

The Locus of Variation in \bar{A} -Sensitive Agreement

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1 Introduction

- In many languages, clausal morphology is sensitive to the features typically associated with \bar{A} -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 **\bar{A} -sensitive φ -agreement (effects)**, defined descriptively as in (1).

(1) *\bar{A} -sensitive φ -agreement effects*

An instance of φ -agreement X exhibits an **\bar{A} -sensitivity effect** if

- X takes the form α for a particular set of φ -features φ_1 on nominal N when N does not have an \bar{A} -feature and
 - X takes the form β for φ_1 on N when N does have an \bar{A} -feature, where $\alpha \neq \beta$.
- 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)*

wəy a-xac’a də-**{z/ *l_j}**-bàz **a-jyab_j**
 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)*

taqci_t-nni i { **i-wala-n** / ***t-wala** } Mohand
 woman-DEM C { 3SG.M-see-PTCP / 3SG.F-see } Mohand
 ‘the girl who saw Mohand’

¹Abbreviations used in this handout: 1 = first person, 2 = second person, 3 = third person, AA = anti-agreement (form), ABS = absolutive, 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, SBJ = 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.

- 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 \bar{A} -arguments (z-)
 - ▷ **Kabyle** → The verb takes default agreement (i- 3SG.M) and an additional ‘participle’ suffix (-n)

The Puzzle

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

(5) [... DP<sub>[φ , \bar{A}] ... AGR-H ...]
 └──────────┘</sub>

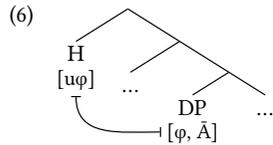
- The dominant line of thought in the previous literature has been to treat default morphology in the \bar{A} -context and specialized morphology in the \bar{A} -context as **distinct**.
 - ▷ Default morphology → generally referred to as **anti-agreement** since Ouhalla (1993);
 - Treated as lack of agreement. Syntactic constraints on \bar{A} -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 \bar{A} -related features (Chung and Georgopoulos 1988; Georgopoulos 1991; Chung 1998; Watanabe 1996; O’Herin 2002; Caponigro and Polinsky 2015)
- On this view, \bar{A} -sensitive φ -agreement effects do not constitute a single theoretical class

Evidence from variation

- Today, I focus on the range of variation in the morphology that languages employ in the \bar{A} -context, what this morphological variation tells us about \bar{A} -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 \bar{A} -feature, the resulting feature bundle on the probe includes both φ -features and an \bar{A} -feature.



- **MORPHOLOGY**
When \bar{A} -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 , \bar{A}]

(8) *Impoverishment*
[φ] $\rightarrow \emptyset$ / [$_$, H, \bar{A}]

- 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 \bar{A} -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 \bar{A} -context = **\bar{A} -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 \bar{A} -exponence, as shown in table 1.
- The analysis argued for here derives this variation through a uniform syntax for agreement in the non- \bar{A} - and \bar{A} -contexts. Variation is located in the morphology

	① φ -impoverishment			
	TOTAL	PARTIAL	NONE	
② \bar{A} -exponence	YES	Abaza	Tashlhit	Kobiana
	NO	Fiorentino	Lubukusu	Spanish

Table 1: Typology of \bar{A} -exponence and impoverishment

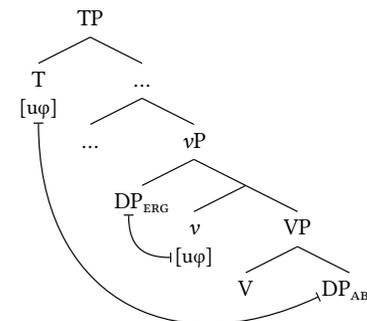
2 Deriving \bar{A} -sensitive φ -agreement effects

- In section 2.1, I motivate the morphological analysis of \bar{A} -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*



- ▷ The lower φ -probe on v agrees with the external argument in Spec- vP .³
- ▷ The higher φ -probe on T agrees with the next highest DP inside vP .
- ▷ Because ergative agreement is not present in intransitive clauses, I assume that only transitive v hosts a φ -probe.

