

# Deriving the Anaphor Agreement Effect and its Violations

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*Abstract.* The Anaphor Agreement Effect refers to the descriptive generalization that anaphors cannot control agreement on the verb. The general consensus in the literature is that the Anaphor Agreement Effect is a universal phenomenon. Contrary to this, in this paper, I present data from a set of languages where an anaphor does indeed control agreement on the verb, in violation of the Anaphor Agreement Effect. To explain this dual nature of anaphors in world's languages, I propose a derivational timing analysis that derives not only the Anaphor Agreement Effect, but also those problematic cases in which it seems to be violated.

## 1. The Anaphor Agreement Effect

Rizzi (1990) defines the Anaphor Agreement Effect generalization as in (1).

- (1) Anaphor Agreement Effect (henceforth AAE):  
Anaphors cannot occur in a position construed with agreement.

As the name suggests, this generalization deals with a direct anaphor-agreement interaction and it can be clearly seen in languages that have object agreement.<sup>1</sup> Icelandic, for instance, allows the nominative argument to control agreement from the object position with certain experiencer verbs like *leiddust* 'be bored' (Sigurðsson 1991, 1996) as shown in (2).

- (2) Henni leiddust strákar  
she.DAT bored.3PL boys.NOM  
'She found the boys boring.'  
Icelandic (Sigurðsson 1996:3 (1))

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This research was part of the DFG project SU 835/1:ZE 1040/3 'Anaphora vs Agreement: Investigating the Anaphor-Agreement Effect' carried out at Universität Leipzig. I would like to thank Tanmoy Bhat-tacharya, Rajesh Bhatt, Imke Driemel, Kinjal Joshi, Ayesha Kidwai, Julie Legate, Andrew Murphy, Gereon Müller, Omer Preminger, Louise Raynaud, Eric Reuland, Martin Salzmann, Barbara Stiebels, Sandhya Sundaresan, Susi Wurmbrand, Philipp Weisser, Tom McFadden, Hedde Zeijlstra for their helpful comments and feedback at various stages of this work. This paper has also benefited immensely from comments and suggestions from three anonymous reviewers.

<sup>1</sup>In those languages with only subject agreement, the anaphor-agreement interaction cannot be tested because anaphors generally do not occur in the subject position.

Replacing the pronominal object in (2) with an anaphor gives us the right context to test the interaction between anaphora and agreement. It turns out that, in such contexts, the sentence becomes ungrammatical as shown in (3).<sup>2</sup>

- (3) \*Konunum<sub>i</sub> leiddust SIG<sub>i</sub>  
 women.DAT bored.3PL REFL.NOM  
 'Women were bored with themselves.' Icelandic (Halldór Sigurðsson p.c.)

The same pattern can be observed in Italian as well, where it is possible for a pronoun to control agreement from object position (4a). With an anaphor, however, the sentence becomes ungrammatical (4b).

- (4) a. A me interest-ano solo loro  
 to me.DAT interest-3PL only they.NOM  
 To me matter only they.' Italian (Rizzi 1990:32 (14b))  
 b. \*A lorro<sub>i</sub> interest-ano solo se-stessi<sub>i</sub>  
 to them.DAT matters-3PL only REFL.NOM  
 They<sub>i</sub> only matter to themselves<sub>i</sub>.' Italian (Rizzi 1990:33 (15))

Rizzi argues quite rightly that the ungrammaticality of (3) and (4b) cannot be explained by Principle A of the Binding Theory (Chomsky 1981) because in both cases, the dative subject could serve as a local antecedent for the anaphor, which satisfies Principle A.<sup>3</sup> Thus, having ruled out the Binding Theory as a possible explanation, Rizzi accounts for the ill-formed nature of these sentences with the AAE generalization in (1). Given this generalization, (3) and (4b) can be straightforwardly explained since, in each of these cases, the anaphors occur in an agreement-controlling position.

More importantly, what this generalization predicts is that, when the anaphor does not occur in an agreement-controlling position, the sentence should be grammatical. This prediction holds true for both Italian and Icelandic. In the case of Italian, when the anaphor occurs in genitive case, which independently cannot control agreement, the sentence becomes grammatical.

- (5) A lorro<sub>i</sub> import-a solo di se-stessi<sub>i</sub>  
 to them.DAT matters-3SG only of them-selves.GEN  
 'They<sub>i</sub> only matter to themselves<sub>i</sub>.' Italian (Rizzi 1990:33 (15))

Similarly in the case of Icelandic, when the anaphor occurs in accusative case, which also

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<sup>2</sup>The anaphor SIG in (3) is not actually the nominative form of the anaphor and I am using this form as a filler to denote what the form would be in the nominative.

<sup>3</sup>The dative subject can very well act as a suitable antecedent for the anaphor as in (5) and (6), therefore it is not the failure of binding that rules out (3) and (4b).

cannot control agreement, the sentence becomes grammatical.

- (6) Henni<sub>i</sub> virðist sig<sub>i</sub> vanta peninga.  
 she.DAT seem.3SG REFL.ACC lack money  
 ‘She<sub>i</sub> seems to herself<sub>i</sub> to lack money.’ Icelandic (Everaert 1991:288 (23b))

The grammaticality of the resulting sentence when the anaphor is not in an agreement-controlling position provides further support for the AAE generalization.

In addition to these Italian and Icelandic facts, it is often the case with Indo-European languages that they lack the nominative form of an anaphor and it is precisely the nominative that controls the agreement in these languages. Putting together these two facts, we seem to have a simple explanation in terms of the AAE for the absence of nominative anaphors in these languages. Considerations such as these led Rizzi to claim that the AAE generalization holds ‘systematically across natural languages’ (Rizzi 1990:28).

Since Rizzi’s original observation, there has been both empirical and theoretical study of the AAE generalization, which has yielded interesting results (Woolford 1999; Shiraki 2004; Tucker 2010; Sundaresan 2016; Yuan 2020; Preminger 2019). The empirical side of this research has focused on the different repair strategies that languages employ to overcome a violation of the AAE, while the theoretical side has tried to develop an explanation for the inability of the anaphor to control agreement. As already claimed by Rizzi, all these studies seem to confirm that the AAE is in fact a universal phenomenon.

On the contrary, in this paper, I present the data from a set of languages where the anaphor does indeed control agreement on the verb. To explain these apparently contradictory properties of anaphors, I propose an analysis that appeals to the Earliness Principle (Pesetsky 1989; Chomsky 2000; Pesetsky and Torrego 2001; Collins 2003) and the derivational timing of Merge of an agreement target and the anaphor’s antecedent, when they both establish an Agree relation with the anaphor.

This paper is divided into the following sections: In section 2, I discuss the languages that conform to the AAE generalization, where repair strategies are used to avoid a violation of the AAE. In section 3, I provide data from languages where the AAE is in fact violated. In section 4, I propose an analysis that explains not only those languages that follow the AAE generalization, but also the languages that violate it. In section 5, I discuss the further consequences of the proposed analysis. In section 6, I compare the proposed analysis with some competing approaches. Section 7 is the conclusion.

## 2. AAE respecting languages

The languages that follow the AAE are alike in not having agreement inflection controlled by the anaphor. However, these languages differ in terms of the repair strategies that they employ to overcome an AAE violation. The two prominent repair strategies that languages make use of are *agreement switch* from the anaphor (Patel-Grosz 2014; Sundaresan 2018) and *default agreement* with the anaphor (Storoshenko 2016). In this section, I discuss each of these strategies in turn.

### 2.1 Agreement switch

Agreement switch is a strategy where the agreement controller is changed from the anaphor to some other local element in the clause. Patel-Grosz (2014) reports that Kutchi Gujarati, an Indo-Aryan language, displays this pattern. Regarding its basic agreement system, Kutchi Gujarati has a split agreement system based on aspect (Patel-Grosz 2014; Grosz and Patel-Grosz 2014). In the imperfective aspect in (7a), the verb agrees with the subject. In the perfective aspect in (7b), the verb agrees with the case-marked object.

- (7) a. John Mary-ne jo-th-o t-o  
       John Mary-ACC see-IMPERF-MSG PST-MSG  
       ‘John was seeing Mary.’ (Patel-Grosz 2014:1 (1a))
- b. Mary John-ne jo-y-o  
       Mary John-ACC see-PERF-MSG  
       ‘Mary saw John.’ (Patel-Grosz 2014:2 (2))

Given that it is the object that controls agreement in (7b), we can replace it with an anaphor. As shown in (8), the agreement facts do not change in this case, as the normal expected  $\varphi$ -covarying agreement still obtains.<sup>4</sup>

- (8) Mary<sub>i</sub> potha<sub>i</sub>-ne jo-y-i  
       Mary REFL-ACC see-PERF-FSG  
       ‘Mary<sub>i</sub> saw herself<sub>i</sub>.’ (Patel-Grosz 2014:5 (10))

On the face of it, the agreement facts in (8) give the impression that it is the anaphor that controls  $\varphi$ -covarying agreement. However, Patel-Grosz demonstrates that in these cases, it is not the anaphor that controls agreement, but rather the subject DP. Her evidence for this agreement switch comes from dative subject constructions in the perfective aspect. In the perfective aspect, agreement usually tracks the object as can be seen by plural agreement on the verb (9a). However, when the object is an anaphor (9b), agreement switches

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<sup>4</sup>The examples in (7) and (8) are slightly adapted from the original source in order to make them a minimal pair. In (7), I have used the verb *see* instead of *touch* and in (8), I have dropped the optional modifier.

to the subject and since the dative subject is typically unavailable for agreement, default singular neuter agreement surfaces on the verb.

- (9) a. Raj-ne chokra-ne jo-va par-y-a  
 Raj-DAT children-ACC see-INF.PL had-PERF-PL  
 ‘Raj had to see children.’ (Patel-Grosz 2014:6 (13b))
- b. Raj<sub>i</sub>-ne e-na potha<sub>i</sub>-ne jo-vu par-y-u  
 Raj-DAT 3SG-GEN REFL-ACC see-INF.NSG had-PERF-NSG  
 ‘Raj<sub>i</sub> had to see himself<sub>i</sub>.’ (Patel-Grosz 2014:5 (12a))

It can be shown independently that dative subjects cannot control  $\varphi$ -covarying agreement and that only default neuter agreement is possible. In the following intransitive construction with a dative subject, the verbal complex shows default agreement:

- (10) John-ne a-vu par-y-u  
 John-DAT come-NSG had-PERF-NSG  
 ‘John had to come.’ (Patel-Grosz 2014:3 (6b))

Given that NSG is default agreement due to the dative subject, this clearly shows that (9b) has undergone agreement switch, where the goal of agreement is shifted from the anaphor in the object position to the dative subject. Therefore, Kutchi Gujarati uses agreement switch as a repair strategy to overcome a violation of the AAE.

