Hybrid A- and Ā-agreement as voice morphology: Insights from Austronesian and beyond*

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Many Austronesian languages exhibit a type of verbal inflection known as 'voice' or 'focus,' which, in a descriptive sense, tracks the grammatical role of topics or relativized phrases. Comparative data from previously understudied languages reveals that such affixal alternations are best analyzed as the morphological realization of different bundles of A- and Ā-Agree relations probing the same goal (i.e. topics/relativized phrases). Similar portmanteau agreement is found in Nilotic and Caucasian, with four loci of variation attested: (a) presence or absence of φ-feature agreement with the goal, (b) number of voice distinctions (i.e. how many bundles of Agree relations are realised in narrow syntax), (c) the type of Ā-operations that trigger the hybrid agreement, and (d) whether the goal undergoes overt Ā-movement. I argue that this type of hybrid agreement is a feature of discourse configurationality (Li & Thompson 1985; É Kiss 1995; Miyagawa 2010), which functions to index the φ-agreement relation of the phrase simultaneously under Agree relation with an Ā-probe. If this analysis is on the right track, it reveals that φ-feature agreement is not the only available means of indicating abstract Ā-Agree relations, and that what is known as 'Austronesian-type voice' or '*wh*-agreement' in the literature constitutes an understudied type of agreement that serves a similar purpose.

1 Introduction

As is well-known, φ-feature agreement is a common means of indicating the abstract Agree relation between the φ-probe and its goal, (1).

(1) a. Arabic
Al-'awlaadu$_i$ qadim-**uu/*-a** __$_i$.
the-boys-3MP came-**3MP/*3MS**
'The boys came.' (Bahloul & Harbert 1993:15)

b. English
John seem-**s/*∅** to have drunk too much coffee.

But how are other types of Agree relation – such as Agree with [uTOP], [uREL], or [uFOC] – realized in narrow syntax? Recent work has shown that φ-feature agreement may also occur to indicate Ā-Agree relations.[1] Consider below some instances of topic agreement in Kinande (Bantu), San Martin Peras Mixtec (Mixtec), and Ripano (Romance), (2)–(4).

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[1]To avoid confusion, throughout this paper I use the term 'φ-agreement' to refer to the abstract Agree relation between the φ-probe and its goal and 'φ-feature agreement' for morphological agreement that spells out the φ-features of the goal of any type of probe.

(2) San Martin Peras Mixtec

a. **Rà**$_i$-xá'antsya rà Juan$_i$ chìkí.
he-cut.PRES he Juan tuna
'*Juan* is cutting tunas.' (subject topic)

b. **Rì**$_i$-xá'antsya rà Juan chìkí$_i$.
it.AML-cut.PRES he Juan tuna
'Juan is cutting *tunas*.' (Ostrove 2018:220) (object topic)

(3) Kinande

a. **Omakuli** mo-**a**-seny-ire olukwi.
woman.1 AFF-**1.**S/T-chop-EXT wood.11
'*The woman* chopped wood.' (subject topic)

b. **Olukwi** **si**-lu-li-seny-a bakali.
wood.11 **NEG11**.S-PRES-chop-FV women.2
'Women do not chop *wood*.' (Baker 2003:113) (object topic)

(4) Ripano[2]

a. **Tu** nghe mme ti pij-**u** tropp-e cunfidenz-e.
you.M with me REFL take-**SG.M** too.much-SG.F confidence-SG.F
'*You* take too much liberty with me.' (subject topic)

b. L-u preta cunzacr-**e** ll'-**ostia**.
the-SG.M priest.SG.M consecrate-**3SG.F** the-**HOST.SG.F**
'The priest consecrates *the Host*.' (Rossi 2008:86,87) (object topic)

In all three languages, φ-feature agreement targets topics and not the grammatical subjects (Miyagawa 2010; Ostrove 2018; D'Alessandro 2020), showing a key feature of discourse configurationality (5) (Li & Thompson 1985; É Kiss 1995; Miyagawa 2010).

(5) *Discourse configurational languages*
In a topic-prominent language, the topic is, in a way, an alternative to the subject [in a subject-prominent language]. (É Kiss 1995:4)

The definition in (5) reflects a two-way typology commonly assumed in the literature, that languages are either subject-prominent or topic-prominent in agreement morphology, (6). An implicit assumption is therefore that φ-feature agreement is either A-oriented or $\bar{\text{A}}$-oriented in a given language. This raises the important question in (7).

(6)

	Subject-prominent language	Topic-prominent language
Agree with [uφ] realized in narrow syntax	YES	NO
Agree with [uTOP] realized in narrow syntax	NO	YES

(7) Are there languages where both A- and $\bar{\text{A}}$-Agree relations are indexed in narrow syntax?

In this paper, I show that such a design is not only logically possible but also attested in natural languages, although the type of agreement employed for this design has not been widely recognized or discussed. One group of languages that I argue manifests this design is the Philippine-type languages found in western Austronesian. Consider below two examples from Seediq, a Philippine-type language spoken in central Taiwan.

[2]See D'Alessandro (2020) for more detail about topic-driven φ-feature agreement in Ripano.

(8) Seediq

Wada=**ku=na** bbe-**un** na Pawan ka yaku.
PST=**1SG.TOP=3SG.SUBJ** hit-**PV** NOM Pawan TOP 1SG

'Pawan hit *me*.' (object topic construction)

In (8), both subjects and topics trigger φ-feature agreement.[3] A special affix (*-un*) is present on the verb, indicating that the grammatical role of the topic is the direct object. The form of this affix alters based on the choice of topic: subject (Actor Voice), direct object (Patient Voice), locative phrases (Locative voice), or none of the above (Circumstantial Voice). This mapping between voice form and grammatical role will be discussed in more depth in section 3.

The same set of voice alternations is obligatory in relativization, where the controller of voice form shifts from topic to the relativized phrase. To relativize the direct object, for example, the verb inside the relative clause (RC) must carry Patient Voice morphology (*-un*), analogous to way it tracks the grammatical role of topics in non-RC environments (8).

(9) Seediq

Ima ka [$_{RC}$ wada=na bbe-**un**]?
who LK [PST=3SG.SUBJ hit-**PV**]

'Who was the one that he hit?' (object relativization)

In this paper, I first establish that these alternating affixes known previously as 'voice' are best viewed as the morphological realization of different bundles of A- and Ā-Agree relations probing the same goal (i.e. topics/relativized phrases), following the analysis proposed in Chen (2017, to appear). I then discuss similar portmanteau affixes in western Nilotic and the Caucasian language Abaza. All these languages employ verbal inflections that alter for the grammatical role of certain Ā-elements (topics, relativized phrases, *wh*-phrases) and display independent traits of discourse configurationality. Upon scrutinizing the shared traits of these 'voice' affixes, I discuss four foci of variation attested among these languages: (a) presence or absence of φ-feature agreement with the goal, (b) number of voice distinctions (i.e. how many bundles of Agree relations are realised as distinct verbal affixes), (c) the type of Ā-operations that trigger the hybrid agreement, and (d) whether the goal undergoes overt Ā-movement.

I conclude that φ-feature agreement is not the only available means of realizing abstract Ā-Agree relations, and that languages may employ portmanteau agreement that spells out the bundle of multiple Agree relations targeting the same goal. What is known previously as 'Austronesian-type voice' or '*wh*-agreement' constitutes this type of hybrid agreement. This analysis is in line with previous Ā-agreement approaches to the voice morphology in Chamorro and Malagasy (Chung 1994; Pearson 2005) as well as the recent proposal that all φ-probes are Ā-sensitive and interact with Ā-features on their goal (Baier 2018).

The remainder of the paper is structured as follows. Section 2 establishes how voice functions in Austronesian and lays out the relevant basic facts. Section 3 presents specific evidence that the four-way voice morphology attested in Austronesian is the spell-out of four different bundles of abstract Agree relations that probe the topic/relativized phrases. Section 4 discusses similar 'voice morphology' in western Nilotic and Abaza, highlighting their similarities and differences with Austronesian-type voice. Section 5 discusses the implications and remaining questions of the current observations. Section 6 concludes.

[3]Such affixes are commonly referred to as pronominal clitics in previous work on western Austronesian languages, although there has been no attested evidence showing that these affixes are clitics and not agreement. See further discussion in section 4.

2 How voice works in Austronesian as topic-indicating morphology

The hybrid agreement to be discussed in this section is known in the literature as Austronesian-type voice or Philippine-type voice, the nature of which has triggered a longstanding debate in Austronesian syntax (e.g. McKaughan 1958; Ramos 1974; Schachter & Otane 1972; Keenan 1976; Schachter 1976; Ramos & Bautiste 1986; Foley & Van Valin 1984; Kroeger 1991; Richards 2000; Aldridge 2004, 2012; Rackowski & Richards 2005; Pearson 2005; Chen 2017; a.o.). Key traits of these affixes are summarized in (10).

(10) a. **A syntactically pivotal phrase**: In each finite CP, one phrase is designated the pivot and realized in a particular morphological form and/or structural position, regardless of its original grammatical function or thematic role.

b. **Fluid extraction restriction**: Ā-extraction (relativization, including pseudo-clefting) is limited to the pivot phrase of a given clause.

c. **Articulated verbal morphology**: Four-way affixal morphology on the verb alters based on the choice of the pivot, including options for taking certain non-core phrases as pivots.

d. **Marking of nonpivot phrases**: Nonpivot phrases carry a fixed case-marking regardless of the voice type of the clause.

e. **One-to-many mapping between voice and pivot selection**: the mapping is not conditioned simply by case or thematic role. Rather, the map reflects a complex mechanism sensitive to the relative structural height of the pivot compared to other DPs in the clause.