³See Coon (2017) for arguments that ergative agreement is low, derived by Spec-Head agreement with v .

- I assume that heads bearing φ -probes bear a feature that marks them as agreement heads. I will call this feature [Agr].⁴

▷ So, the heads T and v will have (at least) the features in (10) after Agree:

(10) *Features on T and v after Agree*

- [T, φ , Agr]
- [v, φ , Agr]

- Each agreement paradigm in Abaza includes a morpheme that indexes \bar{A} -arguments: *y-* for absolutives, (11) and *z-* for ergatives, (12).

(11) *Absolutive wh-agreement: y-*

- a-č^wwal **dzac^wəya_i** yə_i-ta-wa
DEF-sack what ABS.WH-in-PRS

‘What is in the sack?’

(O’Herin 2002:252)

- Izmir *pro* **dzac^wəya_i** yə_i-r-bak^waz
Izmir 3PL who ABS.WH-3PL-see.PL.PST

‘Who did they see in Izmir?’

(O’Herin 2002:252)

(12) *Ergative wh-agreement: z-*

- dəzda_i** s-axč^la zə_i-γəč^j
who 1SG-money ERG.WH-steal

‘Who stole my money?’

(O’Herin 2002:252)

- a-fač^ləγ^w a-fin^jan a-pnə **dəzda_i** y-na-z_i-ax^w
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)

- I argue that *wh*-agreement in Abaza is the result of an Agr head agreeing with a DP bearing an \bar{A} -movement related feature, [\bar{A}].

⁴I 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).

	1	2F	2M	3F	3M	3INAN	\bar{A}
SG	s-	b-	w-	l-	y-	a-	z-
PL	h-	f ^w -	f ^w -	r-	r-	r-	z-

Table 2: Abaza ergative agreement (O’Herin 2002:55)

	1	2F	2M	3F	3M	3INAN	\bar{A}
SG	s-	b-	w-	d-	d-	y-	y-
PL	h-	f ^w -	f ^w -	y-	y-	y-	y-

Table 3: Abaza absolutive agreement (O’Herin 2002:63)

- 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 \bar{A} -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 [\bar{A}]

- Taking (13) seriously, I assume that there are basically three types of agreement vocabulary items (VIs) in Abaza, shown in table 4:

VI type	Features spelled out	Distribution
Full agreement	[φ , Agr]	Abs/Erg
	[φ , Agr, T]	Abs
	[φ , Agr, v]	Erg
Proper <i>Wh</i> -agreement (<i>z-</i>)	[\bar{A} , Agr, v]	Erg
Elsewhere (<i>y-</i>)	[Agr]	Abs

Table 4: Types of Abaza agreement VIs

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

▷ The prefix *z-* spells out [\bar{A}], [Agr], and [v].

(14) $z- \leftrightarrow [\bar{A}, \text{Agr}, v]$

▷ The prefix *y-* spells out just [Agr].

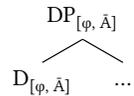
(15) *Abaza default agreement*
y- ↔ [Agr]

* I argue that a feature bundle including an \bar{A} -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. XPs that undergo \bar{A} -movement bear some kind of \bar{A} -feature. I assume that \bar{A} -features on DPs are merged on D and both \bar{A} -features and φ -features percolate to the DP level.

(16) *DP bearing both \bar{A} - and φ -features*



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, $G \subseteq F$.

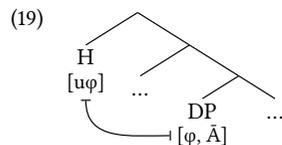
- a. **Interaction:** Probe H interacts with feature [F] by copying [F] to H.
- b. **Satisfaction:** Probe H is satisfied by feature G if copying G to H makes H stop probing. (adapted from Deal 2016:3)

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 \bar{A} -features (\bar{A}) belong to a larger set of features, \mathcal{F} .