## 2.2 Default Agreement

Another case of default agreement with an anaphor is seen in Shona, which is a Bantu language belonging to Niger-Congo language family. It has both subject marking (SM) and object marking (OM) as a part of its verbal morphology (Fortune 1980, 1984; Storoshenko 2016; Déchaine and Wiltschko 2017). As shown in (11), SM tracks the noun class of the subject and OM corresponds to the noun class of the object.

- (11) Mufaro a- $\emptyset$ -ri-bik-a bota  
 Mufaro.1 SM.1-PST-OM.5-cook-FV porridge.5  
 ‘Mufaro cooked porridge.’ (Storoshenko 2016:161 (5))

When the arguments are personal pronouns (12), they are obligatorily pro-dropped and their  $\varphi$ -feature specifications can be recovered from the SM and OM respectively.

- (12) ndi-nó-mù-kúmbír-á  
 1SG.SM-PRES-3SG.OM-ask-FV  
 ‘I ask him.’ (Fortune 1984:87)

When the anaphor occurs as the object, an invariant morpheme *zvi-* occurs in the OM slot, which does not  $\varphi$ -covary with the features of the anaphor. As shown in (13)–(15), even when the anaphor bears different  $\varphi$ -values, the *zvi-* morpheme remains unchanged.

- (13) ndi-a-**zví**-kudz-á  
1SG.SM-PST-OM-pride-FV  
'I praised myself.' (Fortune 1984:89)
- (14) v-á-**zvi**-kudz-á  
3PL.SM-PST-OM-praise-FV  
'They praised themselves.' (Fortune 1984:89)
- (15) John a-ka-**zvi**-pis-a  
John 3SG.SM-PST-OM-burn-FV  
'John burned himself' (Storoshenko 2016:157 (1a))

On the face of it, it is unclear what exactly the status of this *zvi-* morpheme is, as it could very well be an incorporated reflexive pronoun. However, Storoshenko (2016) points out that *zvi-* is not an incorporated pronoun but rather a class 8 agreement marker that belongs to the actual  $\varphi$ -paradigm of the language and typically occurs as default agreement. Storoshenko's evidence to show that *zvi-* is indeed a default agreement marker comes from conjunction. As shown in (16), when the object is a conjunct DP with nouns belonging to the different noun classes, the language resolves this conflict by inserting the *zvi-* morpheme into the object agreement slot.

- (16) nda- $\emptyset$ -**zvi**-tor-a [sadza no-mu-riwo]  
SM.1.SG-PST-OM.8-take-FV Sadza.5 and-3-relish  
'I took them (sadza and relish).' (Fortune 1980; Storoshenko 2016:169 (21))

Another context where *zvi-* occurs as default agreement is when the whole clause acts as an agreement controller. In such configurations, in the absence of a proper referential DP as an agreement controller, the *zva-*<sup>5</sup> morpheme occurs in the subject agreement slot (17).

- (17) [Ku-tsav-ir-a mu-mba ma-zuva e-se] **zva**-ka-kosh-a  
INF-sweep-APPL-FV house day every SM.8-RPST-important-FV  
'Sweeping the house every day was important.' (Storoshenko 2016:17 (22))

Therefore, as argued by Storoshenko, if *zvi-* typically occurs in default agreement contexts, then its occurrence with the anaphor in (13) must also be an instance of default agreement and this shows that Shona repairs AAE violating contexts by using default

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<sup>5</sup>*zva-* is an allomorph of *zvi-* that shows up in certain subject agreement contexts (Fortune 1980).

agreement.

### 3. AAE Violating Languages

In this section, I will discuss data from Tamil, standard Gujarati, Archi and Ingush, where anaphors do control  $\varphi$ -covarying agreement in violation of the AAE.

#### 3.1 Tamil

Tamil<sup>6</sup>, a Dravidian language primarily spoken in the southern parts of India, is a nominative-accusative language, where only the nominative argument controls agreement on the verb. As shown in (18), the unmarked nominative subject controls agreement for person, number and gender features.

- (18) Meena Kohli-yai paar-t-aal  
 Meena(F).NOM Kohli(M)-ACC see-PST-3SGF  
 'Meena saw Kohli'

In addition to this construction, Tamil also has dative-accusative and dative-nominative constructions (Lehmann 1993; Schiffman 1999). The dative-accusative construction is typically used with the verbs like *pidi* 'like', in which agreement is neither with the dative subject nor with the accusative object and as a result, the verb surfaces with default 3SGN agreement as in (19).<sup>7</sup>

- (19) Kohli-ukku Meena.v-ai pidi-t-atu/\*-aan/\*-aal  
 Kohli(M)-DAT Meena(F)-ACC like-PST-3SGN/\*-3SGM/\*-3SGF  
 'Kohli liked Meena.'

The dative-nominative construction typically occurs only with verbs like *kidai* 'got', and *tevai* 'need' (Baker 2015). In these type of constructions, agreement tracks the nominative object. As shown in (20), the nominative objects controls  $\varphi$ -covarying agreement on the verb.

<sup>6</sup>All the data in this section comes from the fieldwork conducted in Pollachi, which is located in the state of Tamil Nadu, India.

<sup>7</sup>An anonymous reviewer raises an interesting question about the status theme argument under the dative subject construction. And whether it is correct to refer it as 'object' given prior analysis of Subbarao (2012), where the predicate under the dative subject is considered [-transitive]. In fact Subbarao's (2012) analysis is based on an observation from Subbarao and Bhaskararao (2004), where it was noticed that the theme/patient under the dative subject can never bear the accusative case form in Telugu. Subbarao takes this observation to argue for [-transitive]. On the contrary, the example in (19) shows that theme/patient under the dative subject can be in accusative case in Tamil. Since the facts in Tamil differ from Telugu in this respect, I maintain the term 'object' in the discussion.



- (20) Kohli-ukku Meena kidai-t-aal  
 Kohli(M)-DAT Meena(F).NOM get-PST-3SGF  
 'Kohli got Meena.'

When it comes to the distribution of the anaphor *taan*, it can occur as a nominative object under the dative subject. In this case, as shown in (21), the corresponding agreement on the verb is  $\varphi$ -covarying.

- (21) a. Kohli<sub>i</sub>-ukku taan<sub>i</sub> tirumba kidai-t-aan  
 Kohli(M)-DAT REFL.NOM again get-PST-3SGM  
 'Kohli<sub>i</sub> got himself<sub>i</sub> back again.'  
 b. Meena<sub>i</sub>-ukku taan<sub>i</sub> tirumba kidai-t-aal  
 Meena(F)-DAT REFL.NOM again get-PST-3SGF  
 'Meena<sub>i</sub> got herself<sub>i</sub> back again.'

The occurrence of *taan* in an agreement-controlling position with corresponding  $\varphi$ -covarying agreement in (21) does not immediately point to the conclusion that it is the anaphor that controls agreement because it could very well be a case of agreement switch, as we saw in Kutchi Gujarati. However, it can be straightforwardly shown that there is no agreement switch in these cases. The evidence for this comes from the intransitive construction, where the dative subject is the sole argument of the sentence. In (22), default agreement is the only option.

- (22) Kohli-ukku pasi-t-atu/\*-aan  
 Kohli(M)-DAT hungry-PST-3SGN/\*-3SGM  
 'Kohli was hungry.'

Therefore, if dative arguments are typically unavailable for agreement in Tamil, the source of agreement in (21) can only be the nominative anaphor in object position. Therefore, Tamil presents a genuine violation of the AAE.

### 3.2 *Standard Gujarati*

Similar to Kutchi Gujarati, the standard variety of Gujarati also has a split agreement system based on aspect, where the imperfective aspect shows agreement with the subject (23a) and the perfective aspect shows agreement with the object (23b) (Mistry 2000; Doctor 2004).

- (23) a. Raaj copdi kharidt-o hat-o  
 Raaj(M) book(F) buy-MSG be-MSG  
 'Raaj was buying a book.'

(Mistry 2000:343 (17a))



- b. Sudha-e Raaj-ne uthaad-o  
 Sudha(F)-ERG Raaj(M)-ACC awakened-MSG  
 ‘Sudha awakened Raj.’ (Kinjal Joshi p.c.)

Given that it is the object that controls agreement in (23b), we can replace it with an anaphor. As shown in (24), the agreement facts do not change as the normal expected  $\varphi$ -covarying agreement still obtains.

- (24) Sudha<sub>i</sub>-e potaa<sub>i</sub>-ne sando-vi  
 Sudha(F)-ERG REFL-ACC involved-FSG  
 ‘Sudha<sub>i</sub> involved self<sub>i</sub>.’ (Mistry 2000:344 (19))

However, there is still the question with regard to (24) of whether it is the anaphor that controls agreement or if this is a case of agreement switch. If this were agreement switch, then the target of agreement switch would have to be the clause-mate subject. However, similar to Tamil, the ergative subject is not an agreement controller in the language. Evidence for this comes from (25), where an ergative subject with a clausal object gives rise to default neuter agreement on the matrix verb.<sup>8</sup>

- (25) Raaj-e jaṇaav-yũ [ke Sita jarur aavše]  
 Raj(M)-ERG informed-N that Sita(F) definitely come.FUT.3  
 ‘Raj informed that Sita will definitely come.’ (Kinjal Joshi p.c.)

Default agreement demonstrates very clearly that it is not possible for the ergative argument to control  $\varphi$ -covarying agreement. Therefore, the source of  $\varphi$ -covarying agreement in (24) can only be the anaphor in the object position, where there is no agreement switch.

Another piece of evidence to show that there is no agreement switch to the clause-mate subject in standard Gujarati can be seen by comparing the dative subject construction in standard Gujarati with that of Kutchi-Gujarati. In standard Gujarati, the  $\varphi$ -covarying agreement in (26a) suggests that there is no agreement switch to the dative subject because if there were, then we would expect to see default neuter agreement as in Kutchi Gujarati (26b).<sup>9</sup>

- (26) a. Sita<sub>i</sub>-ne pota<sub>i</sub>-ne apnav-i che  
 Sita(F)-DAT REFL-ACC adopt-FSG be  
 ‘Sita<sub>i</sub> wants to adopt herself<sub>i</sub>.’ Gujarati (Kinjal Joshi p.c.)

<sup>8</sup>Another difference between the Kutchi Gujarati and the standard Gujarati is that the subject is overtly marked with the ergative case in standard Gujarati but for the similar construction in Kutchi Gujarati, the subject is unmarked.

