# A Morphological Theory of Anti-Agreement Nico Baier (nbbaier@berkeley.edu)

91st Annual LSA Meeting, Austin, TX – January 7th, 2017

## Anti-agreement Anti-agreement (AA) $\varphi$ -agreement with an argument is disrupted when that extracted (Ouhalla 1993). Berber anti-agreement (1) man tamghart<sub>i</sub> ay yzrin/\*t<sub>i</sub>-zra which woman C see.PART/3SG.F-see 'Which woman saw Mohand?' • Traditional view AA is a lack of agreement that results from syntactic constr tion (Diercks 2010; Erlewine 2016; Richards 1997; Schneide • Core idea AA is a form of *wh*-agreement – dedicated agreement n indexes extracted arguments (Chung and Georgopoulos 1 Proposal • AA is the result of a $\varphi$ -probe copying both [ $\varphi$ ] and [w] (2) $[... H_{[u\phi]} [... D_{P_{[\phi, wh]}}...]$ $\Box \phi + WH =$ • **Impoverishment** applies to the $[\phi+WH]$ bundle in the mo (3) $[\phi] \rightarrow O / [\_, WH]$ • Insertion of a more highly specified agreement exponent • **Ā-sensitive Agreement** 'Anti-agreement' and '*wh*-agreement' same underlying ph $\triangleright$ Anti-agreement $\rightarrow$ default agreement or zero form oc $\triangleright$ *Wh*-agreement $\rightarrow$ form realizing [WH] occurs. Data: Wh-agreement in Abaza (NW C Verbs exhibit multi-argument agreement, ergative-absolut (4) **pro**<sub>i</sub> **pro**<sub>k</sub> $\int^{w} \mathbf{a}_{k} - \mathbf{l}_{i}$ -bat' **3SG.F 2PL 2PL-3SG.F**-see 'She saw you(PL)' • Wh-words and relative operators (not pictured) **control d** of agreement. Absolutive wh-agreement: $y(\partial)$ -(5) Izmir pro dzač'<sup>w</sup>əya<sub>i</sub> yə<sub>i</sub>-r-bak<sup>w</sup>az ABS.WH-3PL-see.PL.PST Izmir 3pl who 'Who did they see in Izmir?' (6) Ergative wh-agreement: $z(\partial)$ afač<sup>j</sup> $\partial \gamma^w$ **d** $\partial z$ **d** $a_i$ y-na- $z_i$ -ax<sup>w</sup> who 3sg.I-pfv-**Erg.w**H-take sugar