- (18) a. $\mathcal{F} = \{\Phi, \bar{A}\}$
- b. There is no variation in interaction conditions – φ -probes and \bar{A} -probes both have the same interaction conditions: \mathcal{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 [\bar{A}].



▷ [$u\varphi$] on H searches in its c-command domain for features and finds the DP bearing [φ] and [\bar{A}].

▷ The probe interacts with both of these features, and therefore copies back both sets of features to H.

• Therefore, a head with [$u\varphi$] that Agrees with a DP with [\bar{A}] in Abaza will always have (at least) the features in (20).

(20) *Form of an Abaza head hosting a φ -probe after Agree with operator*

$$[\varphi, \bar{A}, \text{AGR}, \left\{ \begin{matrix} v \\ T \end{matrix} \right\}]$$

• 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 \bar{A} -contexts where this indeed occurs.

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

(21) *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-*.

The Solution

• I propose that *z-* and *y-* can be inserted in the first place because of the postsyntactic operation **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) *Abaza φ -feature impoverishment*

$$[\varphi] \rightarrow \emptyset / [_ , \bar{A}, \text{Agr}]$$

• 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.

- This analysis centers the mechanism that derives \bar{A} -sensitive agreement primarily **in the morphology**.
 - ▷ The same sequence of operations underlies φ -agreement in the \bar{A} -context and in the non- \bar{A} -context
 - Agree in the syntax
 - Vocabulary insertion in the morphology
 - ▷ Copying of an \bar{A} -feature to a head with a φ -probe in the syntax has morphological consequences, here impoverishment of all φ -features on the probe.

Core Intuition

There is a deep connection between underspecification, impoverishment, and the morphology that appears in the context of \bar{A} -movement.

- In terms of the dimensions of variation mentioned in the introduction, Abaza has ...
 - ▷ Total impoverishment, as no φ -features are expressed in the \bar{A} -context
 - ▷ \bar{A} -exponence with ergative agreement
 - ▷ No \bar{A} -exponence with absolutive agreement

	① φ -impoverishment		
	TOTAL	PARTIAL	NONE
② \bar{A} -exponence	YES	Abaza	
	NO	Abaza	

Table 5: Typology of \bar{A} -exponence and impoverishment

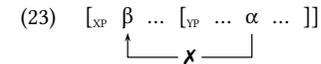
- The fact that Abaza instantiates both this options is significant, in that it shows that lack of φ -agreement is not in complementary distribution with \bar{A} -exponing morphology *in the same language*.

2.2 Syntactic alternatives

- As mentioned above, the dominant line of thought in previous literature has been to treat default morphology in the \bar{A} -context (“anti-agreement”) as **different from** specialized \bar{A} -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 \bar{A} -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 (23), where α is a position normally targeted for φ -agreement, and β is the landing site of \bar{A} -movement.



- 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. \bar{A} -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)⁵

- ▷ Phrasal movement must not be too short/local. Canonical φ -agreement brings a DP into a position from which \bar{A} -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 \bar{A} -movement.

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

- The unified, morphological theory of \bar{A} -sensitive φ -agreement developed in the previous section handles these data in a straightforward way.

⁵See Baier (2017) for further arguments against an anti-locality based approach to anti-agreement not discussed in this talk.

3 Variation in φ -feature neutralization

- Languages differ as to how many φ -feature contrasts are neutralized in the presence of \bar{A} -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 (24) with the Tashlhit (Berber, Morocco) data in (25). In Tashlhit, *number agreement is retained* under subject extraction, while *person and gender agreement are suppressed*.

(24) *Kabyle*⁶ (Berber, Algeria)

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

(25) **irgazn_i** nna ffegh-n-*(**in**) —i
 man.PL C_{REL} left-PFV-{PTCP-*(PL)}

‘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.