<sup>9</sup>Both in Kutchi Gujarati and in standard Gujarati, the dative subject never controls agreement.

- b. Raj<sub>i</sub>-ne potha<sub>i</sub>-ne jo-vu par-y-u  
 Raj(M)-DAT REFL-ACC see-N had-PERF-N  
 ‘Raj<sub>i</sub> had to see himself<sub>i</sub>.’ Kutchi Gujarati (Patel-Grosz 2014:5 (12))

These facts strongly suggest that it is the anaphor that controls agreement in standard Gujarati and we are therefore dealing with another example of an AAE violation.

### 3.3 *Ingush*

Ingush, a Nakh-Daghestanian language, also presents a clear case of an AAE violation. It is also an ergative-absolutive language, where only the absolutive argument controls agreement (Nichols 2011). In (27a), the verb shows agreement in gender B with the direct object and in (27b), the verb shows agreement with the direct object in gender J.<sup>10</sup>

- (27) a. aaz jett aara-b.oala-b.yr  
 1SG.ERG cow(B).ABS out-B.GO-B.CS.WP  
 ‘I led the cow out.’  
 b. aaz Mariem aara-j.oala-j.yr  
 1SG.ERG Mariem(J).ABS out-J.go-J.CS.WP  
 ‘I led the Mariem out.’ (Nichols 2011:432 (5-7))

In Ingush, the anaphor can occur as an absolutive argument either with an ergative subject (28a) or with a dative subject (28b) and the corresponding agreement on the verb is  $\varphi$ -covarying.

- (28) a. Muusaaz learrha shie xoadav-veav  
 Muusa.ERG on.purpose REFL.ABS cut-V.CS.NW.V  
 ‘Musa cut himself on purpose.’ (Nichols 2011:641 (27))

<sup>10</sup>In (27), the letters B and J refer to the morphological  $\varphi$ -features of the argument, which is basically the glossing convention that Nichols (2011) adopts in her grammar of Ingush. The other  $\varphi$ -features and their corresponding letters are listed below.

Person	Gender	SG	PL
1/2	M	V	D
1/2	F	J	D
3	M	V	B
3	F	J	B
3	various non-human	B	B
3	various non-human	B	D
3	various non-human	D	D
3	various non-human	J	J

Furthermore, Nichols uses CS to denote causative, WP to denote witnessed past tense and NW to denote nonwitnessed tense.

- b. Suona shie kizjaa-chy bwarjga-j-eira  
 1SG.DAT REFL.ABS mirror.GEN-in eye-J.see.WP  
 'I(female speaker) saw myself in the mirror.'  
 (Nichols 2011:641 (22))

In the above example, the change in the case of the subject from ergative to dative does not affect the agreement. If there was an agreement switch to the clause-mate subject in (28), then  $\varphi$ -covarying agreement would not be expected because the ergative or dative arguments are by default not agreement controllers in the language. The evidence for this comes from (29), where the dative subject with the clausal object does not trigger agreement on the matrix verb as it appears without any agreement inflection.

- (29) Suona [yz dika sag voliga] xou  
 1SG.DAT 3SG good person V.BE.SBJ know.PRES  
 'I know he is a good person.'  
 (Nichols 2011:547 (40))

If the dative or ergative arguments are generally not agreement controllers, then they cannot be the source of  $\varphi$ -covarying agreement in (28) and consequently, it must be the anaphor that controls agreement. Thereby, Ingush also presents an AAE violation.

### 3.4 Archi

Archi is yet another Nakh Daghestanian language that violates the AAE. It is also an ergative-absolutive language, where only the absolutive argument controls agreement on the verb (Chumakina et al. 2016).<sup>11</sup> As shown in (30), only the features of the absolutive argument are reflected on the verb.

- (30) zari noʃš darc'-li-r-ši ebt'ni  
 1SG.ERG horse(III)[SG.ABS] post-SG.OBL-CONT-ALL III.SG.tie.PERF  
 'I tied the horse to the post.'  
 (Chumakina et al. 2016:60 (29))

Similar to Ingush, the anaphor can occur as the absolutive argument and the corresponding agreement inflection is  $\varphi$ -covarying as shown in (31).

<sup>11</sup>Not all verbs in Archi show agreement inflection and only a set of verbs do. They always inflect for the features of the absolutive argument. The agreement inflection are for two numbers: Singular and plural. The Gender system consist of four genders. The I and II denote male and female humans respectively. The other nouns are distributed across III and IV. The agreement declension for the verb 'bite' is shown in the table below (Bond et al 2016: 23).

	SG	PL
I	w-eq:'u	b-eq:'u
II	d-eq:'u	
III	b-eq:'u	eq:'u
IV	eq:'u	

- (31) a. Zalik-li-s                      inža-w                      w-ak:u                      daχon-n-aš  
           Zalik(I)-SG.OBL-DAT REFL.ABS-I.SG I.SG-see.PERF mirror(IV)-SG.OBL-IN-EL  
           ‘Zalik saw himself in the mirror.’                      (Bond and Chumakina 2016:69 (52))
- b. laha-s                              inža-w                              w-ak:u  
           child(I).SG.OBL-DAT REFL.SG.ABS-I.SG I.SG-see.PERF  
           ‘A boy saw himself.’    (Sadler 2016:158 (19))

If only absolutive argument can control agreement in Archi (Chumakina et al. 2016), then agreement in (31) can only come from the anaphor, which bears absolutive case. These facts suggest that Archi also constitutes a clear violation of the AAE similar to Tamil, standard Gujarati and Ingush. If we compare these languages with the AAE respecting languages like Shona and Kutchi Gujarati that we saw in section 2, the central questions that arise are (i) why does the AAE seem to hold in some languages but not others, (ii) how can we account for the difference between these two types of languages? In the following section, I take up these questions in detail.

#### 4. Proposal

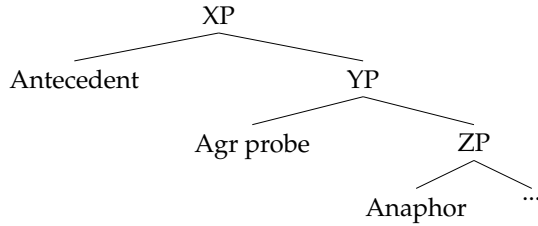
To begin with, I argue that both the AAE and its violations are predicted by a system that treats both agreement inflection and anaphors as  $\varphi$ -probes that undergo Agree (Chomsky 2000) with a corresponding DP that acts as suitable  $\varphi$ -goal (Reuland 2001; Heinat 2008; Rooryck and Vanden Wyngaerd 2011). The anaphor, being a  $\varphi$ -probe itself, cannot control agreement. However, the anaphor does not remain a  $\varphi$ -probe throughout the course of the derivation because there will be some point in the derivation where the anaphor acquires a value for its  $\varphi$ -features as a result of undergoing Agree with its antecedent. This valuation will change the anaphor from being a  $\varphi$ -probe to a  $\varphi$ -goal. Consequently, if agreement targets the anaphor after it has become a  $\varphi$ -goal, then it is predicted to be able to control agreement.

Regarding the question of how and when exactly the anaphor becomes a  $\varphi$ -goal, I propose that it depends on derivational timing, that is, the order in which an agreement probe is merged relative to the antecedent of the anaphor.<sup>12</sup> The two possible abstract scenarios are given below,

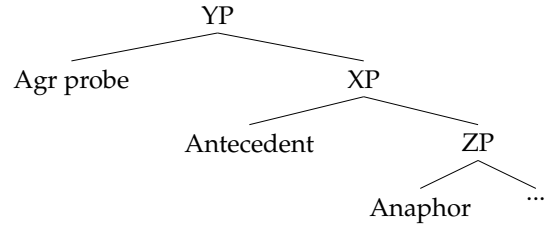
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<sup>12</sup>The usage of term *agreement probe*, here, refers to the functional heads like T or v that that agrees with the corresponding DP.

(32) *Derivation A:*



(33) *Derivation B:*

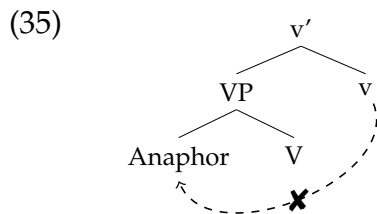


In derivation A, the Agr probe is merged before the antecedent. When this structure is built up to the level of YP, there is only the Agr probe and the anaphor in the structure. When the Agr probe tries to agree with the anaphor, the anaphor does not yet have  $\varphi$ -features and agreement fails. This failure of agreement is what results in the AAE.

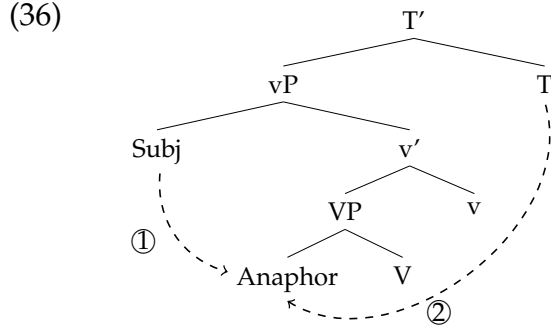
In derivation B, the antecedent is merged before the Agr probe and at the level of XP, both the antecedent and the anaphor are present in the structure. This allows the anaphor to first undergo Agree with the antecedent and acquire the  $\varphi$ -features before the Agr probe is merged. Thus, the anaphor becomes a  $\varphi$ -goal prior to Agree with the Agr probe, allowing it to control agreement. This is what results in a violation of the AAE. The predicted patterns are schematized below:

- (34) a. Pattern A: Agr probe  $\succ$  Antecedent  $\rightarrow$  AAE holds  
 b. Pattern B: Antecedent  $\succ$  Agr probe  $\rightarrow$  AAE violation

In Pattern A, where the Agr probe is merged before the antecedent, the AAE is expected to hold without any exception. On the other hand, in Pattern B, where the antecedent is merged before the Agr probe, the AAE is predicted not to hold. Given these predictions, the functional head that acts as an Agr probe in a given language plays an important role in determining the AAE profile of that language. For instance, if  $v$  functions as an Agr probe, which seeks to agree with the anaphor in object position, as shown in (35), the subject (or the antecedent) has not yet been merged in the structure. Therefore, in such cases, the anaphor would not have yet acquired its  $\varphi$ -features and cannot act as a suitable agreement controller when  $v$  agrees with it.