Consider below four rough paraphrases in Tagalog (11a-d). Each sentence possesses a distinct topic marked with a special marker labeled as 'pivot' (*ang* for common nouns;*si* for personal names). The four-way voice morphology alters for the choice of topics: subject topics (11a), direct object topics (11b), locative topics (11c), and topics whose grammatical role is none of the above (11d). Following conventional terminology, I refer the four affixes as Actor Voice (AV), Patient voice (PV), Locative Voice (LV), and Circumstantial Voice (CV). The two basic case markers are labeled as CM_1 and CM_2 to remain theory neutral. Their properties will be discussed in section 3.

(11) Tagalog

a. B**<um>**ili **si** **AJ** ng keyk mula kay Lia para kay Joy.
buy**<AV>** **PN.PIVOT** **AJ** INDEF.CM_2 cake P_1 PN.CM_2 Lia P_2 PN.CM_2 Joy
'*AJ* bought cake from Lia for Joy.' (AV)

b. Bi-bilih-**in** ni AJ **ang** **keyk** mula kay Lia para kay Joy.
CONT-buy-**PV** PN.CM_1 AJ **PIVOT** **cake** P_1 PN.CM_2 Li P_2 PN.CM_2 Joy
'AJ will buy *cake* from Lia for Joy.' (PV)

c. Bi-bilih-**an** ni AJ ng keyk **si** **Lia** para kay Joy.
CONT-buy-**LV** PN.CM_1 AJ INDEF.CM1 cake **PN.PIVOT** **Lia** P_2 PN.CM2 Joy
'AJ will buy cake from *Lia* for Joy.' (LV)

d. **I**-bi-bili ni AJ ng keyk mula kay Lia **si** **Joy**.
CV-CONT-buy PN.CM1 AJ INDEF.CM2 cake P_1 PN.CM2 Lia **PN.PIVOT** **Joy**
'AJ will buy cake from Lia for *Joy*.' (CV)

In relative clauses, the relativized phrase controls voice morphology. Mismatch between voice and its grammatical role yields ungrammaticality. To extract the subject, direct object, locative phrase, and non-locative adjunct from a two-place clause, the verb must be marked in AV, PV, LV, and CV, respectively, (12a-d). This fluid constraint is known in the Austronesian literature as 'pivot-only.'

(12) Tagalog

a. Sino ang [$_{RC}$ b**<um>ili/*-in/*-an/*i-** ng keyk]?
who PIVOT [$_{RC}$ buy**<AV>/*PV/*LV/*CV** INDEF.CM$_2$ cake]
'*Who* is the one that bought cakes?' (AV; subject relativization)

b. Ano ang [$_{RC}$ bi-bilih-**in/*<um>/*-an/*i-** ni Lia]?
what PIVOT [$_{RC}$ CONT-buy-**PV/*AV/*LV/*CV** PN.CM$_1$ Lia]
'*What* is the thing that Lia will buy?' (PV; object relativization)

c. Nasaan ang [$_{RC}$ bi-bilih**-an/*<um>/*-in/*i-** ni Lia ng keyk]?
where PIVOT [$_{RC}$ CONT-buy-**LV/*AV/*PV/*CV** PN.CM$_1$ Lia INDEF.CM$_2$ cake]
'*Where* will be the place where L bought cakes?' (LV; locative relativization)

d. Sino ang [$_{RC}$ **i**-bi-bili/***<um>/*-in/*-an** ni Lia ng keyk]?
who PIVOT [$_{RC}$ **CV**-buy/***AV/*PV/*LV**PN.CM$_1$ Lia INDEF.CM$_2$ cake]
'*Who* is the one that Lia will buy cakes for?' (CV; benefactive relativization)

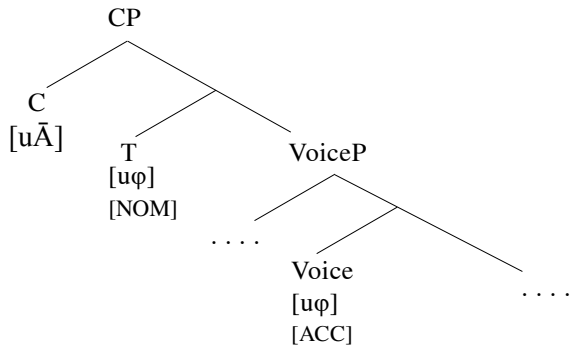
At first glance, the choice of voice seems conditioned by a single factor – the thematic role of the topic/relativized phrase: agent (AV), theme (PV), locative (LV), and benefactor/instrument (CV). However, a closer look at more basic constructions reveals a far more complicated picture, (13). This complex mapping will be revisited in section 3.

(13) Mapping between voice form and pivot selection in conservative Philippine-type languages[4]

	AV	PV	LV	CV
Unergatives	external argument	*	locative phrase	non-locative adjuncts
Unaccusatives	internal argument	*	locative phrase	non-locative adjuncts
Transitives	external argument	internal argument	locative phrase	non-locative adjuncts
Productive causatives	causer	causee	locative phrase	theme
Ditransitives	external argument	recipient	goal, source	theme
Control constructions	controler	controllee	n/a	theme
SVC	external argument	internal argument	locative phrase	non-locative adjunct

In the remainder of this section and the next, I argue that the complexity seen here is only apparent, and that this voice system can be captured through a simple analysis. This analysis assumes an accusative case system with obligatory Ā- (topic) agreement in each finite clause, schematized in (14).

(14) Proposal: the make-up of the Austronesian-type voice system



The main 'recipe' of this proposal is outlined in (15).

[4]This table presents the shared voice pattern attested in the majority of Austronesian primary branches and reconstructable to a higher level as part of early Austronesian morphosyntax. Note that some Malayo-Polynesian languages have developed an innovative control construction and do not exhibit the same voice pattern for control constructions as indicated here. See, for example, Landau (2013) for a detailed analysis of control constructions in Tagalog.

(15) a. φ-probe on T, probing the highest DP (i.e. subject)
b. φ-probe on matrix Voice, probing the highest DP below Voice (i.e. direct object)
c. A specific type of P that selects locative phrases.
d. $\bar{A}$-probe on C: a flat $\bar{A}$-probe sat on a head distinct from T, which can be satisfied by Agree with either [TOP] or [REL].[5]

In a system like (15), when a phrase is probed simultaneously by [u$\bar{A}$] and by (a), (b), or (c), the bundling of the two Agree relations is proposed to realize as a single voice affix. This proposal is summarized in (16).

(16) a. "AV" morphology: bundle of the Agree relation with (a) and with (d)
b. "PV" morphology: bundle of the Agree relation with (b) and with (d)
c. "LV" morphology: bundle of the Agree relation with (a) and (d)
d. "CV" morphology: the Agree relation with (d)

In other words, Austronesian-type voice indexes the convergence of abstract topic agreement with (a) abstract subject agreement ("AV"), (b) abstract object agreement ("PV"), (c) abstract locative agreement ("LV"), or (d) nothing else, when the goal of [uTOP] does not agree with any other probe ("CV"). Three important pieces of evidence for this analysis (17a-c) are presented in the remainder of this section.

(17) a. Voice affixes behave like agreement morphology hosted above T (§2.1)
b. The pivots (i.e. trigger of voice morphology) behave like topics (§2.2)
c. Evidence for the presence of a separate head (e.g. T) hosting the φ-probe (15a) (§2.3)

Unless indicated otherwise, the data presented below come from primary fieldwork on Nanwang Puyuma, Central Amis, Tgdaya Seediq, and Manila Tagalog. Each of the four languages belongs to a distinct primary branch of Austronesian in the consensus subgrouping. Puyuma is a single-member primary branch spoken in southeastern Taiwan. Amis and Seediq represent two other primary branches located in Taiwan: Atayalic and East Formosan. Tagalog is a Malayo- Polynesian language spoken in the Philippines.

2.1 Voice affixes behave like agreement morphology hosted in the C domain

Three independent facts suggest that Austronesian-type voice behaves like agreement morphology and not the morphological realization of individual functional heads.

First, voice morphology in prototypical Philippine-type languages must surface on the highest verbal head per CP, with the rest of the lexical heads carrying default voice-marking. Consider the Puyuma examples in (18), where true voice morphology obligatorily appears on the highest verbal head. The actual form of the default marking varies across languages. See Wurmbrand's (2014) survey for details.

(18) Puyuma
a. Ku=beray-**ay** na walak kana bu'ir.
1S.NOM=give-**LV** DEF.PIVOT child DEF.ACC taro
'I *gave* the child the taro.'

[5]This analysis follows from the recent proposal of $\bar{A}$-geometry (Miyagawa 2010; Aravind 2018; Baier 2018). See section 3 for details.

b. Ku=talam-**ay** ∅-beray na walak kana bu'ir.
1S.NOM=try-**LV** DEF-give DEF.PIVOT child DEF.ACC taro
'I *tried* to give the child the taro.'

c. Ku=trakatrakaw-**ay** talam ∅-beray na walak kana bu'ir.
1S.NOM=secretly-**LV** DEF-try DEF-give DEF.PIVOT child DEF.ACC taro
'I *secretly* tried to give the child the taro.'