	SG	PL
1	V- n	n-V
2M	t-V-t	t-V-m
2F	t-V-t	t-V-mt
3M	i-V	V-n
3F	t-V	V-nt

Table 6: Kabyle φ -agreement

	SG	PL
1	V- y	n-V
2M	t-V-t	t-V-m
2F	t-V-t	t-V-mt
3M	i-V	V-n
3F	t-V	V-nt

Table 8: Tashlhit φ -agreement (Applegate 1958:27)

	SG	PL
1	i-V-n	i-V-n
2M	i-V-n	i-V-n
2F	i-V-n	i-V-n
3M	i-V-n	i-V-n
3F	i-V-n	i-V-n

Table 7: Kabyle participle

	SG	PL
1	i-V-n	V- n-in
2M	i-V-n	V- n-in
2F	i-V-n	V- n-in
3M	i-V-n	V- n-in
3F	i-V-n	V- n-in

Table 9: Tashlhit AA (Applegate 1958:27)

- 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 φ -agreement neutralization under \bar{A} -extraction.
- In terms of the current theory, the difference between total and partial neutralization rests in the impoverishment rules active in a given language.
 - Total neutralization** → total φ -impoverishment in the context of [\bar{A}]
 - Partial neutralization** → partial φ -impoverishment in the context of [\bar{A}]
- For Kabyle, the relevant total impoverishment rule is given in (26):

(26) *Kabyle partial φ -impoverishment*
 $[\varphi] \rightarrow \emptyset / [_ , \bar{A}, \text{Agr}]$
- For Tashlhit, the relevant partial impoverishment rule is given in (27):

(27) *Tashlhit partial φ -impoverishment*
 $[\text{PERSON}, \text{GENDER}] \rightarrow \emptyset / [_ , \bar{A}, \text{Agr}]$
- Aside:** In both languages, I treat the participle suffix as the spell out of the \bar{A} -feature that remains after impoverishment

(28) *Kabyle/Tashlhit \bar{A} -exponence*
 $-n \leftrightarrow [\bar{A}] / [_ , \text{Agr}]$

 - ‘Participle’ is a misnomer → the suffix is only found in the context of subject \bar{A} -extraction, and verb forms bearing the suffix show no nominal properties.⁷
- For syntactic accounts of anti-agreement, partial neutralization → partial syntactic agreement
- How would a syntactic account of anti-agreement handle the Tashlhit effect? Recall the logic of these accounts:

(29) $[_{XP} \beta \dots [_{VP} \dots \alpha \dots]]$

α is a position normally targeted for φ -agreement, β is the landing site of \bar{A} -movement

⁷See Drouin (1996) and Kossmann (2003, 2012) for comparative discussion of participles in Berber. See Baier (2018) for further discussion of this analysis of *-n*.

- For Tashlhit, a syntactic account could posit that:
 - ▷ [PERSON]/[GENDER] agreement are only accessible to the relevant φ -probe(s) when the DP occupies α ,
 - ▷ while [NUMBER] agreement is accessible to the relevant φ -probe(s) even if the DP does not occupy α
- Other patterns of partial neutralization are not as simple as the Tashlhit example, however.
- **Ghadamès** (Berber, Libya) has three participle forms – masculine singular, feminine singular, and plural. Compare these to the full agreement forms.

	SG	PL
1M	V-ǎŋ	n-V-ǎt
1F	V-ǎŋ	n-V-mǎt
2M	t-V-ət	t-V-ǎm
2F	t-V-ət	t-V-mǎt
3M	i-V	V-ǎn
3F	t-V	V-nǎt

Table 11: Ghadamès participle forms (Kossmann 2013:95)

	SG	PL
M	i-V-ǎn	V-n-in
F	t-V-ǎt	V-n-in

Table 10: Ghadamès φ -agreement (Kossmann 2013:91)

- ▷ The participle never expresses agreement for [PERSON]
- ▷ When the extracted subject is **plural**, the verb has only one possible form \rightarrow **V-n-in**
- ▷ When the extracted subject is **singular**, the verb has two possible forms \rightarrow **i-V-ǎn** (masculine) or **t-V-ǎt** (feminine)
- The current account captures this pattern with impoverishment rules that are conditioned not only by the presence of an \bar{A} -feature, *but also by the presence of specific φ -features*.