On the other hand, if it is not *v* but *T* that is the Agr probe that seeks to agree with the object anaphor, as shown in (36), the subject (or the antecedent) is already present in the structure. Therefore, the anaphor would have already acquired its  $\varphi$ -features from the subject and consequently, it can act as suitable agreement controller when *T* agrees with it.



I show that languages in which the AAE holds like Shona and Kutchi Gujarati have *v* as their Agr probe and as a result, they respect the AAE. On the other hand, languages like Tamil, standard Gujarati, Archi and Ingush have *T* as their Agr probe and thereby, they allow agreement with anaphors in violation of the AAE. However, before actually deriving these patterns in these languages, I will first present the background assumptions that are needed for the analysis.

#### 4.1 Assumptions

##### 4.1.1 Nature of $\varphi$ -probes

I assume that functional heads like *T* or *v* do not have any inherent values for their  $\varphi$ -features and they acquire values for their  $\varphi$ -features in the course of the derivation. Therefore, these functional heads enter the derivation without any values as shown in (37).

$$(37) \quad T \text{ or } v = \{\varphi: \_\_\}$$

When it comes to anaphors, I assume that they are slightly different from functional heads. Anaphors may have a partial but not full set of values for their  $\varphi$ -features.<sup>13</sup> Therefore, anaphors enter the derivation with partially-filled values as shown in (38), where ‘*x*’

<sup>13</sup>As pointed out by an anonymous reviewer, empirical support for such characterization of anaphor comes from the cross-linguistic  $\varphi$ -featural make up of anaphors. For instance, Japanese *zibun* is singular (and has a plural form *zibun-tati*). Korean *caki* and Tamil *taan* are singular and 3rd person and they lack only the gender feature. Similarly, Scandinavian *sig* is 3rd person.

stands for set of values that are not fully valued.

$$(38) \quad \text{Anaphor} = \{\varphi:\underline{x}\}$$

Given these feature representations, functional heads like T or v require a complete set of values for their  $\varphi$ -features, whereas anaphors require values for only those features that they inherently lack. It is the lack of  $\varphi$ -values that makes the functional heads (T or v) and anaphors act as  $\varphi$ -probes.

These  $\varphi$ -probes eventually acquire  $\varphi$ -values by undergoing Agree with a corresponding DP that is inherently specified with a full set of  $\varphi$ -feature values such as  $\{\varphi:3\text{SG}\}$ . Therefore, by the end of the derivation,  $\varphi$ -probes are provided with values, as shown in (39).

$$(39) \quad \begin{array}{ll} \text{a.} & \text{Anaphor} = \{\varphi:3\text{SG}\} \\ \text{b.} & \text{T or v} = \{\varphi:3\text{SG}\} \end{array}$$

As (39) indicates, there is no featural distinction between an anaphor and a functional head at the end of the derivation. However, the difference between them comes from the interpretability of the  $\varphi$ -features (Tucker 2010; Rooryck and Vanden Wyngaerd 2011). Since anaphors belong to the class of nominals, their  $\varphi$ -features are semantically interpretable, whereas the same set of  $\varphi$ -features is not interpretable on functional heads. Therefore, in terms of formal representation, the anaphor would enter the derivation with interpretable and (partially) unvalued features, while a functional head is lexically specified with uninterpretable and (fully) unvalued features as shown in (40). Given these feature representations, the anaphor only needs to receive a value for its unvalued features, whereas functional heads have to not only acquire the value but check their uninterpretable feature by the end of the derivation as shown in (41).<sup>14</sup>

$$(40) \quad \begin{array}{ll} \text{At the beginning of the derivation:} & (41) \quad \text{At the end of the derivation:} \\ \text{a.} & \text{Anaphor} = \{i\varphi:\underline{x}\} \\ \text{b.} & \text{T or v} = \{u\varphi:-\} \end{array} \quad \begin{array}{ll} \text{a.} & \text{Anaphor} = \{i\varphi:3\text{SG}\} \\ \text{b.} & \text{T or v} = \{u\varphi:3\text{SG}\} \end{array}$$

#### 4.1.2 Nature of Agree

As I have illustrated above, the functional head and the anaphor undergo a change in the nature of their representation in the course of the derivation from (40) to (41). I assume that the process responsible for this change is Agree, where the uninterpretable feature is checked and the unvalued feature is valued. While there have been various types and

<sup>14</sup>A requirement imposed by the *Principle of Full Interpretation* (Chomsky 1995) at the interface level.



versions of Agree proposed in the literature, my approach involves an analysis that can be classified as Cyclic Agree (Rezac 2003; Béjar and Rezac 2009; Carstens 2016; Keine and Dash 2018). An advantage of Cyclic Agree is that it allows for a principled expansion of the cyclic domain by adopting more or less the same mechanism as standard Agree (Chomsky 2000) based on the Matching Condition in (42).

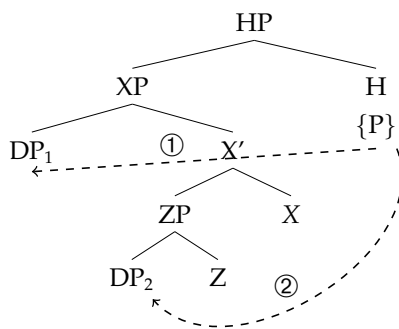
- (42) Matching is a relation that holds of a probe P and a goal G. Not every matching pair induces Agree. To do so, G must (at least) be in the domain D(P) of P and satisfy locality conditions. The simplest assumptions for the probe-goal system are shown
- Matching is feature identity.
  - D(P) is the sister of P.
  - Locality reduces to ‘closest c-command’.
- (Chomsky 2000:122)

With this Matching Condition in place, the locality domain of the probe can be cyclically expanded Béjar and Rezac (2009). The basic working definition of cyclic expansion as adopted in Keine and Dash (2018) is given in (43).<sup>15</sup>

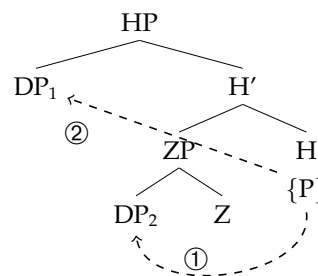
- (43) Given a probe P on a head H,
- P first searches H’s complement (i.e., H’s c-command domain);
  - if this search is unsuccessful, P can agree with higher material.

The standard locality pattern and cyclic expansion are represented in (44) and (45).

(44) Standard locality pattern



(45) Cyclic expansion



In the standard locality pattern in (44), the probe P on the head H seeks to establish Agree

<sup>15</sup>Keine and Dash (2018) refines the Cyclic Agree definition given in (43) to account for the agreement and scrambling phenomena in Hindi but for our purpose, this will suffice.

with the its closest goal  $DP_1$ . If  $DP_1$  is not a suitable match, the probe establishes Agree with  $DP_2$  provided the latter is a suitable match. In the cyclic expansion in (45), the probe P on the head H seeks to establish Agree with the its closest goal  $DP_2$ . If  $DP_2$  is not a suitable goal, then cyclic expansion allows the search domain of P to include  $DP_1$ , which is in the specifier of H. As far as the DPs are concerned, I assume that they can be unsuitable for the probe P under the following conditions:

(46) *Match failure conditions:*

- a. Failed checking: An uninterpretable  $\varphi$ -feature on a probe P is left unchecked by a corresponding DP.
- b. Failed valuation: An unvalued  $\varphi$ -feature on a probe P is left unvalued by a corresponding DP.

The condition in (46a) enables the probe P to distinguish between structural and inherent case on a DP. One widely noticed cross-linguistic agreement pattern is that structural cases like nominative can successfully control agreement, while inherent cases like dative cannot (as we have already seen in the discussion of Kutchi Gujarati, standard Gujarati and Tamil in the section 2 and 3). The following example from Tamil illustrates this point, where  $\varphi$ -covarying agreement obtains with a nominative subject (47) and default agreement with a dative subject (48).

(47) Kohli                      odi-n-aan  
Kohli(M).NOM run-PST-3SGM  
'Kohli ran'

(48) Kohli-ukku      pasi-t-atu  
Kohli(M)-DAT hungry-PST-3SGN  
'Kohli was hungry'

In order to account for this difference, I assume that the condition in (46a) is at work, where it is not possible for dative DPs to check the uninterpretable  $\varphi$ -feature of the probe and consequently, the dative nominals cannot be a suitable match for Agree. On the other hand, nominative DPs can check the uninterpretable  $\varphi$ -feature of the probe and the nominative nominals can thus act as a suitable match for Agree.<sup>16</sup>

An added advantage of (46a) is that it also enables the probe P on an anaphor to not be sensitive to the difference between structural and inherent case on a goal. Since the  $\varphi$ -features of anaphors are by default interpretable, there is no requirement to check an uninterpretable  $\varphi$ -feature here. Therefore, both structural and inherent case-bearing DPs

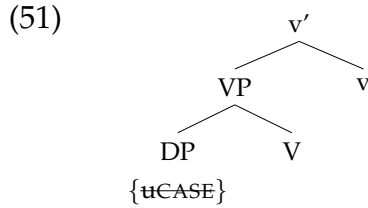
<sup>16</sup>There have been various proposals in the literature to account for this case distinction including the Activity Condition (Chomsky 2001), functional shells (Butt and King 2004; Spencer 2005; Rezac 2008), case-discriminating  $\varphi$  probes (Bobaljik 2008; Preminger 2014). The checking requirement in (46a) captures not only the difference between structural and inherent cases of goal but also between probes of functional heads and anaphors.

<sup>17</sup>See [Tucker \(2010\)](#), who also notes the same problem.

can have different  $\varphi$ -values for an agreement inflection and an anaphor.

