
</tr>
</tbody>
</table>

In (40a), the 2sg subject is not focused and the verb bears the agreement prefix á-.

In (40b), the 2sg subject is focused and the subject agreement prefix is changed to ée-.

The paradigms found with non-focused subjects and focused subjects are given in tables 14 and 15, respectively (both from Voisin 2015:368).

<table>
<thead>
<tr>
<th>SG</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 má- ngée-</td>
<td>1 mé- ngéena-</td>
</tr>
<tr>
<td>2 á- káa-</td>
<td>2 ée- káana-</td>
</tr>
<tr>
<td>3 á- náá-</td>
<td>3 áma- nááná-</td>
</tr>
</tbody>
</table>

Table 14: Kobiana φ-agreement

There are two crucial observations with regards to the two φ-agreement paradigms above.

1. The subject focus agreement paradigm in table 15 retains all φ-feature contrasts present in the basic agreement paradigm in table 14.

2. The Kobiana subject focus φ-agreement paradigm is not transparently segmentable.

In the current theory, I argue that this means Kobiana has two distinct sets of φ-agreement VI, shown in (41a)

<table>
<thead>
<tr>
<th>TOTAL</th>
<th>PARTIAL</th>
<th>NONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>φ-impoverishment</td>
<td>YES</td>
<td>Abaza Tashlhit</td>
</tr>
<tr>
<td>Ā-exponence</td>
<td>NO</td>
<td>Fiorentino Lubukusu Spanish</td>
</tr>
</tbody>
</table>

Table 16: Typology of Ā-exponence and impoverishment

Table 16 obscures the important point that in languages like Abaza, there may be instances Ā-sensitive agreement morphology that exhibit Ā-exponence and some that do not.

This supports the conclusion that these properties are independent dimensions of variation.

The typology in table 16 falls out naturally if Ā-sensitivity is simply a property of φ-probes in general, and is not subject to crosslinguistic variation.

The Ā-Sensitivity Uniformity Hypothesis

All φ-probes are Ā-sensitive – they interact with Ā-features on their goal(s). There is no crosslinguistic variation in this property.

Variation arises from how a given language’s morphology manipulates and realizes feature bundles that include [φ] and [Ā].

Languages vary as to whether impoverishment applies in the context of Ā-features, and when it does, how many features are impoverished.

Languages vary as to whether there are vocabulary items that spell out the Ā-features that are copied to φ-probes when it interacts with a Ā-marked DP.

These types of variation are independently needed in the model of morphology employed here (DM).

---

¹¹In addition, the verb in (40b) takes the focus suffix -ǝn, which is limited to subject focus clauses (John Merrill, p.c.).
Appendix A: Asymmetries in $\phi$-feature impoverishment

- When one looks closely at the patterns of $\phi$-feature syncretism in the context of Ā-features attested crosslinguistically, the number of possible patterns turns out to be very small.
- The attested patterns of leveling in a survey of 63 languages are summarized in table 17 (Baier 2018).

<table>
<thead>
<tr>
<th>Non-Ā-Context</th>
<th>Ā-Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person</td>
<td>Gender</td>
</tr>
<tr>
<td>Type 1</td>
<td>✓</td>
</tr>
<tr>
<td>Type 2</td>
<td>✓</td>
</tr>
<tr>
<td>Type 3</td>
<td>✓</td>
</tr>
</tbody>
</table>

Table 17: Patterns of syncretisms in the context of Ā-features

- **Type 1 impoverishment** → all normal agreement features are neutralized
- **Type 2 impoverishment** → all normal agreement features other than number are neutralized
- **Type 2 impoverishment** → only person agreement is neutralized, while gender and number agreement remain indexed

The generalization that emerges from table 17 is that $\phi$-contrast neutralization under Ā-sensitive agreement is constrained by an implicational hierarchy, given in (43).

(43) Feature Impoverishment Hierarchy (FIH)

- The FIH requires that an rule that deletes feature category [X] also delete all features belonging to categories to the left of [X] on the scale. In other words, if a rule deletes [gender], that rule must also delete [person].
- See Baier (2018) for a proposal regarding the structure of $\phi$-features that derives (43).

Appendix B: Distribution of Ā-sensitive phi-agreement

- In the current theory, this reduces to the types of contextual restrictions that impoverishment rules have in any given language.
  - An impoverishment rule whose contextual restriction contains [Agr] should apply to all instances of agreement.
  - An impoverishment rule that has a contextual restriction referring to a specific categorial feature such as [T] should only apply to heads with that feature, and no others.
- Consider the abstract scenarios in (44) on the next page. All three involve the same basic structure: a clause that includes two $\phi$-probes, each hosted on a head of a distinct category, and each of which targets a distinct DP in the structure.