Examples (19a-e) demonstrate further that the 'voice-climbing' phenomenon has nothing to do with the property or actual structural height of the highest head, which can vary from different types of lexical verbs (19a-c) to modals and adverbs (19d-e).[6]

(19) Paiwan

a. *Voice-marking on subject control verb*
'u-s<in>i-**patagilj**=anga=sun a sapay ta kaitang.
1SG.SUBJ-CV-PRF-**begin**=COS=2S.PIVOT LK <DEF>cultivate ACC field
'I have started to cultivate the field for *you*.' (Wu 2013:183) (CV)

b. *Voice-marking on the first lexical verb in SVCs*
'u-s<in>i-**vaik** a qaljup ta vavuy ti Kapi.
1S.SUBJ-CV-PRF-**go** LK <DEF> ACC wild.pig PIVOT Kapi
'I went hunting wild pigs with *Kapi*.' (Wu 2013:182) (CV)

c. *Voice-marking on control verb*
'u-si-**RuqeRuq** tjay Kapi a ∅-pa-vay tjay Kivi a pakiawi
1S.SUBJ-CV-**force** ACC Kapi LK DEF-CAU-give ACC Kivi PIVOT money
'I have forced Kapi to give Kivi *money*'.' (Wu 2013:251) (CV)

d. *Voice-marking on manner adverb*
'u-s<in>i-**galju** a tjavac a kakeDian.
1SG.SUBJ-CV-<PRF>**slowly** LK <DEF>walk PIVOT child
'I walked slowly with *the child*.' (Wu 2013:239) (CV)

e. *Voice-marking on abilitative modal*
Si-'a-**caqu** a lanqgui a kasiw.
CV-STAT=**be.able.to** LK swim<DEF> PIVOT wood
'I am able to swim by means of the *woods*.' (Wu 2013:18) (CV)

The mobility and uniqueness of the voice affixes per CP shows the hallmarks of agreement morphology and argues against an alternative analysis, that these affixes constitute valency-indicating morphemes hosted within individual VoicePs (e.g. Payne 1982; Gerdts 1988; Mithun 1994; Aldridge 2004 et seq., a.o.).[7] Two other observations suggest that the locus of the agreement is high in the left periphery.

First, Austronesian-type voice inflects for mood. Consider the reconstructed voice paradigm (20), which illustrates a three-way mood inflection common across conservative Philippine-type languages.

[6] Similar portmanteau agreement affixes in Nilotic behave similarly. See section 4 for details.

[7] See Chen (to appear) for further evidence against analyzing voice affixes as valency-indicating morphology. Note also that recent work on similar voice affixes in Nilotic has also analyzed them as Ā-agreement or extraction morphology (van Urk 2015; Erlewine et al. 2017).

(20) Early Austronesian voice morphology (Ross 2009, 2012; Blust & Chen 2017)

	a. AV	b. PV	c. LV	d. CV
a. indicative	*<um>	*-en	*-an	*Si-/Sa-
b. optative, hortative	*-a	*-aw	*-ay	*-anay
c. imperative, negative	*-∅	*-u	*-i	*-an

In Puyuma, for example, LV surfaces as the suffix *-ay* in indicative clauses and *-i* in imperatives (21a-c).

(21) Puyuma

a. Ku=beray-**ay** i Senten dra paysu.
1S.SUBJ=give-**LV.IND** PN.PIVOT Senten INDEF.ACC money
'I gave *Senten* money.' (LV indicative)

b. Beray-**i** i Senten dra paysu!
give=**LV.IMP** PN.PIVOT Senten INDEF.ACC money
'Give *Senten* money!' (LV imperative)

As Mood is standardly assumed to be hosted above T (e.g. Rivero & Terzi 1995; Han 2001; Noonan 2007), this suggests that voice is hosted high in the C domain. This is in line with previous Ā-agreement approaches to voice in Chamorro, Malagasy (see Chung 1994; Pearson 2005; contra Aldridge 2004 and Rackowski & Richards 2005).

Second, in various Philippine-type languages, voice morphology is obligatorily inserted into aspect morphology rather than the verbal stem. Puyuma and Paiwan, for example, both require the AV infix ** must be inserted into the aspect morphology (i.e. first syllable of the verb complex), (22a-b).

(22) a. Puyuma
D****a-deru i Atrung dra patraka.
<AV>PROG-cook PN.PIVOT Atrung INDEF.ACC meat
'Atrung is cooking meat.' (AV)

b. Paiwan
S****iu-siup ti Zepul nu Siaw.
<AV>HAB-suck PN.PIVOT Zepul IRR.TEMP <AV>soup
'Zepul sucks (it) when she eats soup.' (Chang 2006:64) (AV)

Assuming the Mirror Principle (Baker 1988; Harley 2013) holds, this shows that voice morphology is hosted in a projection higher than Aspect and therefore is encoded into morphology after that of Aspect. Since western Austronesian languages are tenseless languages, this fact thus suggests that voice morphology is likely to mark Ā-agreement and is hosted in a projection in the left periphery.

2.2 Pivots behave like topics

I turn now to the second basic question important for understanding of Austronesian-type voice: what is the nature of the pivot-marked phrases? Recall that voice morphology alters for the grammatical role of these phrases (§1). Given the conclusion above that voice affixes are hosted high in the left periphery, the pivot-marked phrases may be a certain type of Ā-elements.

This prediction is in line with an existing claim that pivots (in non-RCs) are topics. See, for example, Shibatani (1998), Richards (2000), Pearson (2001, 2005), Rackowski (2002), Erlewine (2014/to appear), Katagiri (2012), Chen (2017), Paul & Massam (2021) for this approach to pivots. Below I present two pieces of support evidence for this analysis.

First, many Philippine-type languages show a restriction in argument marking: in question-answer sequences with a clear discourse topic, the topic must be placed as pivot in the answer. This reveals a tight connection between topichood and pivot designation. Consider, for example, four spontaneous answers to the question 'Where is Lia's spoon?'(23a) in Tagalog. All four answers have the discourse topic in pivot status.

(23) Tagalog

a. Na saan **ang** **kutsara** ni Maria?
NA where **PIVOT** **spoon** PN.POSS Lia
'Where is Lia's spoon?' (discourse topic: Lia's spoon)

b. Gamit ni Lia (**ang** **kutsara**).
use.PV PN.CM$_1$ Lia (**PIVOT** **spoon**)
'Lia is using (it/the spoon). (⇝ topic as a theme pivot)

c. I-p<in>ang-ka-kain ni Ryan (**ang** **kutsara**).
CV-PANG<PRF>-RED-eat PN.CM$_1$ Ryan (**PIVOT** **spoon**)
'Ryan is eating with (it/the spoon)' (⇝ topic as an instrument pivot)

d. Na-kita=ko=[ng k<in>uha ni Ivan (**ang** **kutsara**)].
PRF.PV-see=1SG.CM$_1$=[LK steal<PV.PRF> PN.CM$_1$ Ivan (**PIVOT** **spoon**)]
'I saw that Ivan stole (it/the spoon). (⇝ topic as an embedded pivot)

e. Na kay Peter (**ang** **kutsara**).
NA with Peter (**PIVOT** **spoon**)
'The spoon is with Peter.' (⇝ topic as an existential pivot)

The same constraint is reported in three Philippine-type Formosan languages, Puyuma, Amis, and Seediq (Chen 2017), illustrated with the Puyuma examples below. As (24b-c) shows, an answer that does not mark the discourse topic as pivot is considered unnatural.

(24) Puyuma

a. Makakuta i Pilay uninan?
AV.what.happen PN.PIVOT Pilay today
'What did Pilay do today?' (discourse topic: Pilay)

b. Deru (**pro**) dra abay.
<AV>cook (**3SG.PIVOT**) INDEF.ACC rice.ball
'*She* cooked rice balls'. (⇝ topic as pivot-marked)

c. ***Tu**=deru-aw na abay.
3.SUBJ=cook-PV DEF.PIVOT rice.ball
(intended: 'She cooked *rice balls*).' (⇝ topic as not pivot-marked)

Second, comparative data from five Philippine-type languages (Tagalog, Malagasy, Puyuma, Amis, Seediq) shows that promotion-to-pivot confirms three typical Ā-properties: (a) reconstruction for Principle C, (b) no new antecedent for anaphor, and (c) cooccurrence of Weak and Weakest Crossover effects, (25).[8]

[8]It is noteworthy that the binding facts observed in Austronesian (25) do differ from those observed in Dinka, where topics simultaneously display subject properties and show both A- and Ā-properties (van Urk 2015).

A-properties	**Ā-properties**	Dinka	AN
No reconstruction for Principle C	Reconstruction for Principle C	No	Yes
New antecedents for anaphors	No new antecedent for anaphors	Yes	No
No Weak Crossover	Weak & Weakest Crossover	No	Yes

(25)

A-properties	Ā-properties
No reconstruction for Principle C	Reconstruction for Principle C
New antecedents for anaphors	No new antecedent for anaphors
No Weak Crossover	Cooccurrence of Weak Crossover & Weakest Crossover effects

Examples (26) demonstrate these traits in Tagalog. See Pearson (2001) and Chen (2017) for similar observations in four other Philippine-type languages, Malagasy, Puyuma, Amis, and Seediq.