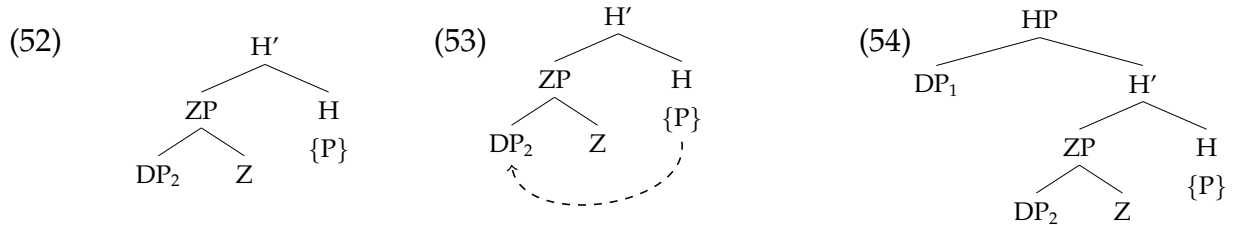
#### 4.1.3 Nature of case

While Chomsky (2000) views case assignment as a by-product of Agree, there are other approaches like Bhatt (2005), where case assignment is dissociated from Agree. In addition, there are also configurational approaches such as Dependent Case (Marantz 1991; McFadden 2004; Preminger 2011, 2014; Baker 2015). In principle, all of these approaches are compatible with my analysis but for the sake of concreteness, I assume an approach very similar one to Bhatt (2005), where case is dissociated from Agree. Furthermore, I assume that DPs with structural cases like nominative and accusative enter the derivation with an uninterpretable case feature  $\{uCASE\}$  and this feature is checked by the c-commanding functional head provided other standard locality conditions are met. As shown in (51),  $v$  can check the  $\{uCASE\}$  of DP and it is not necessary for the DP and the functional head to be involved in Agree operation.<sup>18</sup>



#### 4.1.4 Earliness Principle

One last assumption needed for the analysis is the Earliness Principle (Pesetsky 1989; Chomsky 2000; Pesetsky and Torrego 2001; Collins 2003). According to this principle, Agree between a probe and a goal should happen as soon as possible. In fact, Keine and Dash (2018) note that in many Cyclic Agree approaches (e.g. Rezac 2003; Béjar and Rezac 2009; Carstens 2016), the cyclicity itself is derived from the basic structure building operation, which is subject to the Earliness Principle.<sup>19</sup> In order to illustrate how this effect comes about, let us consider the structures in (52)-(54), where P is the probe in the head H and DP<sub>2</sub> and DP<sub>1</sub> are potential goals.



<sup>18</sup>Since case checking can happen independent of Agree, the DP in (51) can be any structural case and in effect, there is no link between a particular functional head to a particular case feature.

<sup>19</sup>One further qualification about the Earliness Principle noted by Keine and Dash (2018) is that its effects can be derived from Preminger's (2014) obligatory operations model in combination with cyclic structure building (Chomsky 1995).

From the base structure in (52), the subsequent operations may involve either Agree between H and DP<sub>2</sub> as in (53) or merging the DP<sub>1</sub> in the specifier of H as in (54). The Earliness Principle forces Agree in (53) before Merge in (54). In effect, this principle prevents DP<sub>2</sub> and DP<sub>1</sub> from both being suitable matches for the probe P at the same time, since Agree between P and DP<sub>2</sub> is possible before DP<sub>1</sub> is merged. Therefore, the Earliness Principle allows for expansion of the search domain of a probe P to include DP<sub>1</sub> just in case DP<sub>2</sub> is not a possible goal for P.

Having elaborated on all the assumptions that are needed for the analysis, in what follows, I will derive the difference between the AAE-respecting and AAE-violating languages discussed in Section 2 and 3.

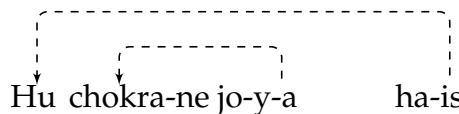
## 4.2 Derivations

### 4.2.1 Deriving agreement switch in Kutchi Gujarati

In section 2.1, we have seen from Patel-Grosz's (2014) analysis that whenever the anaphor occurs in an agreement-controlling position in Kutchi Gujarati,  $\varphi$ -agreement switches its target to the subject.

- (55)  John<sub>i</sub> potha<sub>i</sub>-ne jo-y-o  
 John REFL-ACC see-PERF-MSG  
 'John<sub>i</sub> saw himself<sub>i</sub>.'  
 (Patel-Grosz 2014:4 (9))

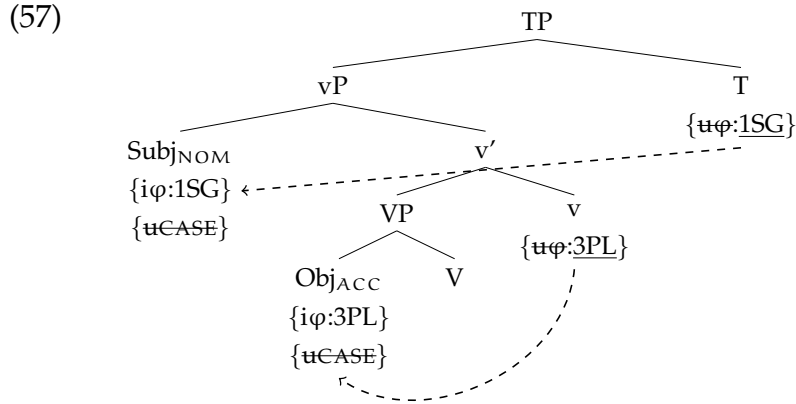
Before going into detail about how this agreement pattern is derived, it is important to establish what the agreement probes are in this language and what they agree with. In the examples that we have seen so far in Kutchi Gujarati, the set of agreement values on the verb seem to track only one argument. However, Grosz and Patel-Grosz (2014) give an example from future perfect tense in Kutchi Gujarati, where two different sets of agreement values, each corresponding to the different arguments, surface on the verb and the auxiliary respectively. As shown in (56), the auxiliary verb agrees with the subject and the perfective verb agrees with the object.

- (56)  Hu chokra-ne jo-y-a ha-is  
 1SG boys-ACC see-PERF-PL AUX-FUT.1SG  
 'I will have seen the boys.'  
 (Grosz and Patel-Grosz 2014:11 (9b))

Given this nested pattern of agreement, Grosz and Patel-Grosz (2014) propose that there are two different agreement probes in Kutchi Gujarati, where T agrees with the subject

and *v* agrees with the object irrespective of whether they surface overtly or not.

To derive agreement in sentences like (56), I assume that the probes on *T* and *v* enter the derivation with uninterpretable and unvalued features  $\{u\phi: \_ \}$ . As shown in the structure in (57), *v* agrees with the object, which has the interpretable and valued feature  $\{i\phi: 3PL\}$ . Similarly *T* agrees with the subject that also has the interpretable and valued feature  $\{i\phi: 1SG\}$ . As a result of these Agree operations, both *T* and *v* have their  $\phi$ -features checked and valued. Along with this Agree operation, since the subject and object bear structural case, their  $\{uCASE\}$  features are independently checked by *T* and *v*.



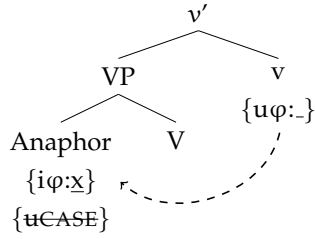
The structure above obeys the standard conditions on locality and therefore the derivation is straightforward. However, for the sentence involving an anaphor in object position as in (55), the agreement switch would come about as result of cyclic expansion. The derivation is enumerated in the steps below.<sup>20</sup>

Step 1: In the first step of the derivation, the anaphor enters the derivation with  $\{i\phi: x\}$  and  $\{uCASE\}$ . Once the VP is built, *v* is merged with  $\{u\phi: \_ \}$  features.

Step 2: In accordance with the Earliness Principle, the  $\{u\phi: \_ \}$  features of *v* probe down to agree with the anaphor as shown in (58). However, the anaphor does not have all the  $\phi$ -feature values required by the probe. Therefore, given the match failure condition in (46b), the anaphor cannot act as a suitable match and consequently, Agree fails at this point in the derivation. Despite failed Agree, the anaphor's  $\{uCASE\}$  feature is checked, since case checking happens independent of Agree.

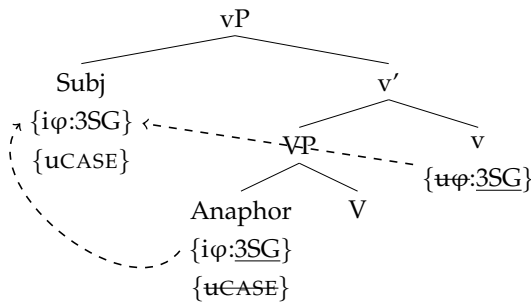
<sup>20</sup>Patel-Grosz's (2014) analysis has a similar analysis, where she derives the first conjunct agreement that obtains as a result of agreement switch. See Murugesan and Raynaud (to appear) for a different analysis of the same phenomena.

(58)



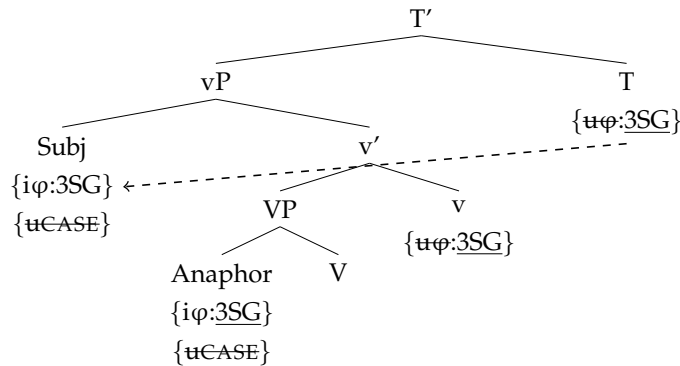
Step 3: In the following step of the derivation in (59), when the subject is merged in the structure, the search domain of the probe on v undergoes cyclic expansion to include the subject. Since the subject fulfills the match conditions in (42) under the cyclic expansion, v successfully undergoes Agree with the subject, where the probe's uninterpretable features are checked and unvalued features are valued. Furthermore, the anaphor in the object position also undergoes Agree with the subject and as a result, the partially-filled  $\phi$ -values of anaphor become fully valued.

(59)



Step 4: In the final step in the derivation, T enters the structure with  $\{u\phi:-\}$  feature and undergoes Agree with the subject. In addition, it also checks the  $\{uCASE\}$  feature of the subject as shown in (60).

(60)



The important thing to be noted from these derivational steps is that the agreement probe v that seeks to agree with the anaphor is introduced into the structure below the an-



tedent (the subject). Consequently, when *v* agrees with the anaphor in (58), the anaphor does not have any  $\varphi$ -features to control agreement. The failed valuation results in agreement switch as a repair. This derivation conforms to the Pattern A (repeated as (61)), where the AAE holds.

(61) Pattern A: Agr probe  $\succ$  Antecedent  $\rightarrow$  AAE holds

#### 4.2.2 Deriving default agreement in Shona

We have already seen in section 2.2 that Shona marks both its subject and object with class covarying subject and object markers.