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

- [PERSON] $\rightarrow \emptyset / [-, \bar{A}, \text{Agr}]$
- [GENDER] $\rightarrow \emptyset / [-, +\text{PL}, \bar{A}, \text{Agr}]$

- **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.

	SG	PL
1	V-ÿ	V-:-ÿ
2	V-ÿw	V-:-ÿw
3	V	V-(y)è

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

	SG	PL
1	V	V
2	V	V
3	V	V-(y)è

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.⁸

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

- [PERSON] $\rightarrow \emptyset / [-, \bar{A}, \text{Agr}]$
- [NUMBER] $\rightarrow \emptyset / [-, +\text{PART}, \bar{A}, \text{Agr}]$

- In both Ghadamès and Ben Tey, it is the presence both of an \bar{A} -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:

$$(32) \quad [_{\text{XP}} \beta \dots [_{\text{YP}} \dots \alpha \dots]]$$

↑
*

α is a position normally targeted for φ -agreement, β is the landing site of \bar{A} -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.

⁸The impoverishment rules proposed for Ben Tey in (31) must be crucially ordered, with (31b) *preceding* (31a).

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

- I suggest that the morphological alternative is a much more straightforward way of explaining the Ben Tey and Ghadamès patterns.

- ▷ It is known that φ -features are capable of triggering impoverishment of other φ -features (Noyer 1992, 1997).
- ▷ Therefore, it should be possible for φ -features to condition such deletion in the context of \bar{A} -features.

4 The independence of impoverishment and \bar{A} -exponence

- We have now seen examples of morphological variation along two dimensions
 - ① How many φ -feature contrasts are impoverished in the \bar{A} -context?
 - ② Is there morphology that realizes the \bar{A} -feature copied by the φ -probe
- Whether a language has total or partial φ -impoverishment is independent of whether or not that language exhibits \bar{A} -exponence.
- Both Abaza and Kabyle have morphemes that realize this \bar{A} -feature, (33).

(33) *Abaza and Tarifit* → total impoverishment, \bar{A} -feature realized

a. *Abaza*

a-fač^ləŋ^w a-finj'an a-pnə dəzda y-na-z-ax^w
 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*

iqcicin-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 \bar{A} -feature responsible for impoverishment, (34).

(34) *Fiorentino* → total impoverishment, \bar{A} -feature not realized
 Quante ragazze **gli ha** parlato con te
 how.many girls 3SG have.3SG spoken with you
 'How many girls (it) has spoken to you?' (Brandi and Cordin 1989:124)

- All three languages, however, exhibit total φ -impoverishment.
- The Berber language Tashlhit displays partial impoverishment and a morpheme expressing the \bar{A} -feature left over after such impoverishment has taken place, as shown in (35).

(35) *Tashlhit* → partial impoverishment, \bar{A} -feature realized
 irgazen lli kerz-**n-in** igran
 men C_{REL} 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 \bar{A} -feature that is responsible for triggering the impoverishment rule, (36).

(36) *Lubukusu* → partial impoverishment, \bar{A} -feature not realized

- a. Nise o-{**w/*n**}-onak-e kumulyango kuno
 1sg CL1.C-{CL1.AA/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), (36) 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 φ -features in the context of \bar{A} -features.

- ▷ An example of one such language is Mexican Spanish, where full subject-verb φ -agreement is present on the verb in the relative clause part of a subject cleft.

(37) *Mexican Spanish subject cleft* → full φ -agreement, no \bar{A} -exponence⁹

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 φ -impoverishment rule in the context of \bar{A} -features

- A clear prediction of the theory of \bar{A} -sensitive agreement developed in this talk is the following

(38) There should be languages that exhibit \bar{A} -exponence while lacking φ -impoverishment in the context of \bar{A} -features.

- There is at least one such language \rightarrow Kobiaana (Atlantic, Guinea-Bissau).
- Verbs in Kobiaana 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.

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

a. *No subject focus*

á-ndékk-i
2SG-walk-PFV
'You walked.'

b. *Subject focus*

áyì ée-ndékk-ən-i
2SG 2SG.FOC-walk-FOC-PFV
'It's you who walked.'