(26) Tagalog

a. *Reconstruction for Principle C*

Hindi p**<in>**igil ni Lia ang sarili niya (na k<um>ain).
NEG **<PV.PRF>**control PN.NOM Lia PIVOT self 3SG.POSS (LK eat<AV>)

'Lia cannot stop *herself* from eating.' (Patient Voice)

b. *No new antecedent for anaphor*

Sa-sampal-**in** ng kanyang sarili si juan.
CONT-slap-**PV** ID.NOM 3SG REFL

(intended: Himself will slap *Juan*.') (Patient Voice)

c. *Weak Crossover*

M**<in>**amahal ng kanyang$_i$ ama ang bawat anak$_i$.
love**<PV.PRF>** NOM his father PIVOT every child

'His$_i$ father loves *every child*$_{<j/??i>}$.' (Richards 2000) (Patient Voice)

d. *Weakest Crossover*

?P**<in>**atay ng sarili niyang inay **si Riza**.
<PV.PRF>kill 1PN.CM$_1$ self 3S.POSS mother2 **PIVOT Riza**

(marginally acceptable: 'The mother of himself$_{<k>}$ killed Riza$_{<k>}$.') (Patient Voice)

The binding pattern above is consistent with the topic analysis of the pivots as well as the observation earlier that Austronesian-type voice behaves like agreement hosted in the C domain. At the same time, it argues against an alternative subject/absolutive analysis (Payne 1982; Gerdts 1988; Mithun 1994; Aldridge 2004 et seq.).

Finally, as predicted by the topic analysis of the pivots, there should be no argument structure alternation among sentences in different voice if promotion-to-pivot manifests topicalization (and not promotion-to-subject/absolutive). This prediction is borne out by examples like (27), which show that (i) voice alternation has no effect on the binding relations within the clause, unlike A-operations such as passivisation or raising and (ii) the pivot can remain structurally low and be bound by a non-pivot theme (27c).

(27) Tagalog

a. Nag-pa-pa-ligo=ako kay Ivan **ng sarili niya**.
AV.PRF-RED-bathe=1SG.NOM PN.ACC Ivan **INDEF.ACC REFL 3SG**

'I made Ivan bathe *himself*.' (AV)

b. P<in>a-pa-ligo=ko si ivan **ng sarili niya**.
CAU<PRF.**PV**>-RED-bathe=1SG.NOM PN.PIVOT Ivan **INDEF.ACC REFL 3SG**

'I am making Ivan bathe *himself*.' (PV)

c. I-p<in>a-li-linis=ko kay juan **ang kanyang sarili**.
CV-CAU<PRF>RED-clean=1SG.NOM PN.ACC Juan **PIVOT 3SG REFL**

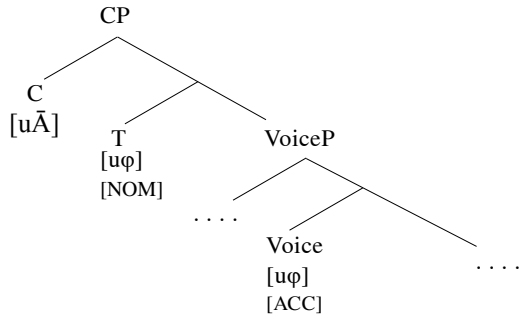
'I asked Juan to clean *himself*.' (CV)

The same binding pattern is attested in the Philippine-type languages Malagasy, Puyuma, Amis, and Seediq. See Pearson (2001) and Chen (2017) for relevant data.

2.3 Evidence for a separate subject/nominative position

So far we have established two facts: first, Austronesian-type voice behaves like agreement morphology hosted in a position above Aspect/T; second, the trigger of the agreement is best characterized as a topic. I turn now to the third component necessary for establishing the proposal in (15) (repeated below in (28)): there is a distinct head (labeled as T) that hosts a φ-probe, which agrees with the highest DP per clause.

(28) Proposal: the make-up of the Austronesian-type voice system



I will show that the case-marking labeled as CM_1 in the preceding discussion displays the hallmarks of nominative case. This suggests the presence of a subject/nominative position distinct from the position hosting topics.

Across Philippine-type languages, CM_1 shows three characteristics prototypical of nominative case: (i) it is unique per CP, (ii) it is available only to the highest DP, (iii) it is available to theme in unaccusatives. Examples (29)-(30) illustrate the third trait, showing that CM_1 may mark either the external argument in unergatives/transitives or the internal argument in unaccusatives. This shows that CM_1 does not realize inherent ergative case, which is assigned only to the external argument position.

(29) Tagalog

a. Ni-lakar-an **ni** **Ivan** ang daan.
PRF-walk-LV **PN.CM_1** **Ivan** PIVOT road
'*Ivan* walked on the road.' (CM_1 on unergative subjects)

b. H<in>ulug-an **ni** **Ivan** ang swimming pool.
fall<PRF>LV **PN.CM_1** **Ivan** PIVOT swimming pool
'*Ivan* fell into the swimming pool.' (CM_1 on unaccusative subjects)

(30) Seediq

a. P-puyas-an **na** **laqi** ka sapah=mu.
IRR-sing-LV **CM_1** **child** PIVOT house-1SG.POSS
'The children will sing in my house.' (CM_1 on unergative subjects)

b. H-huqil-an **na** **riso** nii ka Paran.
IRR-die-LV **CM_1** **young.man** this PIVOT Paran
'This young man will die in Paran.' (CM_1 on unaccusative subjects)

CM_1 also shows two other nominative behaviors: it is unique per clause and unavailable in the external argument position within nonfinite complements, as seen in (31).

(31) CM_1 as unavailable to embedded external arguments

a. Sa-pa-pi-nengneng aku tu/***nu** ising k-una pusi.
CV-CAU-PI-see 1SG.CM$_1$ ACC/*CM$_1$ doctor PIVOT-that cat
'I will ask *the doctor* to look at the cat.' (Amis)

b. S-p-tinun=mu ∅/***na** robo ka lukus.
CV-CAU-weave=1SG.CM$_1$ ACC/***CM$_1$** Robo PIVOT clothes
'I asked *Robo* to sew the clothes.' (Seediq)

c. I-p<in>a-nakaw=ko kay/***ni** juan ang kotse.
CV-CAU<PRF>-steal=1SG.CM$_1$ PN.ACC/***PN.CM$_1$** PIVOT car
'I asked *Juan* to steal the car.' (Tagalog)

d. ku=***tu**=pa-saletra'-anay kan sawagu i senten.
1SG.CM$_1$=***3.CM$_1$**-CAU-slap=CV SG.PIVOT Senten
'I asked him/her to slap Senten.' (Puyuma)

Both restrictions are unexpected if CM$_1$ marks inherent ergative case, which, in typologically diverse ergative languages, is available in the same environment. See, for example, (32a-b) for attested cases of ergative-marked causees in productive causatives.

(32) Ergative case as available to embedded external arguments

a. Alaweru-k hai-**ts** axos disi-ka.
Alaweru-ERG 1sg-**ERG** child.ABS hit-CAU
'Alaweru ordered me to beat the child.' (Guirardello 1999:307) (Trumai)

b. Imakiupi kupi jesus-**ya** emaputi yonpa-pi makiu-ya teuren.
bad do Jesus-**ERG** CAU try-PST Satan-ERG frust
'Satan unsuccessfully tried to make Jesus do bad.' (Abbott 1991:40) (Macushi)

The nominative behaviors of CM$_1$ observed here suggests the presence of a position hosting these phrases external to VoiceP in Philippine-type Austronesian languages, distinct from the position hosting pivot-marked phrases, in line with the current proposal repeated in (28). The fact that CM$_1$-marked phrases trigger φ-feature agreement (i.e. overt subject agreement under the current proposal) in some Philippine-type languages follows from this analysis.

3 Austronesian-type voice as four different bundles of Agree relations

The four basic observations reached in section 2 are outlined below in (33a-d).

(33) a. Voice affixes behave like agreement morphology hosted above T/Aspect.
b. The controller of voice morphology is always an Ā-element (topics in non-RC environments; relativized phrases in RCs).
c. There is independent evidence for the presence of a subject/nominative position.
d. Voice morphology alters for the grammatical role of the topic/relativized phrase.

This raises two subsequent questions: (i) what does each of the four voice affixes realize?, and (ii) what triggers voice alternation? In this section, I present specific evidence for the proposal outlined in (15)-(16).

3.1 Mapping between voice and pivot section

A look into the voice-pivot mapping in basic constructions in Philippine-type languages reveals the pattern in (34).

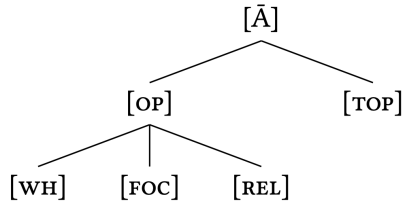
(34) Mapping between voice form and pivot selection in Philippine-type languages

	AV	PV	LV	CV
Unergatives	external argument	*	locative phrase	non-locative adjuncts
Unaccusatives	internal argument	*	locative phrase	non-locative adjuncts
Transitives	external argument	internal argument	locative phrase	non-locative adjuncts
Productive causatives	causer	causee	locative phrase	theme
Ditransitives	external argument	recipient	goal	theme
Control constructions	controler	controllee	n/a	theme
SVC	external argument	internal argument	locative phrase	non-locative adjunct
Generalization	pivot as subject	pivot as DO	pivot as locative	pivot as anything else

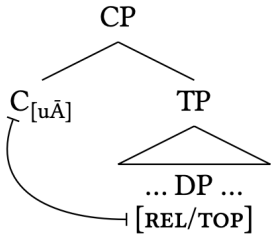
As argued in section 1, this pattern is best viewed as a four-way split among subjects (AV), direct objects (PV), locative phrases (LV), and none of the above (CV). In other words, "AV" morphology appears when the topic/REL-phrase is the highest DP per CP; "PV" morphology occurs when the topic/REL-phrase is the second highest DP; "LV" morphology indicates the topic/REL-phrase is a locative phrase; "CV" morphology indicates the topic/REL-phrase is anything else, which may be a non-locative adjunct or a DP that is structurally lower than the direct object.