- (62) a. Mufaro a- $\emptyset$ -ri-bik-a bota  
 Mufaro.1 SM.1-PST-OM.5-cook-FV porridge.5  
 ‘Mufaro cooked porridge.’ (Storoshenko 2016:161 (5))
- b. ndi-nó-mù-kúmbír-á  
 1SG.SM-PRES-3SG.OM-ask-FV  
 ‘I ask him.’ (Fortune 1984:87)

Slightly differing from Storoshenko’s (2016) information structure characterization of Shona agreement, I provide three pieces of evidence in order to show that *T* and *v* are the relevant functional heads in Shona that undergo agreement with the subject and the object respectively.

The first piece of evidence comes from the general morphological template of Bantu languages as given in (63). In this template, the inflectional affixes occur as prefixes and the derivational affixes occur as suffixes to the main verbal root (Stump 1997).

(63) NEG-SM-TENSE-ASPECT-OM-VERB-CAUS-APPL-FV

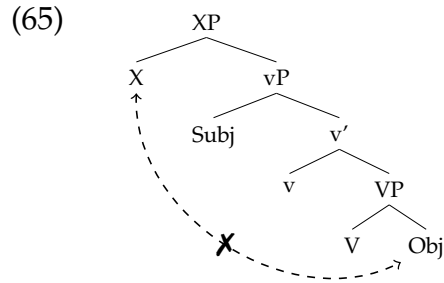
If we consider the relative order of the inflectional prefixes in (63), SM is prefixed to the tense and OM is prefixed to the verb. Given the Mirror Principle (Baker 1985), it is reasonable to posit that object agreement is lower than *T* (i.e. in *v*) and subject agreement to be at least as high as tense.

The second piece of evidence comes from the infinitival clause in Shona (64) where there is only object agreement.

- (64) ku-mú-vérénga-er-a  
 INF-OM-read-APPL-FV  
 ‘to read to him.’ (Julien 2002:197 (18))

The presence of object agreement in (64) suggests that agreement is triggered not by the

functional head T because it is non-finite. Therefore, object agreement can only come from a lower functional head like v. The third piece of evidence comes from minimality effects. The functional head that seeks to agree with the object has to necessarily be located below the subject, when the subject is also a suitable goal as in the case of the simple finite clause in (62). This is because an object agreement probe above the subject would have to skip the intervening subject, which leads to a minimality violation as in (65).



Having T as the locus of the subject agreement and v as the locus of the object agreement will give us a desired result for the derivation involving anaphors. We have already seen in Shona that with an anaphoric object, the class 8 marker *-zvi-* occurs in the object agreement slot as default agreement.

(66) ndi-a-**zví**-kudz-á  
1SG.SM-PST-OM-pride-FV  
'I praised myself.'

(67) v-á-**zvi**-kudz-á  
3PL.SM-PST-OM-praise-FV  
'They praised them (Solve 1984:89)

(68) John a-ka-**zvi**-pis-a  
John 3SG.SM-PST-OM-burn-FV  
'John burned himself'

(Storoshenko 2016:157 (1a))

The derivation that results in default agreement with anaphors is enumerated in the steps below.<sup>21</sup>

Step 1: In the first step in the derivation, the anaphor is merged with the features  $\{i\varphi:\underline{x}\}$  and  $\{uCASE\}$ . The derivation is built bottom-up and once the VP is built, v is merged with the features  $\{u\varphi:_\cdot\}$ .

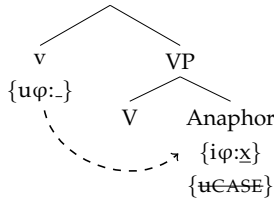
Step 2: In accordance with the Earliness Principle, the  $\{u\varphi:_\cdot\}$  feature from v probes down to establish Agree with the anaphor as shown in (69). Since the anaphor does not have the full set of  $\varphi$ -features, the anaphor cannot be a suitable match for Agree given the match failure condition in (46b). Therefore, Agree cannot happen at this point in the derivation.

<sup>21</sup>See Tucker (2010) for a similar type of analysis based on Downward Agree (Chomsky 2000, 2001) approach.

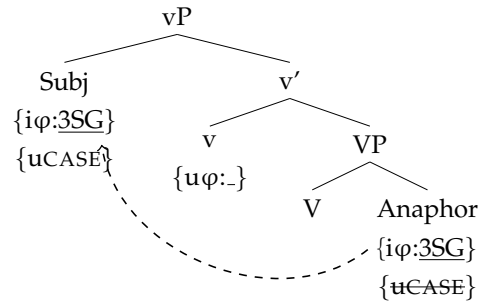
However, {uCASE} feature of the anaphor is independently checked by virtue of being c-commanded by v.

Step 3: In the next step in the derivation, shown in (70), the subject is merged in Spec-vP with the features {iφ:3SG} and {uCASE}. This allows the anaphor to receive a value for its unvalued features from the subject.

(69)



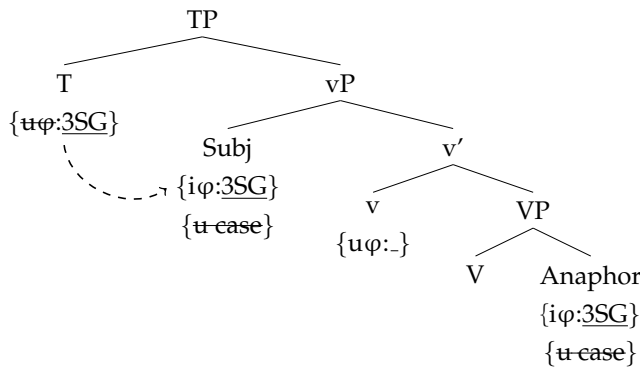
(70)



When it comes to the uninterpretable and unvalued features of v, which are still unchecked and unvalued, v does not undergo cyclic expansion to establish Agree with the subject but instead realizes the absence of φ-feature values as default agreement (Preminger 2014).

Step 4: Finally, when T enters the structure with {uφ:-} features, it undergoes Agree with the subject. In addition, T also checks the {uCASE} feature of the subject.

(71)



Though this gives the desired result, the question that remains is why the unvalued feature of v in Shona is realized as default agreement when it could potentially agree with the subject similar to Kutchi Gujarati. In other words, why do we not find cyclic expansion in Shona? To answer this question, I follow Béjar and Rezac (2009), who distinguish probes in Basque-type languages and Swahili-type languages. In Basque, the probes are more fully articulated, where they can only be satisfied by 1st or 2nd person arguments but not by the 3rd person argument. As a result, if the probe encounters a 3rd person argument in object position, it still agrees with 1st person subject (72). On the other hand,

probes in Swahili are not articulated, and therefore, undergo Agree with an object of any person value (73), where the object marker *ki* agrees with the object for the noun class 7 and not with the 1st person subject.

- |  |  |
|--|--|
| <p>(72)    <i>ikusi n.u-en</i><br/>                 seen 1-HAVE-PST<br/>                 ‘I saw him’<br/> <i>Basque</i> (Béjar and Rezac 2009: 37<br/>                 (2d))</p> | <p>(73)    <i>si-ja-ki-ona    chochote</i><br/>                 1.SG-NEG-7-see anything<br/>                 ‘I have not seen anything’<br/> <i>Swahili</i> (Béjar and Rezac 2009: 44<br/>                 (10))<br/>                 (Wald 1979; Morimoto 2002)</p> |
|--|--|

Given this difference in the relativized nature of probes, I assume that Kutchi Gujarati belongs to Basque-type languages that have articulated probes, which can trigger second cycle Agree. Shona belongs to Swahili-type languages that do not have articulated probes and therefore do not undergo the second cycle Agree.<sup>22</sup> However, both agreement switch and default agreement come about as the result of a Pattern A derivational order, where Agree with the anaphor fails, therefore resulting in the AAE.

#### 4.2.3 *Deriving the AAE violation in Tamil*

As we saw in section 3.1, Tamil seems to have just one set of agreement values that occur as suffixes after the tense morpheme. This fact suggests that there is just one agreement probe on T and it can be further confirmed by enriching the verbal complex to include

<sup>22</sup>In Shona, the features of *v* have to be satisfied so that they do not seek to probe upwards in order to get a value from the subject. It should however be noted that even though *v* fails to be valued by the anaphor, it can still have its uninterpretable feature checked. Therefore, I assume that *v* is satisfied by the mere checking relation since failed valuation has an option at a later stage to be interpreted as default agreement. If failed valuation is interpreted as default agreement, then we would expect the default agreement to show up not just with anaphors but also in other cases where there is no suitable goal to value the probe’s features. This prediction is confirmed, as we have already seen in section 2.1, the same class 8 marker *zvi-* surfaces as default agreement even when the object is a conjunct DP consisting of nouns belonging to different noun classes. Similarly, the same morpheme occurs in the subject agreement slot, when the subject is not a proper DP but rather a clause. The relevant examples are repeated below.

- |  |  |
|--|--|
| <p>(i)    <i>nda-ö-zvi-tor-a</i>                    [sadza no-mu-riwo]<br/>             SM.1.SG-PST-OM.8-take-FV Sadza.5 and-3-relish<br/>             ‘I took them (sadza and relish).’</p> | <p>(ii)    [Ku-tsav-ir-a                    mu-mba ma-zuva e-se]    zva-ka-kosh-a<br/>             INF-sweep-APPL-FV house    day            every SM.8-RPST-important-FV<br/>             ‘Sweeping the house every day was important.’</p> |
|--|--|
- (Storoshenko 2016:17 (22))

Given this ready-made means to interpret the checked and unvalued features of the probe, where the absence of a feature by itself corresponds to a class 8 marker, Shona realizes default agreement. In the absence of any such means, the checked and unvalued features of the probe in Kutchi Gujarati resort to agreement switch.

aspectual elements. As shown in (74), the perfective verb appears in a bare form and the agreement value occurs only as a suffix to the tense marker on the auxiliary.

- (74) a. Kohli Meena.v-ai paartu kond-iru-nt-aan  
 Kohli(M).NOM Meena(F)-ACC see.PERF VOICE-BE-PST-3SGM  
 'Kohli had been seeing Meena.'
- b. Meena-ukku Kohli kidaitu kond-iru-nt-aan  
 Meena(F)-DAT Kohli(M).NOM get.PERF VOICE-BE-PST-3SGM  
 'Meena had been getting Kohli.'

If *v* were also an agreement probe, then we would expect for the perfective verb to exhibit agreement as we have seen in Kutchi Gujarati. The fact that there is no agreement value on the perfective verb might suggest that *T* is the only agreement probe in the language. Further evidence for this can also be found in a construction that involves certain indefinite interpretations of the object, in which case the accusative case of the object can be optionally dropped. In (75), it is possible to have two unmarked arguments in a sentence. However, even in such cases, there is no object agreement on the verb. All these facts suggest that *T* is the only agreement probe in the language.