\triangleright In (39a), the 2SG subject is not focused and the verb bears the subject agreement prefix *á-*.

\triangleright In (39b), the 2SG subject is focused and the subject agreement prefix is changed to *ée-*.¹⁰

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

	SG	PL
1	má-	ngée-
2	á-	káa-
3	à-	nàà-

Table 14: Kobiaana φ -agreement

	SG	PL
1	mé-	ngéena-
2	ée-	káana-
3	áma-	nááná-

Table 15: Kobiaana subject focus 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 Kobiaana subject focus φ -agreement paradigm is not transparently segmentable.
- In the current theory, I argue that this means Kobiaana has two distinct sets of φ -agreement VI, shown in (40a)

(40) *Kobiaana agreement VIs*

a. má-, á-, à-, ngée-, káa-, náà- \leftrightarrow [φ , Agr]

b. méé-, ée-, áma-, ngéena-, káana-, nááná- \leftrightarrow [φ , \bar{A} , Agr]

⁹Judgement from a native speaker of Mexican Spanish from Oaxaca.

¹⁰In addition, the verb in (39b) takes the focus suffix *-ən*, which is limited to subject focus clauses (John Merrill, p.c.).

- \triangleright The first realizes just a set of φ -features, and is shown in (40a).
- \triangleright The second set realizes a set of φ -features and an \bar{A} -feature, as shown in (40b), and will block insertion of the first set of VIs whenever the subject bears an \bar{A} -feature.
- If my analysis of Kobiaana is on the right track, then we can fill in completely a two by three way typology of the interaction between φ -impoverishment and \bar{A} -exponence.

	① φ -impoverishment			
	TOTAL	PARTIAL	NONE	
② \bar{A} -exponence	YES	Abaza	Tashlhit	Kobiaana
	NO	Fiorentino	Lubukusu	Spanish

Table 16: Typology of \bar{A} -exponence and impoverishment

- In fact, table 16 obscures the important point that in languages like Abaza, there may be instances \bar{A} -sensitive agreement morphology that exhibit \bar{A} -exponence and some that do not.
 - \triangleright This supports the conclusion that these properties are independent dimensions of variation
- The typology in table 16 falls out naturally if \bar{A} -sensitivity is simply a property of φ -probes in general, and is not subject to crosslinguistic variation.

(41) *The \bar{A} -Sensitivity Uniformity Hypothesis*

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

- Whenever a φ -probe agrees with a goal bearing both [φ] and [\bar{A}], both feature sets are copied back.
- Variation resides in how a language responds morphologically to this process, and involves variation in both the presence of certain morphological rules and in the presence of certain types of vocabulary items
 - ① Languages vary as to whether impoverishment applies in the context of \bar{A} -features, and when it does, how many features are impoverished
 - ② Languages vary as to whether there are vocabulary items that spell out the \bar{A} -features that are copied to φ -probes when it interacts with a \bar{A} -marked DP.
- These types of variation are independently needed in the model of morphology employed here (DM).

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5 Appendix: Asymmetries in φ -feature impoverishment

- When one looks closely at the patterns of φ -feature syncretism in the context of \bar{A} -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 (Baier 2018) are summarized in table 17.

	Normal Agreement			Anti-Agreement		
	Person	Gender	Number	Person	Gender	Number
Type 1	✓	(✓)	✓			
Type 2	✓	(✓)	✓			✓
Type 3	✓	✓	✓		✓	✓

Table 17: Patterns of impoverishment

- ▷ **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 φ -contrast neutralization under \bar{A} -sensitive agreement is constrained by an implicational hierarchy, given in (42).

(42) *Feature Impoverishment Hierarchy (FIH)*

PERSON \ll GENDER \ll NUMBER

- Given the theory of anti-agreement as φ -impoverishment triggered by \bar{A} -features, the Feature Impoverishment Hierarchy (FIH) dictates that an impoverishment rule that deletes feature X must also delete all features to the left of X.
- See (Baier 2018) for a proposal regarding the structure of φ -features that derives (42)