Following the recent proposal of Ā-feature geometry (Aravind 2018; Baier 2018), that Ā-features (e.g. [WH], [REL], [FOC], [TOP]) are hierarchically arranged and probes may be relativized to different places on this hierarchy (35), I further assume that the apparent extraction constraint derives from topicalization and relativization as driven by a single flat Ā-probe, schematized in (36).[9]

(35) Ā-feature geometry



(36) Proposal: [uĀ] as a flat probe that agrees with either [top] or [REL]



In other words, a probe may be satisfied by an Ā-feature (represented [uĀ]), or a feature lower down on the hierarchy in (34), such as [REL]. In this view, the 'pivot-only' condition is essentially not an *extraction constraint*, but the same set of Ā-driven agreement morphology that may be driven by topicalization and relativization. See van Urk (2015) and for the same analysis for a similar extraction restriction observed in Dinka (Nilotic).

Building on (36), I argue that the four-way division in voice morphology is best captured under the analysis in (37).

(37) The nature of Austronesian-type voice
When a phrase is probed simultaneously by [uĀ] and another probe, the bundle of the two

[9]This analysis follows from Kuno (1973)'s earlier insight that relativization and topicalization in many languages cannot co-occur in the same clause.

abstract Agree relations is spelled out as voice morphology:

"AV": morphological realization of the bundle of Agree with [uĀ] and with [uφ] on T
"PV": morphological realization of the bundle of Agree with [uĀ] and with [uφ] on matrix Voice
"LV": morphological realization of the bundle of Agree with [uĀ] and with [uφ] on P_{LOC}
"CV": morphological realization of the Agree relation with [uĀ]

I present specific evidence for the analysis of each voice.

3.2 Actor Voice as the bundle of topic agreement and subject agreement

An important characteristic of AV morphology is that it appears only in clauses where the topic/relativized phrase constitutes what is equivalent to subjects in accusative languages. This includes (i) external arguments in unergatives, transitives, ditransitives, and control constructions, (ii) causers and not causees in productive causatives, and (iii) internal arguments in unaccusatives and detransitives. Examples (38a-d) illustrate this distribution in Puyuma.

(38) Puyuma

a. **M**-uarak na walak i arasip.
AV-dance DEF.PIVOT child LOC Arasip
'Atrung danced in Arasip.' (AV unergatives)

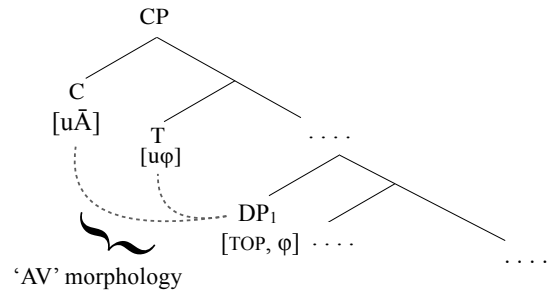
b. **M**-ekan na bangsaran dra patraka.
AV-eat DEF.PIVOT young.man INDEF.ACC meat
'The young man ate some meat.' (AV transitives)

c. **M**-u-ekan na patraka.
AV-DETR-eat DEF.PIVOT meat
'The meat was eaten up.' (AV detransitives)

d. **M**<in>atray na bangsaran.
AV<PRF> DEF.PIVOT young.man
'That young man died.' (AV unaccusatives)

Accordingly, I argue that this affix is best analyzed as the morphological realization of the bundle of Agree relations with [uĀ] and that with [φ] on T, (39). This accounts for the locality-sensitive nature of AV morphology as observed in productive causatives on one hand and its insensitivity to the thematic role of the pivot on the other.

(39) "AV" morphology: When the subject is also the topic/relativized phrase



3.3 Patient Voice as the bundle of topic agreement and object agreement

Similar to AV morphology, PV morphology shows a distribution sensitive to the relative structural height of the pivot: the pivot must be the second highest DP per clause as indicated by binding facts

(see Rackowski 2002, Pearson 2005, Chen 2017 for data from Tagalog, Malagasy, Puyuma, Amis, and Seediq). This includes (i) internal arguments in simple transitives (40a), (ii) causees but not themes in productive causatives (40b), (iii) controllees but not themes in control constructions (40c), and (iv) recipients and not themes in double object constructions (40d), but not themes in unaccusatives, which constitute the sole DP of the clause.

(40) Amis

a. Tangtang-**en** ni Lisin **k**-u **titi**.
cook-**PV** PN.NOM Lisin **PIVOT**-that **pork**
'Lisin will cook *that pork*.' (PV transitives)

b. Pa-pi-takaw-**en** aku **k**-una **wawa** t-una paysu.
CAU-PI-steal-**PV** 1SG.NOM **PIVOT**-that **child** ACC-that money
'I will ask *that child* to steal that money.' (PV causatives)

c. Lalang-**en** aku **ci** **mama** mi-palu t-u wawa.
dissuade-**PV** 1SG.NOM **PN.PIVOT** father AV-beat ACC-that child
'I dissuade father from beating the child.' (Wu 2006:375) (PV controls)

d. Pafeli-**en** aku **k**-una **wawa** t-una paysu.
give-**PV** 1SG.NOM **PIVOT**-that **child** ACC-that money
'I gave *the child* that money.' (PV ditransitives)

This distribution patterns with object agreement across languages, which is characterized by three traits: (i) it is unique per clause, (ii) it targets only the second highest DP per CP (i.e. highest DP below matrix Voice), and (iii) it cannot probe into PPs (Baker 2012). In Amharic, for example, object agreement can only target the recipient (i.e. second highest DP per clause) and not the theme in double-object ditransitives (41b); similarly, in productive causatives, it targets only the causee and not the theme (41b). This distribution is analogous to PV morphology in Austronesian (40).

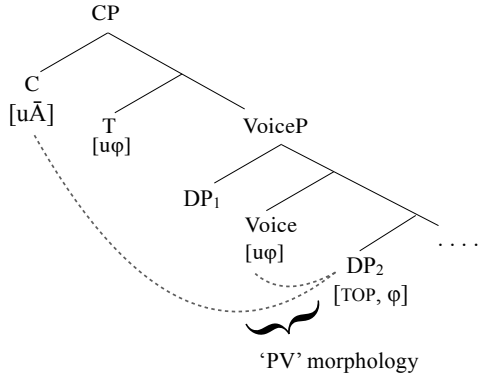
(41) Amharic

a. Ləmma l-Almaz məs'əhaf-u-n sət't'-**at**.
Lemma DAT-Almaz book-DEF-ACC give-(3MS)-**3FO**
'Lemma gave the book to *Almaz*.' (Baker 2012:258)

b. Aster was-a-n as-metaiʧ-**ññ**.
Aster ball-DEF.ACC CAU-hit-3FEM.S-**1SG.O**
'Aster made *me* kick the ball.' (Duncan & Aberra 2009)

I argue that PV morphology's shared distribution with object agreement is not a coincidence, but the outcome of its being the spell-out of the bundle of the Agree relations with [uĀ] and abstract object agreement, namely, the Agree relation between [uφ] on matrix Voice (i.e. object agreement) and its goal. This analysis is illustrated in (42).

(42) PV: When the DO is also the topic/relativized phrase



The fact some some Philippine-type languages exhibit overt φ-feature agreement with the direct object lends support to this assumption. See section 5.2 for details.

3.4 Locative Voice as the bundle of topic agreement and locative agreement

The distribution of LV morphology is relatively straightforward: it occurs only when the pivot of a clause is a locative phrase. This includes locative adjuncts or the recipient, goal, or source in ditransitive constructions. This pattern is illustrated with examples from Paiwan, (43a-c).

(43) Paiwan

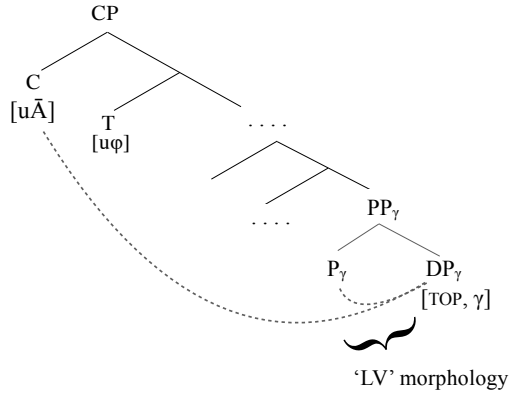
a. Qalup-**an** nua caucau tua vavuy **a** **gadu**.
hunt-**LV** CM_1 man CM_2 pig PIVOT mountain
'The man hunts wild pigs in *the mountains*' (Ferrell 1969:202) (LV transitives)

b. P<in>a-pana'-**an** **a** **icu** a i maza ni palang tay kui ta zua
CAU<PRF>-shoot-**LV** **PIVOT** **this** LK LOC here PN.NOM Palang PN.ACC Kui ACC that venan.
deer
'Palang made Kui shoot that deer *here*.' (Chang 2006:195) (LV causatives)

c. '<in>aLap-**an** **ti** **zepul** ta za paysu ni lavakaw.
<PRF>take-**LV** **PN.PIVOT** **Zepul** ACC that money NOM Lavakaw
'Lavakaw took money from *Zepul*.' (Chang 2006:74) (LV ditransitives)

This distribution can be captured via the analysis in (43), that the LV affix is the morphological reflex of the bundle of Agree with [uĀ] and that with a φ-probe on P_{LOC}, a specific type of preposition that selects only locative phrases.