- (75) Kohli idli sapittu kond-iru-nt-aan  
 Kohli(M).NOM idli(N) eat.PERF VOICE-BE-PST-3SGM  
 'Kohli had been eating idli'

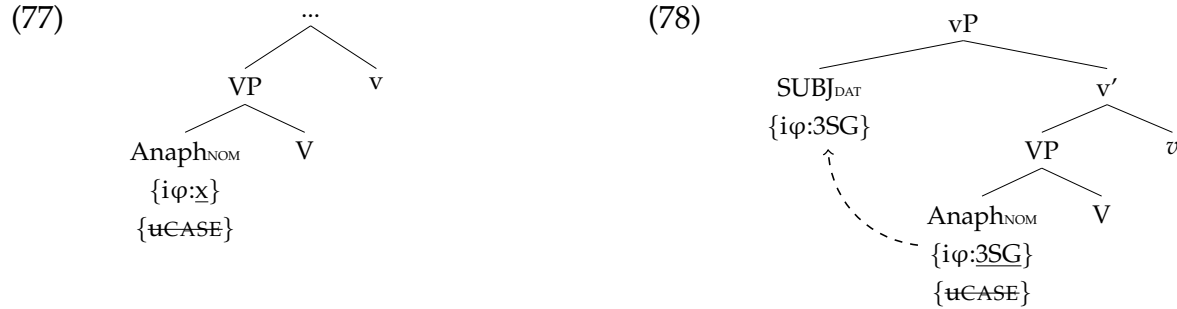
Having established that there is just one agreement probe on *T*, I will now turn to the AAE facts in Tamil, where I have already shown that it is the anaphor *taan* that controls agreement, especially when the anaphor occurs as a nominative object under the dative subject. The relevant examples are repeated below.

- (76) a. Kohli<sub>i</sub>-ukku taan<sub>i</sub> tirumba kidai-t-aan  
 Kohli(M)-DAT REFL.NOM again get-PST-3SGM  
 'Kohli<sub>i</sub> got himself<sub>i</sub> back again.'
- b. Meena<sub>i</sub>-ukku taan<sub>i</sub> tirumba kidai-t-aal  
 Meena(F)-DAT REFL.NOM again get-PST-3SGF  
 'Meena<sub>i</sub> got herself<sub>i</sub> back again.'

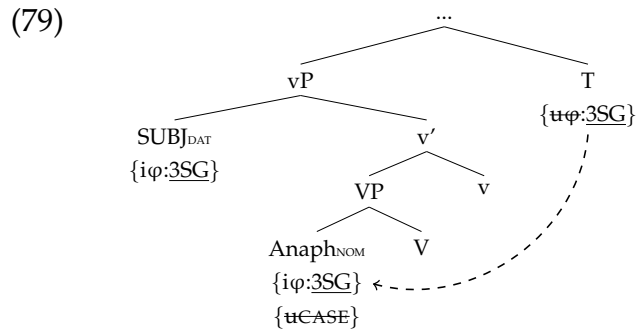
The derivation that results in the anaphor controlling agreement are enumerated in the steps below.

Step 1: In the first step of the derivation, the anaphor is merged with  $\{i\varphi:\underline{x}\}$  and  $\{uCASE\}$  features. The derivation is built bottom-up and when *v* enters the derivation, there is no Agree established between *v* and anaphor because *v* is not a probe in Tamil. However, *v* checks the  $\{uCASE\}$  feature of the anaphor as shown in (77).

Step 2: When the derivation is built up to the vP, the dative subject is merged with  $\{i\phi:3SG\}$  features.<sup>23</sup> Now, given the Earliness Principle, the unvalued feature of the anaphor probes upwards in order to have its features valued from the subject as shown in (78).



Step 3: Finally, when T is merged bearing  $\{u\phi:_\}$  features, it searches in its c-command domain to find a suitable goal for Agree. Although, the dative subject is the closest c-commanding goal for T, the dative case, being an inherent case, cannot check the uninterpretable  $\phi$ -feature of T and therefore, the dative subject is not a suitable match for T according to the match failure condition in (46a). Subsequently, T probes down to establish an Agree relation with the anaphor. Since the anaphor has already acquired its features in the step 2, it can act as a suitable match as it fulfills the match condition in (42). Thus, the anaphor checks and values the uninterpretable and unvalued features of T as shown in (79).



In this derivation, the anaphor can undergo Agree with the dative subject because the  $\phi$ -features of the anaphor are interpretable and consequently, there is no checking requirement. On the other hand, T cannot undergo Agree with the dative subject because the  $\phi$ -features of T are uninterpretable and need to be checked. The dative subject, bearing inherent case, cannot check the uninterpretable feature. Thus, T cannot agree with the

<sup>23</sup>Since dative case is not a structural case, it does not have a  $\{uCASE\}$  feature.

dative subject but anaphor can.

Now coming back to the derivational steps in (77) to (79), an important thing to be noted is that the subject DP that act as the antecedent to the anaphor is merged before the functional head T agrees with the anaphor. As a result of this order, the anaphor will have already acquired the necessary  $\varphi$ -features to control agreement when T probes. This order conforms to the Pattern B (repeated as (80) below), which derives a violation of the AAE.

(80) Pattern B: Antecedent  $\succ$  Agr probe  $\rightarrow$  AAE violation

#### 4.2.4 Deriving the AAE violation in standard Gujarati

The agreement facts in standard Gujarati can be compared with that of Kutchi Gujarati as they both are closely related languages. In deriving the AAE facts in Kutchi Gujarati, we established that there are two different agreement relations in the language, where T agrees with the subject and v agrees with the object. The evidence for this analysis came from the future perfect tense in Kutchi Gujarati that exhibited a nested pattern of agreement, where the auxiliary agrees with the subject and the perfective verb agrees with the object.

(81)   
Hu chokra-ne jo-y-a ha-is  
1SG boys-ACC see-PERF-PL AUX-FUT.1SG  
'I will have seen the boys.' Kutchi Gujarati (Grosz and Patel-Grosz 2014:11 (9b))

If we compare (81) with a similar construction in standard Gujarati, it can be shown that there is no nested pattern of agreement because the auxiliary does not agree with the subject but instead agrees with the object together with the perfective verb (82).

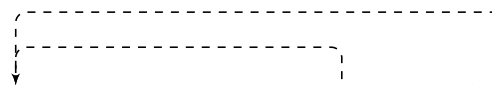
(82)   
mene chokra-ne jo-y-a ha-se  
I-ERG boys-DOM see-PERF-PL AUX-FUT.3  
'I will have seen the boys' Gujarati (Kinjal Joshi p.c.)

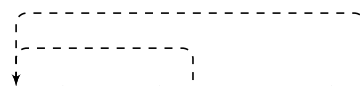
In fact, it is always the case in standard Gujarati that both the verb and the auxiliary agree with one and the same argument. As shown in (82), when the subject is ergative, both the verb and the auxiliary agree with the object. In the imperfective aspect, when the subject is nominative, both the verb and auxiliary agree with the subject as in (83).



- (83) hū            kɛr.i-ne            kap.ū    ch.ū  
 1SG.NOM mango(F)-ACC eat.1SG be.PRES.1SG  
 'I am eating a mango.'  
 (Suthar 2005:2 (3))

These agreement facts in Gujarati are very similar to those reported for Hindi in Bhatt (2005), where agreement is with the highest unmarked argument and both the verb and the auxiliary agree with the same argument (84) and (85).

- (84)   
 Rahul    kitaab    parh-taa            thaa  
 Rahul(M) book(F) read-HAB-MSG be.PST.MSG  
 'Rahul used to read the book.'  
 Hindi (Bhatt 2005:759 (2a))

- (85)   
 Rahul-ne            kitaab    parh-ii            th-ii  
 Rahul(M)-ERG book(F) read-PERF.FSG BE-PST-FSG  
 'Rahul had read the book.'  
 Hindi (Bhatt 2005:759 (2b))

Bhatt (2005) models this agreement in Hindi by having just one agreement probe on T that tries to agree with the subject. When the subject bears the ergative case, T agrees with the object. Though *v* by itself is not a probe, Bhatt treats the agreement value on *v* as *parasitic agreement* as a consequence of T agreeing with the object.

Following Bhatt, if we assume that standard Gujarati also involves just one agreement probe on T and the agreement value on *v* is just parasitic agreement, then we can account for the AAE violation in standard Gujarati in the same way as we did for Tamil. The relevant AAE examples from standard Gujarati, where the anaphor *potaa* controls  $\phi$ -covarying agreement on the verb, are repeated below in (86).

- (86) a. Raaje<sub>i</sub>            potaa<sub>i</sub>-ne    sandov-yo  
 Raj(M)-ERG REFL-DOM involved-MSG  
 'Raj<sub>i</sub> involved self<sub>i</sub>.'  
 b. Sudhaa<sub>i</sub>-e            potaa<sub>i</sub>-ne    sando-vi  
 Sudha(F)-ERG REFL-DOM involved-FSG  
 'Sudha<sub>i</sub> involved self<sub>i</sub>.'  
 (Mistry 2000:344 (19))

The derivational steps indicating how the anaphor comes to control agreement will also proceed along the same lines as we have already seen for Tamil. Since the agreement probe on T is merged after the subject, the anaphor will have been part of an Agree relation with the subject before it undergoes Agree with T. Therefore, the anaphor will have already acquired the  $\phi$ -features by the time it enters into an Agree relation with T. Thus,

it becomes possible for the anaphor to control the agreement in standard Gujarati. This is another example of Pattern B.

#### 4.2.5 Deriving the AAE violation in Ingush and Archi

Finally, let us consider how to derive the AAE violations in Ingush and Archi. As we did for Tamil and standard Gujarati, we need to establish how many agreement probes are there in these languages and what they agree with. The analytic tense in Kutchi Gujarati exhibits two different agreement values on the verb and the auxiliary and this suggested that there are two different probes in the language. The similar constructions in Tamil and standard Gujarati showed just one set of values on both the verb and the auxiliary, and this suggests that there is only one agreement probe in these languages too. The same analytic tense in Ingush (87) and Archi (88) patterns with Tamil and standard Gujarati by having just one set of values on both on the verb and the auxiliary.