**(O)** 'Who took the sugar?' • Prefixes y(a)- and z(a)- occupy same 'slot' as other agreem

• O'Herin 2002: Both $y(p)$ - and $z(p)$ - spell out $[WH]$ • Observation: wh-agreement prefixes differ in a crucial way. • $y(p)$ - is a morphological default $\rightarrow$ 'anti-agreement' • $z(p)$ - is a morphology. • Step 1, Syntax: $q$ -probe on Agr copies back $[q]$ and $[WH]$ (9) $[\dots \Delta gr[m_p]$ $[\dots DP[_{p_1, wh]} \dots$ $[\dots P_{p_1, wh]} \dots$ $= g^{-p_1 \dots}$ • Step 2, Morphology: Impoverishment deletes $[q]$ from $[q+WH]$ bundle. (10) $[q] \rightarrow 0$ / $[Agr, wn]$ • Step 3, Morphology: Vocabulary Insertion (VI) (11) a. $X$ Full agreement: $[Agr. q, wn] \leftrightarrow /z^{-}$ deligible b. $e'$ Wh-agreement: $[Agr. q, wn] \leftrightarrow /z^{-}$ deligible b. $e'$ Wh-agreement: $[Agr. q, wn] \leftrightarrow /z^{-}$ deligible b. $e'$ Wh-agreement: $[Agr. q, wn] \leftrightarrow /z^{-}$ deligible (2) Subject extraction requires that the verb be in the 'participle' form (anti- agreement). Full person/gender/number agreement is impossible. (2) Subject extraction requires that the verb be in the 'participle' form (anti- agreement). Full person/gender/number agreement. (3) Object extraction: participle form (AA) may ag $b_q$ -swa $\Pi_{2}$		Analysis: Abaza	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	l when that argument is Ā-	<ul> <li>O'Herin 2002: Both <i>y(∂)</i>- and <i>z(∂)</i>- spell out [WH]</li> <li>Observation: <i>wh</i>-agreement prefixes differ in a crucial way.</li> <li><i>y(∂)</i>- is a morphological default → 'anti-agreement'</li> <li><i>z(∂)</i>- spells out [WH] → 'wh-agreement'</li> </ul>	
so $s + b + w + d + d + y + y + b + w + w$	i Mohand Mohand (Ouhalla 1993:479)	(7)Absolutive agreement(8)Ergative agreement12F2M3F3M3IWH12F2M3F3M3IWH	
<ul> <li>Step I, Syntax: φ-probe on Agr copies back [φ] and [WII]</li> <li>Step I, Syntax: φ-probe on Agr copies back [φ] and [WII]</li> <li>(9) [Agr[ων] [DP[σ, wh]] φ-wH</li></ul>	ntactic constraints on extrac- 997; Schneider-Zioga 2007).	SG S- b- w- d- d- y- y- PL h- $\int^{w} - \int^{w} - y - y - y - y - y - y - y - y - y - $	
<ul> <li>Step 2, Morphology: Impoverishment deletes [\$\u03c6] from [\$\u03c6\$+WII] bundle.</li> <li>[\$\u03c6] and [\$\wfile WH] from a goal.</li> <li>[\$\u03c6] and [\$\u03c6] wH] is \$\u03c6 V P-1\$ and \$\u03c6 WH] in \$\u03c6 V P-1\$ and \$\u03c6 WH] is \$\u03c6 V P-1\$ and \$\u03c6 WH] is \$\u03c6 V P-1\$ and \$\u03c6 WH] in \$\u03c6 V P-1\$ and \$\u03c6 V P-1\$ and</li></ul>	agreement morphology that orgopoulos 1988).	<ul> <li>Step 1, Syntax: φ-probe on Agr copies back [φ] and [WH]</li> <li>(9) [ Agr<sub>[uφ]</sub> [ DP<sub>[φ, wh]</sub> ]</li> <li>φ+WH</li> </ul>	
(11) a. × Full agreement: $[Agr, \varphi val] \leftrightarrow /s-/, /b-/, incligible b. × Wh-agreement: [Agr, \psi wl] \leftrightarrow /z-/ cligiblec. × Default: [Agr] \leftrightarrow /y-/ eligiblec. × Default: [Agr] \leftrightarrow /y-/ eligibleExtension to Anti-Agreement: Berber• Subject extraction requires that the verb be in the 'participle' form (anti-agreement). Full person/gender/number agreement is impossible.(12) Subject extraction: participle form (AA)man tanghart/ ay yzrin/*tc-zra/ Mohandwhich woman C see_PART/3SG.F-see Mohand'Which woman saw Mohand?' (Ouhalla 1993:479)• Non-subject extraction does not trigger anti-agreement.(13) Object extraction full agreement (no AA)mai ag ik-swa flikiwhat C 3sc.M-drink Ali'What di Ali drink?' (Ouali 2011:99)• The participle is composed of a prefix i- and suffix -n.> i- \rightarrow default agreement (36G.MASC, cf. (13)).> -n \rightarrow only occurs in participles and only in certain aspects.• Analysis: The same impoverishment rule applies in Berber and Abaza.(14)  \varphi  \rightarrow 0 / [Agr,, wn]> Lack of \varphi-features gives rise to default agreement, i-, in Berber.> The suffix -n is the spell out of [WH] in the context of certain Asp''.• Upshot: In both Abaza and Berber, there is full agreement in the syn-tax, obscured by impoverishment in the morphology.$	[φ] and [wH] from a goal.	<ul> <li>Step 2, Morphology: Impoverishment deletes [φ] from [φ+wH] bundle.</li> <li>(10) [φ] → Ø / [Agr,, wH]</li> <li>Step 3, Morphology: Vocabulary Insertion (VI)</li> </ul>	
the exponent is blocked.Extension to Anti-Agreement: Berberinderlying phenomenon.Subject extraction requires that the verb be in the 'participle' form (anti-agreement). Full person/gender/number agreement is impossible.(12) Subject extraction: participle form (AA) man tamghart; ay yzrin/*l;-zra	dle in the morphology.	(11) a. <b>×</b> Full agreement: $[Agr, \phi:val] \leftrightarrow /s-/, /b-/,$ ineligibleb. <b>✓</b> Wh-agreement: $[Agr, WH] \leftrightarrow /z-/$ eligiblec. <b>✓</b> Default: $[Agr] \leftrightarrow /y-/$ eligible	