(44) LV: When the locative phrase is also the topic



This analysis is supported by the fact that locative phrases in various Philippine-type Austronesian languages are marked with a specific preposition *i* that does not mark other types of adjuncts.

3.5 Circumstantial Voice as the sell-out of Agree with [uĀ]

Different from the other three voices, CV morphology does not show a one-to-many mapping with the pivot's grammatical role. Rather, possible pivots in CV ranges from DPs that are structurally lower than the direct object – such as themes in double object ditransitives, causatives, and control constructions — to various types of non-locative adjuncts, such as benefactor, instrument, reason, purpose, manner, or degree. This flexibility is illustrated with the Paiwan examples in (45).

(45) Paiwan

a. **Si**-qihul=si' hiya' 'i' ∅-pa-patas ku' ruas.
CV-force=2SG.NOM 3SG.ACC LK AV-CAU-write PIVOT book
'You forced him to read *the book*.' (Wu 2013:155) (CV controls)

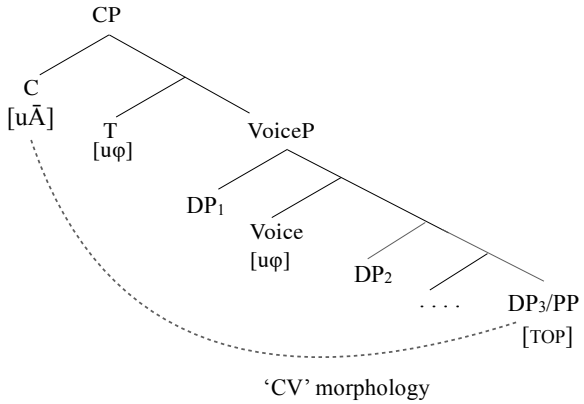
b. Ku=**s**<in>**i**-pa-'alup tay palang a icu a vavuy.
1SG.NOM=**CV**<PRF>-CAU-hunt ACC Palang PIVOT this LK boar
'I made Palang hunt *this wild pig*.' (Chang 2006:192) (CV causatives)

c. 'u-**s**<in>**i**-vaik a qaljup ta vavuy ti Kapi.
1S.NOM-**CV**-PRF-GO LK <AV> ACC wild.pig PIVOT Kapi
'I went hunting wild pigs with *Kapi*.' (Wu 2013:182) (CV SVCs)

d. 'u-**s**<in>**i**-patagilj=anga=sun a sapay ta kaitang.
1SG.NOM-**CV**-PRF-begin=COS=2S.PIVOT LK <AV>cultivate ACC field
'I have started to cultivate the field for *you*.' (Wu 2013:183) (CV transitives)

The one-to-many mapping between voice and pivot designation suggests that CV morphology may be a type of last-resort agreement, and not a specific bundle of Agree relations similar to the other three voices. I argue that this affix is best analyzed as the spell-out of the Agree relation with [uĀ] when the goal of this probe is not under Agree relation with any other probes, schematized in (46).

(46) CV: When the topic is none of the above



This proposal provides a simpler account of the nature of the CV affix, which has been shown problematic with an applicative analysis in recent work (Kuo 2015; Chen 2017). It also captures the parallel distribution of AV and PV morphology with subject and object agreement on one hand, and the one-to-many mapping between the CV affix and possible roles of pivot on the other.

In this view, Austronesian-type voice constitutes hybrid A- and Ā-agreement morphology that indexes different bundles of Agree relations probing topics and REL-phrases. If this analysis is on the right track, the four basic constructions in non-RC environments are best characterized as 'Subject Topic Construction' (AV), 'Object Topic Construction' (PV), 'Locative Topic Construction' (LV) and 'Circumstantial Topic Construction' (CV), respectively. This system that fits well with the definition of discourse-configurationality (Lee & Thompson 1980; É Kiss 1995; Miyagawa (2010).

4 Similar hybrid agreement in Nilotic and Caucasian

If the current account for Austronesian voice is on the right track, there exists an understudied type of agreement in natural languages that spells out abstract Agree relations – and not the φ-features of

their goals. Is this type of agreement unique to Austronesian? In this section, I show that similar portmanteau affixes are found in at least two other language families.

Recent work has reported similarities between Austronesian-type voice and a three-way distinguished voice system common in western Nilotic languages (Anderson 1991, 2007, 2015; van Urk 2015). Consider below voice alternation in Kurmuk (47) and Dinka (48).

(47) a. Kurmuk

ʈ̪áarák ˩bóor-**ú** ɗɛ̰ɛl kʌ̀ ŋìɪr.
person skin-PST.**SUBJ.T** goat PREP knife

'*The man* skinned a goat with a knife.' (subject topic)

b. ɗɛ̰ɛl bóor-úʈ̪-**ì** ŋʌ̀ ʈ̪áarák kʌ̀ ŋìɪr.
goat skin-PST-**OBJ.T** NOM person PREP knife

'The man skinned *the goat* with a knife.' (object topic)

c. ŋìɪr bóor-úʈ̪-˧**í** ɗɛ́ɛl ŋʌ̀ ʈ̪áarák
knife skin-PST-**OBL.T** goat NOM person

'The man skinned a goat with *the knife*.' (Anderson 2015:510) (oblique topic)

(48) Dinka

a. Àyén à-càm **cuîin** nɛ̈ păal.
Ayen 3s-eat.**SV** food P knife

'*Ayen* is eating food with a knife.' (subject voice)

b. Cuîin à-**cɛ́ɛm** Áyèn nɛ̈ păal.
food 3s.eat-**OV** Ayen.GEN P knife

'Ayen is eating *the food* with a knife.' (object voice)

c. Păal à-**cɛ́ɛmɛ̀** Áyèn cuîin
knife 3s-eat.**OBLV** Ayen.GEN food

'Ayen is eating food with *a knife*.' (van Urk 2015:61) (oblique voice)

In both languages, three-way verbal morphology alters for the grammatical role of the topic.[10] This voice system is characterized by the traits in (48) (Anderson 1991, 2015, 2007; van Urk 2015). Note the similarities between these traits and the behaviors of Austronesian voice as noted in sections 2 and 3.

(49) Main traits of Dinka's and Kurmuk's voice system

a. Three-way verbal morphology indicating the grammatical role of the topic (i.e. subject, direct object, or others)

b. Accusative case system

c. Oblique Voice as a last-resort voice that can target topics of different grammatical roles

d. Voice obligatorily present on the highest verbal head, with default marking on all lower heads, as seen in (50).

e. Same set of voice alternation occurs in other Ā operations such as relativization and *wh*-extraction, as seen in (51).

[10] In Dinka, topics simultaneously show subject properties, which has been captured through the analysis of [uĀ] and [uTOP] hosting in the same head. This is beyond the focus of this paper. What is important here is that Dinka's voice morphology inflects for the grammatical role of the goal of an Ā-probe – similar to how voice works in Austronesian.

(50) Dinka

a. Cuiin à-**cɛ́ɛm** Áyèn nè pǎal.
food 3s.**eat-OV** Ayen.GEN P knife
'Ayen is eating *the food* with a knife.' (Object Voice)

b. Cuiin à-**dɔ́ɔc** Bôl câam
food 3s-**do.quickly.OV** Bol.GEN eat.NF
'Bol is eating *the food* quickly.' (Object Voice)

c. Cuiin a-**cíi** Áyèn [$_{vP}$ câam nè pâal].
food 3s-**PRF**.OV Ayen.GEN eat.NF P knife
'Ayen has eaten *the food* with a knife.' (van Urk 2015: 61, 84, 96) (Object Voice)

(51) Dinka

a. Yè ŋà **cé** cuiin câam?
be who PRF.**SV** food eat.NF
'*Who* has eaten the food?' (Subject *wh*-question)

b. tíŋ [CP **cé** Bòl tiiŋ]
woman.CS [**PERF.SV** Bol see.NF]
'*the woman* that has seen Bol' (Subject relativization)

c. Yè ŋɔ́ **cíi** Bôl câam?
be.what **PRF.OV** Bol.GEN eat.GEN
'*What* has Bol eaten?' (Object *wh*-question)

d. tíŋ [CP **cìi** Bôl tiiŋ]
woman.CS [**PERF.OV** Bol.GEN see.NF]
'*the woman* that Bol has seen' (Object relativization)

A similar type of verbal inflection is observed in Abaza, a Caucasian language with ergative case alignment (O'Herin 1993, 2002; Arkadiev 2020; Arkadiev & Caponigro 2020). Similar to Philippine-type Austronesian languages, Abaza possesses a type of verbal morphology known as *wh*-agreement, which alters for the grammatical role of a varieties of Ā-elements (topics, relativized phrases, and *wh*-phrases)(O'Herin 1993, 2002). Its affixal alternation distinguishes between subjects, non-subjects (including ergatives and various types of indirect objects), and at least three distinct voice affixes that target different types of adjuncts (temporal, locative, and manner).

Consider below instances of relativization in the language reported in Arkadiev and Caponigro (2020). The 'voice affix' *j-*, roughly equivalent to Actor Voice in Austronesian and subject voice in Kurmuk and Dinka, occurs when the head noun is the subject in an ergative system, including (i) the sole phrase of intransitives (52a) and (ii) the object of transitive (52b).