(44) Possibilities for Ā-sensitive agreement with two probe-goal pairs

  a. **Scenario 1**: Neither DP has [Ā]. X and Y copy [φ]

  b. **Scenario 2**: DP₁ has [Ā]. X copies [φ, Ā]

  c. **Scenario 3**: DP₂ has [Ā]. Y copies [φ, Ā]

- Example (44) exhausts the possibilities of cases where zero or one of the DPs targeted for agreement have an Ā-feature, in a clause that includes two $\phi$-probes and two DPs. ¹²

¹²This sets aside the possibility of derivations in which multiple DPs host Ā-features. In (44), the relations between probes and goals each in their own right are key, and not the relationships between the two dependencies. That is, I take these diagrams to represent cases where the two dependencies occupy separate portions of structure, as depicted here, as well as cases where they nest, as will be seen below.
In all three scenarios, the φ-probe on X agrees with DP₁ and the φ-probe on Y agrees with DP₂.

- **Scenario 1**, (44a) → neither DP has [Â]. Control scenario.
- **Scenario 2**, (44b) → DP₁ has an Ā-feature. Probe on X copies back both [φ+Â].
- **Scenario 3**, (44c) → DP₂ has an Ā-feature. Probe on Y copies back both [φ+Â].

**Question** ⇒ Which of these scenarios display an Ā-sensitivity effect?

- If both scenario 2 and 3 display such an effect, then the simplest analysis is to posit an impoverishment rule that targets heads bearing [Agr].
- If only scenario 2 displays an effect, then the impoverishment rule targets heads of category [X].
- If only scenario 3 exhibits an effect, then the relevant impoverishment rule targets heads of category [Y].

These outcomes and the needed impoverishment rules are summarized in table 18.

### Table 18: Possible outcomes for scenarios 2 and 3 in (44)

<table>
<thead>
<tr>
<th>Ā-sensitivity effect</th>
<th>Impoverishment rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario 2 (X)</td>
<td>Scenario 3 (Y)</td>
</tr>
<tr>
<td>Outcome 1</td>
<td>✓ ✓</td>
</tr>
<tr>
<td></td>
<td>[φ] → Ø / [__, Ā, Agr]</td>
</tr>
<tr>
<td>Outcome 2</td>
<td>✓ x</td>
</tr>
<tr>
<td></td>
<td>[φ] → Ø / [__, Ā, X]</td>
</tr>
<tr>
<td>Outcome 3</td>
<td>x ✓</td>
</tr>
<tr>
<td></td>
<td>[φ] → Ø / [__, Ā, Y]</td>
</tr>
</tbody>
</table>

Table 18: Possible outcomes for scenarios 2 and 3 in (44)

- The prediction above is confirmed by the All φ-probes generalization, shown in (45).

(45) All φ-probes generalization
Crosslinguistically, any XP that triggers φ-agreement is in principle capable of triggering an Ā-sensitive agreement effect on any φ-probe that it interacts with.

To show that this is the case, I approach this question from the perspective of agreement alignment (ergative-absolutive and nominative-accusative).

In terms of the abstract configurations in <multi-scenarios>, alignment emerges from the way that probes X and Y patterns with regards to the arguments of transitive and intransitive clauses

- **Nominaive-Accusative**: X agrees with transitive/intransitive subjects; Y agrees with transitive objects (or vice versa).

- **Ergative-Absolutive**: X agrees with intransitive subjects and transitive objects; Y agrees with transitive subjects (or vice versa).

This approach to agreement alignment is summarized table 19

<table>
<thead>
<tr>
<th>Argument</th>
<th>A</th>
<th>S</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominative-accusative</td>
<td>X</td>
<td>X</td>
<td>Y</td>
</tr>
<tr>
<td>Ergative-absolutive</td>
<td>X</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Table 19: Alignment with two probes

- There are three possible distributions of anti-agreement for each alignment type, as shown in table 20.

<table>
<thead>
<tr>
<th>Target probe(s)</th>
<th>Anti-agreement?</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>X+Y</td>
<td>✓ ✓ ✓</td>
<td>Zulu (Doke 1997)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Palauan (Georgopoulos 1991)</td>
</tr>
<tr>
<td></td>
<td>✓ ✓</td>
<td>Ndebele (A. Pietraszko, p.c.)</td>
</tr>
<tr>
<td>X</td>
<td>✓ X</td>
<td>Abaza (O’Herin 2002)</td>
</tr>
<tr>
<td></td>
<td>✓</td>
<td>Semelai (Kruspe 2004)</td>
</tr>
<tr>
<td></td>
<td>✓ ✓</td>
<td>Selayarese (Finer 1997)</td>
</tr>
</tbody>
</table>

Table 20: Possible distributions of anti-agreement

- ✓ indicates the argument in question does trigger an Ā-sensitive agreement effect when it has an Ā-feature
- X indicates the argument in question does not trigger an Ā-sensitive agreement effect, even when it has an Ā-feature.

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