<ul> <li>Subject extraction requires that the verb be in the 'participle' form (antiagreement). Full person/gender/number agreement is impossible.</li> <li>Subject extraction: participle form (AA) <ul> <li>man_tanghart, ay yzrin/*t<sub>i</sub>-zrai Mohand</li> <li>which woman C sec.PART/3SG.F-see Mohand</li> <li>'Which woman saw Mohand?' (Ouhalla 1993:479)</li> </ul> </li> <li>Non-subject extraction does not trigger anti-agreement.</li> <li>O'Herin 2002:660</li> <li>O'Herin 2002:260</li> <li>The participle is composed of a prefix <i>i</i>- and suffix -<i>n</i>.</li> <li><i>i</i>- → default agreement (3sc.Masc, cf. (13)).</li> <li>-<i>n</i> → only occurs in participles and only in certain aspects.</li> <li>Analysis: The same impoverishment rule applies in Berber and Abaza.</li> <li>(14) [φ] → Ø / [Agr, _, wH]</li> <li>Lack of φ-features gives rise to default agreement, <i>i</i>-, in Berber.</li> <li>The suffix -<i>n</i> is the spell out of [WII] in the context of certain Asp<sup>6</sup>.</li> </ul>	nt exponent is blocked.	<b>Extension to Anti-Agreement: Berber</b>	
(NW Caucasian)ative-absolutive alignment.'Which woman saw Mohand?'(Ouhalla 1993:479)ative-absolutive alignment.(O'Herin 2002:66)Non-subject extraction does not trigger anti-agreement.(13)(O'Herin 2002:66)(O'Herin 2002:66)'What did Ali drink?'(Ouali 2011:99)(O'Herin 2002:66)'What did Ali drink?'(Ouali 2011:99)• I- $\rightarrow$ default agreement (3sc.MASc, cf. (13)).> $-n \rightarrow$ only occurs in participles and only in certain aspects.• Analysis: The same impoverishment rule applies in Berber and Abaza.(14) $[\phi] \rightarrow \emptyset / [Agr, \_, wH]$ > Lack of $\phi$ -features gives rise to default agreement, <i>i</i> -, in Berber.> The suffix $-n$ is the spell out of $[WH]$ in the context of certain Asp°.other agreement morphemes.	nderlying phenomenon. zero form occurs. curs.	<ul> <li>Subject extraction requires that the verb be in the 'participle' form (anti-agreement). Full person/gender/number agreement is impossible.</li> <li>(12) Subject extraction: participle form (AA)         <u>man tamghart</u>; ay yzrin/*t<sub>i</sub>-zrai Mohand         which woman Csee PAPT/3SG E-seeMohand</li> </ul>	
<ul> <li>ative-absolutive alignment.</li> <li>(O'Herin 2002:66)</li> <li>(O'Herin 2002:66)</li> <li>(O'Herin 2002:252)</li> <li>(O'Herin 200</li></ul>	(NW Caucasian)	'Which woman saw Mohand?' (Ouhalla 1993:479)	
<ul> <li>The participle is composed of a prenx <i>i</i>- and suffix <i>-n</i>.</li> <li><i>i</i>- → default agreement (3sg.MASC, cf. (13)).</li> <li><i>-n</i> → only occurs in participles and only in certain aspects.</li> <li>Analysis: The same impoverishment rule applies in Berber and Abaza.</li> <li>(14) [φ] → Ø / [Agr,, wH]</li> <li>Lack of φ-features gives rise to default agreement, <i>i</i>-, in Berber.</li> <li>The suffix <i>-n</i> is the spell out of [WH] in the context of certain Asp<sup>6</sup>.</li> <li>Upshot: In both Abaza and Berber, there is full agreement in the syntax, obscured by impoverishment in the morphology.</li> </ul>	ative-absolutive alignment. (O'Herin 2002:66) d) <b>control dedicated forms</b>	<ul> <li>Non-subject extraction does not trigger anti-agreement.</li> <li>(13) Object extraction: full agreement (no AA) ma<sub>i</sub> ag i<sub>k</sub>-swa <u>Slik</u>i what C 3sG.M-drink Ali 'What did Ali drink?' (Ouali 2011:99)</li> <li>The participle is composed of a profix i and suffix n</li> </ul>	
PL.PST (O'Herin 2002:252) (O'Herin 2002:252) (O'Herin 2002:252) other agreement morphemes. (O'Herin 2002:252) Upshot: In both Abaza and Berber, there is full agreement in the syntax, obscured by impoverishment in the morphology.		<ul> <li>The participle is composed of a prefix <i>i</i>- and suffix -<i>n</i>.</li> <li><i>i</i>- → default agreement (3sg.MASC, cf. (13)).</li> <li><i>-n</i> → only occurs in participles and only in certain aspects.</li> </ul>	
<ul> <li>b) Luck of \$\phi\$ reductives gives rise to default digreement, <i>r</i>, in berben.</li> <li>b) The suffix <i>-n</i> is the spell out of [WH] in the context of certain Asp<sup>0</sup>.</li> <li>c) Upshot: In both Abaza and Berber, there is full agreement in the syntax, obscured by impoverishment in the morphology.</li> </ul>	PL.PST (O'Herin 2002:252)	• Analysis: The same impoverishment rule applies in Berber and Abaza. (14) $[\phi] \rightarrow \emptyset / [Agr, \_, wH]$ $\triangleright$ Lack of $\phi$ -features gives rise to default agreement <i>i</i> - in Berber	
	e (O'Herin 2002:252) other agreement morphemes.	<ul> <li>▷ The suffix -n is the spell out of [WH] in the context of certain Asp<sup>0</sup>.</li> <li>● Upshot: In both Abaza and Berber, there is full agreement in the syntax, obscured by impoverishment in the morphology.</li> </ul>	