(52) Abaza

a. [awaʔa **j**-ʕa-ta-χa-k^{w}a-z]
there **REL.SUBJ**-CSL-LOC-remain-PL-PST.NF IN
'Those who remain there are the Abaza.' (Subject RC (S))

b. [a-ph^{w}əspa **j**-lə-s-tə-z] a-ç̣a
DEF-girl **REL.SUBJ**-3SG.F.IO-1SG.ERG-give-PST.NF IN DEF-apple
'the apple I gave to the girl.' (Subject RC (O))

Where the relativized phrase is the ergative or an indirect object, the verb carries a distinct 'voice affix,' *z-* (53a-c).

(53) a. [a-ph^{w}əspa ç̣a lə-**z**-tə-z] a-ç̣'k̩^{w}ən
DEF-girl apple 3SG.F.IO-**REL.NSUBJ**-give-PST.NF IN DEF-boy

'The boy who gave an apple to the girl.' (Nonsubj RC (A))

b. [ĉ̣a **z**-s-tə-z] a-aphʷəspa
apple **REL.NSUBJ**-1SG.ERG-give-PST.NFIN DEF-girl
'the girl whom I gave an apple.' (Nonsubj RC (IO)

c. d-hʷa [jəʐ-**z**ə-b-χʷʕa-z]
3SG.H.ABS-say(IMP) 3SG.N.ABS-**REL.NSUBJ**-BEN-2SG.F.ERG-buy-PST.INFIN
'Say whom you bought it for!' (Nonsubj RC (AO))

Where the head noun is an adjunct, the verbal morphology shifts to some other affixes depending on the thematic role of the adjunct – *ʔa-* (locative), *an-* (temporal), or *š (manner)*, as in (54a-c).

(54) a. [a-karbəʒ'-kʷa **ʔa**-də-r-baχ-wa-z] a-baq̇
DEF-brick-PL **REL.LOC**-3PL-ERG-CAUS-dry-IPF-PST.NFIN DEF-shed
'the shed where bricks are made.' (Locative RC)

b. [l-an d-**an**-ʕa-j-χ] asqan
3SG.F.IO-mother 3SG.H.ABS-**REL.TMP**-CSL-go-RE DEF.time
'at the time when her mother came back.' (Temporal RC)

c. [d-**š**-š'ṭa-z] a-pš-ta
3SG.H.ABS-**REL.MNR**-lie-PST.NFIN 3SG.N.IO-be.like-ADV
d-š'ṭalχə-n
3SG.H.ABS-lie.down-RE-PAST.FIN
'He lay down like he lay before.' (Arkadiev & Caponigro 2020) (Manner RC)

The table below summarizes the division in voice morphology in the languages discussed above.

(55)

	Subjects	**Direct objects**	**Lower DPs**	**Locatives**	**Other adjuncts**
Austronesian	Voice 1	Voice 2	Voice 4	Voice 3	Voice 4
Dinka/Kurmuk	Voice 1	Voice 2	?	Voice 3	
Abaza	Voice 1	Voice 2 (ERG and other DPs)		Voice 3	(many other voices)

Similar to voice in Austronesian and Dinka, Abaza's voice morphology is obligatory in multiple Ā-operations. Consider, for example, the following *wh*-constructions, where *wh*-phrases control voice morphology in the same way relativized phrases do in relative clauses.

(56) Abaza

a. **j**-'a-ka-sa-ja?
SUBJ.WH-DIR-LOC-fall(AOR)-QN
'What fell?' (Subject *wh*-question (ABS S))

b. **j**-'a-b-g-ja?
SUBJ.WH-DIR-3SG.F.ERG-bring(AOR)-QN
'What did you bring?' (Subject *wh*-question (ABS O))

c. w-'a-**z**-re-ha-ja?
3SG.M.ABS-DIR-**NSUBJ.WH**-CAU-FEAR(AOR)-QN
'What frightened you?' (Non-subj *wh*-question (ERG A))

d. j-**z**-ze-b-x'a-da?
3SG.N.ANS-**NSUBJ.WH**-BEN.APPL-2SG.F.ERG-buy(AOR-QH)
'Whom did you buy it for?' (Non-subj *wh*-question (applied O))

e. we-**z**-ps-wa-da?
2SG.M.ABS-**NSUBJ.WH**-look-IPF-QH
'Whom are you looking at?' (O'Herin 1993) (Non-subj *wh*-question (indirect O))

The type of Ā-operation that triggers voice morphology in these languages is summarized in (57).

(57)

Austronesian	topicalization, relativization
Dinka (Nilotic)	topicalization, relativization, *wh*-questions
Abaza (Caucasian)	topicalization, relativization, *wh*-questions

To conclude: typologically diverse languages have been reported to exhibit a type of verbal morphology that indicates the grammatical role of certain Ā-elements. These alternating affixes cannot be simply analyzed as case agreement as they do not show a one-to-one correspondence with the case status of the agreement trigger.

5 Implications, remaining questions, and future directions

Having focused on identifying similarities in the 'voice' morphology observed in Austronesian, Nilotic, and Caucasian, I turn to four loci of variation (58a-d) that have important broader implications for our understanding of Ā-agreement.

(58) a. Presence or absence of overt Ā-movement of the goal
b. Presence or absence of φ-feature agreement with the goal
c. Number of voice distinctions (i.e. how many bundles of Agree relations are realised as distinct verbal affixes)
d. The type of Ā-operation that triggers the hybrid agreement

The variation in (58d) is potentially expected from the Ā-feature geometry (35) proposed in recent work. I discuss the other three observations below.

5.1 Presence or absence of overt Ā-movement of the goal

Traditionally, Merge has been considered a necessary outcome of Agree, but instances of *wh-in-situ* have revealed that overt Ā-movement is not a necessary outcome of Agree with an Ā-probe.

Abaza provides further evidence for its optionality. As seen in (59), *wh*-movement in the language is optional; a *wh*-phrase can either surface sentence-initially (59a) or remain in-situ (59b). Note, however, the consistent presence of voice morphology *z-* in both patterns, which indexes the grammatical role of the *wh*-phrase (i.e. non-subject).

(59) Abaza
a. Dizda kitab y-**z**-ima-m?
who book 3SI-**NSUBJ.WH**-have-NEG
'Who doesn't have a book?' (*Wh*-fronting)
b. S-kitab dizda y-na-**z**-axu?
1S-book who 3SI-PV-**NSUBJ.WH**-take
'Who took my book?' (O'Herin 1993:45, 37) (*Wh*-in-situ)

The obligatory presence of voice morphology on one hand and the optionality of *wh*-fronting on the other reinforces that Move is not a necessary outcome of Agree and that such flexibility may exist within a single language.

The word order variation in Philippine-type Austronesian language points to the same conclusion. Only a subset of Philippine-type languages require the topic/pivot to surface in a particular position in linear order. Consider the Malagasy examples in (60), where topics consistently appear sentence-finally regardless of their grammatical role or voice type.

(60) Malagasy

a. Mamono ny akoho amin'ny antsy **ny** **mpamboly**.
AV.kill DET chicken with-DET knife **DET** **farmer**
'The farmer, (s/he) is killing the chickens with the knife.' (AV)

b. Vonoin' ny mpamboly amin'ny antsy **ny** **akoho**.
PV.kill DET farmer with-DET knife **DET** **chicken**
'The chickens, the farmer is killing with the knife.' (PV)

c. Amonoan' ny' mpamboly ny akoho **ny** **antsy**.
CV.kill DET farmer DET chicken **DET** **knife**
'The knife, the farmer is killing the chickens (with it).' (Pearson 2005:389–390) (CV)

Following existing analyses, I assume that this word order derives from Ā-movement (topicalization) followed by predicate fronting (e.g. Pearson 2001, 2018; Rackowski & Travis 2000).

The second type of pattern can be characterized as topic-in-situ, where the topic/pivot consistently occurs in its θ-position. Consider the Paiwan examples in (61), where the linear order of the sentence is fixed regardless of voice alternation and pivot designation.

(61) Paiwan

a. Q**<m>**alup **a** **caucau** tua vavuy i gadu tua vuluq.
<AV>hunt **PIVOT** **man** CM_2 pig LOC mountain OBL spear
'The man hunts wild pigs in the mountains with a spear.' (AV)

b. Qalup-**en** nua caucau **a** **vavuy** i gadu tua vuluq.
hunt-**PV** CM_1 man **PIVOT** **pig** LOC mountain OBL spear
'The man hunts wild pigs in the mountains with a spear.' (PV)

c. Qalup-**an** nua caucau tua vavuy a gadu tua vuluq.
hunt-**LV** CM_1 man CM_2 pig **PIVOT** **mountain** OBL spear
'The man hunts wild pigs in the mountains with a spear.' (LV)

d. **Si**-qalup nua caucau tua vavuy i gadu **a** **vuluq**.
CV-hunt CM_1 man CM_2 pig LOC mountain **PIVOT** **spear**
'The man hunts wild pigs in the mountains with a spear.' (Ferrell 1979:202) (CV)

A third type of languages allows flexible word order among nominals, illustrated with the Puyuma examples in (62).