## **Technical Assumptions**

- Ā-syntax: Ā-moved XPs bear [wн].

## **Extraction Asymmetries**

## Variation in **Ā**-sensitive agreement triggers (15)

Agreement	Trigger(s)	Language
Nom + Acc	Nom	Palauan (Georgopoulos 1991)
Nom + Acc	Nom + Acc	Zulu (Doke 1927)
Nom + Acc	Acc	Ndebele (A. Pietraszko, p.c.)
Erg + Abs	Erg	Kaqchikel (Erlewine 2016)
Erg + Abs	Erg + Abs	Abaza (O'Herin 2002)
Erg + Abs	Abs	Selayarese (Finer 1997)

- (16)φ-probe β iff β has Agreed with α.
- Agrees with the relevant  $\varphi$ -probe.
- (17)\_\_\_\_\_ φ+WH \_\_\_\_\_
- **Object extraction:** probe finds  $[\phi]$ (18)
- $\triangleright$  Location and number of  $\varphi$ -probes in a clause.

## **Selected References**

Chung, Sandra, and Carol Georgopoulos. 1988. Agreement with gaps in Chamorro and Palauan. In Agreement in Natural Languages: Approaches, Theories, and Descriptions, ed. Michael Barlow and Charles A. Ferguson, 251-67. Cent. Study Lang. Inf. Diercks, Michael. 2010. Agreement with Subjects in Lubukusu. Doctoral Dissertation, Georgetown University. Doke, Clement M. 1927. Textbook of Zulu grammar. The University of the Witwatersrand Press. Erlewine, Michael Y. 2016. Anti-locality and optimality in Kaqchikel Agent Focus. *Natural Language and Linguistic Theory* 34:429–479. Finer, Daniel L. 1997. Contrasting A'-Dependencies in Selayarese. Natural Language and Linguistic Theory 15:677–728. Georgopoulos, Carol. 1991. Syntactic variables: Resumptive pronouns and a' binding in palauan. Springer. O'Herin, Brian. 2002. Case and Agreement in Abaza. SIL International. Ouali, Hamid. 2011. Agreement, Pronominal Clitics and Negation in Tamazight Berber. Bloomsbury Academic. Ouhalla, Jamal. 1993. Subject-extraction, negation and the anti-agreement effect. Natural Language and Linguistic Theory 11:477–518. Richards, Norvin. 1997. What moves where when in which language? Doctoral Dissertation, Massachusetts Institute of Technology. Schneider-Zioga, Patricia. 2007. Anti-agreement, anti-locality and minimality. *Natural Language and Linguistic Theory* 25:403–446.



• **Agreement**:  $\varphi$ -probes ([u $\varphi$ ]) copy back both [ $\varphi$ ] and [WH] from a goal.

• **Distributed Morphology**: late insertion; underspecification.

• Data like the Berber subject/object asymmetry has led anti-agreement to be classified as a syntactic extraction asymmetry.

▷ Assumed to be triggered by a subset of arguments.

• However, cross-linguistically, **there is no such asymmetry**. Crucial data comes from languages in which multiple arguments are cross-referenced.

• Given the configuration in (2), there is a crucial precondition on the possibility of a  $\varphi$ -probe exhibiting  $\overline{A}$ -sensitive agreement.

## **Precondition on A-sensitive agreement**

Extraction of an argument  $\alpha$  can trigger  $\overline{A}$ -sensitive agreement on a

• Berber object extraction doesn't trigger AA because the object never

## Subject extraction: probe finds [φ, wH]

 $\left[ \dots H_{\left[ u\phi \right]} \left[ \dots \left[ v_{P} D_{\phi, wh}^{P} V \left[ v_{P} V D_{\phi}^{P} \right] \right] \right] \right]$ 

 $\left[ \dots H_{\left[ u\phi \right]} \left[ \dots \left[ v_P D_{\left[ \phi \right]} v \left[ v_P V D_{\left[ \phi, WH \right]} \right] \right] \right] \right]$ 

## • Variation in the distribution of triggers reduces to:

 $\triangleright$  The  $\varphi$ -probes that  $\varphi$ -impoverishment applies to.