(62) Puyuma

a. P<en>anguter dra dare' **na** **markataguin**.
<AV>grab INDEF.ACC soul **DEF.PIVOT** **couple**
'The couple grabbed some soil.' (AV)

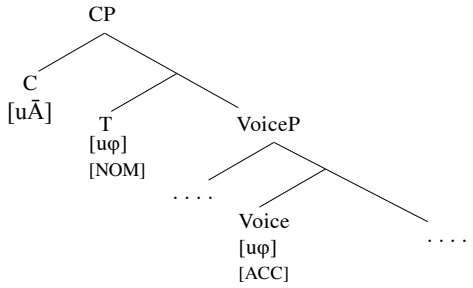
b. P<en>anguter **na** **markataguin** dra dare'.
<AV>grab **DEF.PIVOT** **couple** INDEF.ACC soul
'The couple grabbed some soil.' (Teng 2008:148) (AV)

Importantly, all three types of languages display the same type of voice morphology and the same extraction constraint in relativization. This mirrors the Abaza fact in (59), and lends further support to the view that overt Ā-movement is not necessary following Agree.

5.2 Optionality in overt φ-feature agreement with the goal

A second locus of variation observed in languages with an Austronesian-style voice system is the presence or absence of φ-feature agreement with the topic (i.e. the controller of voice morphology). As noted in section 1, recent work has showed that φ-feature agreement is not only a possible means of indicating the Agree with the φ-probe; it can also occur to index Agree with an $\bar{A}$-probe such as [uTOP], as seen earlier in (2)–(4). Given the current proposal is correct that the Austronesian-type voice system is made up of three types of abstract Agree relations (repeated in (61)), an immediate prediction is that voice morphology may cooccur with φ-feature agreement with the goal of the three probes: topics, subjects, and direct objects. On the other hand, given that morphological agreement is optional after Agree, these φ-feature agreements are predicted to be optional and subject to language-specific choice.

(63) Proposal: the make-up of the Austronesian-type voice system



Both predictions are borne out. Many (but not all) Philippine-type languages display φ-feature agreement with both the topic/pivot and the grammatical subjects. Consider below examples from Seediq and Puyuma.[11][12]

(64) Seediq

a. Wada=**ku** m-ege ∅ lukus ka yaku.
PRF=**1SG.TOP** AV-give ACC clothes PIVOT 1SG
'I have donated clothes.' (Actor Voice)

b. Wada=**ku=na** bbe-un na Pawan ka yaku.
PST=**1SG.PIVOT=3SG.SUBJ** hit-PV NOM Pawan PIVOT 1SG
'Pawan hit me.' (Patient Voice)

(65) Puyuma

a. **Tu**$_i$=trakaw-ay=**yu** dra paysu kan Senten$_i$.
3.SUBJ=steal-LV=**2SG.TOP** INDEF.ACC money PN.NOM Senten
'*Senten* stole money from you.' (LV)

b. **Tu**$_i$=atel-ay ku=tranguru (kana ladru)$_i$.
3.SUBJ=fall-LV 1SG.POSS.PIVOT-head (DEF.NOM mango)
'*It/the mango* fell on my head.' (LV)

In some Philippine-type languages, subject agreement and topic agreeement are realized as a single portmanteau affix. In Kapampangan, for example, third-person topic agreement and third-person subject agreement are spelled out as a single affix, *-ne*.

[11] These morphemes are commonly analyzed as clitic pronouns, but an agreement analysis has also been proposed for some languages (see, e.g. Chang 1997; Ochiai 2009).

[12] The subject agreement affix is traditionally glossed as GEN/ERG clitic, as it has long been overlooked that such agreements may also index undergoers in unaccusatives (e.g. (61b)) and hence is better viewed as indexing subjects and not ergative phrases. See Chen & Fukuda (2017) for a more detailed discussion.

(66) Kapampangan

a. Su-sulagpo=**ya** ing ayup.
PROG-fly.AV=**3SG.TOP** SPEC.SG bird
'The bird is flying.' (Actor Voice)

b. Seli=**ne** nita-ng tau ing bale.
buy.PV=**3SG.TOP+3SG.SUBJ** that.NOM-LK man PIVOT house.
'That man bought the house.' (Kitano 2006:90) (Patient Voice)

Overt object agreement is also attested in a subset of Philippine-type languages. Consider below three examples from Bunun, where φ-feature agreement with topic occurs with object agreement. As reported in other languages, object agreement is unique in Bunun and agrees only with the recipient and not the theme in double-object ditransitives (67b). Notice also that in instances of negation (67c), the two agreement affixes show different distributional constraints: while topic agreement must surface on the highest head, the negator, object agreement must be attached to the verb.

(67) Bunun

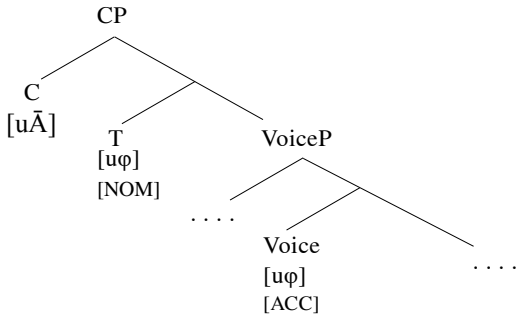
a. M-adu'=**ik=su'**.
AV-like=**1SG.TOP=2SG.OBJ**
'I like(d) you.' (Object agreement with theme)

b. Ma-saiv=**ik=su'** tasa' ahil.
AV-give=**1SG.TOP=2SG.OBJ** one book
'I give/gave you a book.' (Object agreement with recipient)

c. Na=ni'=**ik** ma-saiv=**su'** haimangsut.
FUT=NEG=**1SG.TOP** AV-give=**2SG.OBJ** thing
'I will not give you anything.' (Huang 1997:309, 371) (two loci of φ-feature agreement)

The (possible) cooccurrence of φ-feature agreement with topics, subjects, and direct objects in these languages reinforces the current proposal (repeated in (68)) that the Austronesian-type voice system is made up of three types of abstract Agree relations: Agree with [uĀ] and Agree with the φ-probe on T (subject agreement) and on the matrix Voice (object agreement). The attested variation in the presence or absence of these three sets of φ-feature agreement in Philippine-type languages further reinforces our current understanding that morphological agreement is a possible but not necessary realization after Agree.

(68) Proposal: the make-up of the Austronesian-type voice system



5.3 Implications and remaining questions

I have argued in this paper that different bundles of abstract Agree relations may be built in to verbal morphology when targeting the same goal. The fact that such verbal affixes may cooccur with φ-

feature agreement with the goal suggests that these affixes are distinct from φ-feature agreement, rather than manifesting a special type of φ-feature agreement (e.g. case agreement).

Furthermore, the fact such voice morphology is observed in both accusative and ergative languages confirms that the type of verbal morphology under concern is independent of case alignment. The following question remains therefore: how many possible bundles of Agree relations can be realized as distinct verbal affixes, given the patterns summarized in (69)?

(69)

	Subjects	**Direct objects**	**Lower DPs**	**Locatives**	**Other adjuncts**
Austronesian	Voice 1	Voice 2	Voice 4	Voice 3	Voice 4
Dinka/Kurmuk	Voice 1	Voice 2	?	Voice 3	
Abaza	Voice 1	Voice 2 (ERG and other DPs)		Voice 3	(many other voices)

I suggest that the number of voice distinction is language-specific, and it may also be subject to diachronic development. Many western Austronesian languages, for example, have undergone extensive loss in voice distinctions, where the prototypical four-way division in voice morphology has reduced to a three-way contrast between subjects, direct objects, and locative phrases (where non-locative adjuncts cannot be marked as pivot) or a simple two-way division between subjects and non-subject undergoers (see, e.g., Chen & McDonnell 2019 for a typological survey of western Austronesian voice systems).

Importantly, the lack of morphological distinction in voice morphology used for ergative and types of indirect object in Abaza reinforces that the voice morphology under concern is neither case agreement nor verbal inflection for specific thematic roles. At the same time, we have an example of a universal design that highlights the fact that all these languages possess some kind of last-resort voice that targets pivots of distinct grammatical/thematic role. This suggests that the actual bundle of Agree relations chosen to be realized in morphology may differ across languages.

A question left in the current analysis is the exact mechanism by which the bundle of abstract Agree relations is realized in morphology. This remains an understudied aspect of Minimalist syntax, and I do not intend to go into detail about possible hypotheses. Future research on similar voice morphology in other languages would shed more light on the nature of such agreement bundles.

If the current account of Austronesian-type voice is on the right track, it highlights a universal design that highlights abstract φ-agreement in typologically diverse languages. To the best of my knowledge, there has been no report of subject-prominent languages that employ specific voice morphology for indicating the $\bar{\text{A}}$-agree relation of subject (and or object). This reveals an understudied asymmetry between subject-prominent and topic-prominent languages – only the latter exhibits a possible design that enables a specification of the A-agree relation of a syntactically prominent $\bar{\text{A}}$-element (e.g. topic).

6 Conclusion

In this paper, I have discussed an understudied type of agreement morphology observed in Austronesian, Nilotic, and Caucasian, known previously in the literature as Austronesian-type voice or *wh*-agreement. I argued that such verbal affixes are best analyzed as the morphological realization of different bundles of A- and $\bar{\text{A}}$-Agree relations targeting the same goal (an $\bar{\text{A}}$-element) and that this design is a feature of discourse configurationality (Li & Thompson 1985; Miyagawa 2010), as a means of indicating the A-relation of the goal of an $\bar{\text{A}}$-probe. If this account is correct, it reveals that φ-feature agreement is not the sole available means of realizing abstract $\bar{\text{A}}$-Agree relations. Future investigation of this type of hybrid agreement would shed more light on the relationship between Agree and agreement.

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