- (87) aaz      gazat      dieshazh dy  
 1SG.ERG newspaper(D).ABS D.read D.PROG  
 'I am reading a newspaper.'  
*Ingush* (Nichols 2011:49 (168))
- 

- (88) laha-s      dija      w-ak:u-r-ši      w-i  
 child(II).SG.OBL-DAT father(I).SG.ABS I.SG-see-IMPERF-CVB I.SG-BE.PRES  
 'A girl sees (her) father.'  
*Archi* (Chumakina and Bond 2016:92 (30))
- 

These facts again support that there is only one agreement probe on T that establishes an Agree relation with the object.<sup>24</sup> As a result, in an example involving anaphors, it is the subject that is merged before the agreement probe T, giving rise to a Pattern B order. As expected, the anaphor indeed controls agreement.

To sum up this section, we have seen that all those languages that violate the AAE conform to Pattern B derivational order and all those languages that follow the AAE

<sup>24</sup>Rudnev (2020) criticizes the present analysis on the basis of biabsolutive constructions in Nakh-Dagestanian languages, which in fact exhibit two different sets of agreement values on the verb and on the auxiliary and it seem to go against the stated conclusion about Archi that T is the only probe.

- (i) laha-s      dija      w-ak:u-r-ši      d-i  
 child(II).SG.OBL-DAT father(I).SG.ABS I.SG-see-IMPERF-CVB II.SG-BE.PRES  
 'A girl sees (her) father.'  
*Archi* (Chumakina and Bond 2016:92 (30))

However, Gagliardi et al. (2014) provide numerous arguments that biabsolutives involve either restructuring or biclausal structures. On both the restructuring and biclausal analyses, the exceptional occurrence of two probes is not surprising, however it is not indicative of the general case in the language.

conform to the Pattern A derivational order and this is exactly what is predicted from the proposal.

### 5. Further Consequences

In the last section, I have shown that the Anaphor Agreement Effect and its violations are simply the predicted outcome of derivational timing. Accordingly, the Pattern A predicts the AAE and the Pattern B predicts AAE violations.

- (89)    a.    Pattern A: Agr probe  $\succ$  Antecedent  $\rightarrow$  AAE holds  
           b.    Pattern B: Antecedent  $\succ$  Agr probe  $\rightarrow$  AAE violation

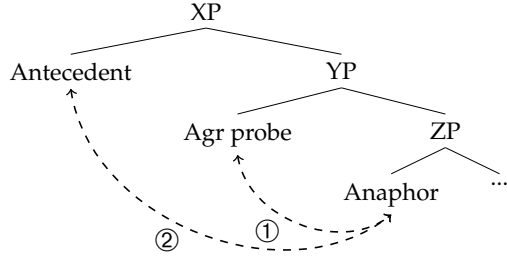
Given the Earliness Principle, Pattern A should necessarily be the pattern where the AAE is expected to hold without any exceptions and similarly, Pattern B should be the pattern where the AAE is expected to be violated. If we were to find languages where the opposite was true, i.e. where the AAE is violated in Pattern A and the AAE holds in Pattern B, then such an outcome would falsify my proposal. I will refer to these two problematic orders as Pattern  $\bar{A}$  (90a) and Pattern  $\bar{B}$  (90b).

- (90)    a.    Pattern  $\bar{A}$ : Agr probe  $\succ$  Antecedent  $\rightarrow$  AAE violation  
           b.    Pattern  $\bar{B}$ : Antecedent  $\succ$  Agr probe  $\rightarrow$  AAE holds

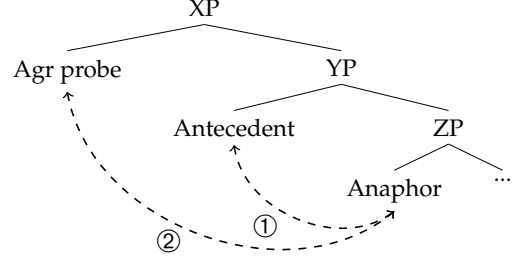
In the Pattern  $\bar{A}$ , as illustrated in (91), Agree between the Agr probe and the anaphor precedes Agree between the anaphor and its antecedent. In the former Agree relation, the anaphor would not have any features to value the Agr probe's features and therefore would not be able to control agreement. However, even in this order, if we found a language in which the anaphor still manages to control agreement, then it would be problematic for my analysis.

Similarly, in the Pattern  $\bar{B}$ , as illustrated in (92), Agree between the anaphor and the antecedent precedes Agree between Agr probe and the anaphor. In the former Agree relation, the anaphor would have acquired the features values from its antecedent and can therefore control agreement. However, if it were possible to find a language with this order where the anaphor does not control agreement, then it would again pose a challenge to the proposed analysis.

(91) Pattern  $\bar{A}$ :



(92) Pattern  $\bar{B}$ :



Now the question at this point is whether or not there are languages which exhibit these problematic patterns. The answer is both yes and no and in this section, I will take up each of these patterns in turn.

### 5.1 Pattern $\bar{A}$

We have already seen in Tamil that the anaphor *taan* can occur as a nominative object. In addition, it can also function as a long distance anaphor, where it can be the subject of an embedded clause and can then refer to the matrix subject (93).

- (93) Banu<sub>i</sub> [taan<sub>i</sub> satat-ai sapi-t-aal-nu] so-n-aal  
 Banu(F) REFL rice-ACC eat-PST-3SGF say-PST-3FSG  
 'Banu<sub>i</sub> said that self<sub>i</sub> ate the rice.'

In the above sentence, the agreement inflection on the embedded verb is  $\phi$ -covarying and corresponds to the features of the matrix subject. However, locality constraints would prevent any sort of Agree relation between them. Therefore, the only candidate that is local and seems able to control agreement is the anaphor *taan*. If it turns out that it is indeed the anaphor that controls agreement, then (93) will correspond to Pattern  $\bar{A}$ . This is because, in the derivation of these sentences, the Agr probe in the embedded clause is merged much earlier than the antecedent in the matrix clause. However, agreement with the anaphor in the embedded clause is  $\phi$ -covarying resulting in the AAE violation and thereby, the derivational order of this sentence seems to conform to the Pattern  $\bar{A}$  (repeated as (94) below).

- (94) Pattern  $\bar{A}$ : Agr probe  $\succ$  Antecedent  $\rightarrow$  AAE violation

However, Sundaresan (2016, 2018) points out that in cases like (93), it is neither the anaphor nor its antecedent that controls the agreement on the embedded verb. In her analysis, the anaphor in (93) is in a perspective sensitive context, where the antecedent of

the anaphor always denotes an individual who holds a mental and spatio-temporal perspective relative to some minimal predication containing the anaphor. This perspectivity is syntactically-encoded by having a perspective phrase above the TP containing a null pronoun or *pro*. As such the source of agreement on the embedded verb is this *pro* (as shown in (95)), which is born with a full set of valued  $\phi$ -features.

- (95) Banu<sub>i</sub> [ *pro*<sub>i</sub> [TP taan<sub>i,\*j</sub> saatat-ai sapi-t-aal-nnu]] so-n-aal  
 Banu(F) *pro* REFL rice-ACC eat-PST-3SGF-COMP] say-PST-3FSG  
 ‘Banu<sub>i</sub> said that self<sub>i,\*j</sub> ate the rice.’

The main role of this *pro* is to facilitate a long-distance anaphoric relation between the anaphor and its antecedent at LF and the impression that the anaphor controls agreement is only incidental. One of the main pieces of evidence for the presence of *pro* comes from cases of indexical shift<sup>25</sup> such as (96), where the embedded verb exhibits 1SG agreement, even though neither the anaphor nor its antecedent is specified for the 1SG features.<sup>26</sup> Therefore, Sundaresan proposes that agreement is triggered by *pro*, which also entails that the shifted 1st-person indexical is *pro*.

- (96) Banu<sub>i</sub> [ *pro*<sub>i</sub> [TP taan<sub>i,\*j</sub> saatat-ai sapi-t-**een**-nu]] so-n-aal  
 Banu(F) *pro* REFL rice-ACC eat-PST-1SG-COMP] say-PST-3FSG  
 ‘Banu<sub>i</sub> said that self<sub>i,\*j</sub> ate the rice.’

If *pro* is the agreement controller (rather than the anaphor), the agreement configuration in (95) and (96) is parallel to the agreement switch strategy in Kutchi Gujarati, where the target of agreement is switched from the anaphor to the subject as in (55) (repeated as (97) below).

- (97) John<sub>i</sub> potha<sub>i</sub>-ne jo-y-o  
 John REFL-ACC see-PERF-MSG  
 ‘John<sub>i</sub> saw himself<sub>i</sub>.’

(Patel-Grosz 2014:4 (9))

Therefore, the derivation where *pro* controls the agreement would work along the same lines as we have seen for Kutchi Gujarati. The crucial derivational steps for sentences like

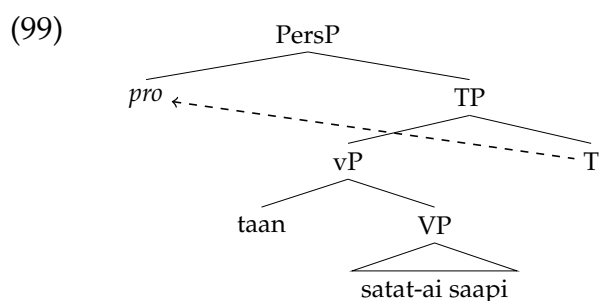
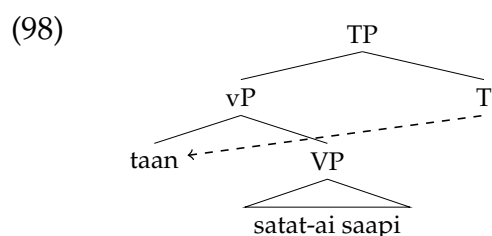
<sup>25</sup>Indexical shift refers to the cases, where the the 1st-person forms are evaluated against the speech index introduced by a selecting speech predicate, rather than against the utterance context (Schlenker 2003; Anand 2006).

<sup>26</sup>The anaphor *taan* can never take a 1st person antecedent and therefore, it cannot be the controller of 1SG agreement. Similarly, the antecedent that is specified for the 3rd person feature can also not control 1SG agreement.

(95) and (96) are enumerated below.

Step 1: The derivation is built bottom-up from the embedded clause and at a point in derivation where the embedded T is merged, as shown in (98), it probes down to establish Agree with the anaphor, which is in spec-vP. This Agree relation cannot be successful because the anaphor has not yet acquired value for its  $\varphi$ -features since its antecedent *pro* has not yet been merged.

Step 2: In the following steps in the derivation, when *pro* merges in the structure, the search domain of the probe from T undergoes cyclic expansion to include *pro*. Now T can successfully establish Agree with the *pro* as shown in (99).



Given this agreement configuration, examples with the long distance anaphor *taan* do not instantiate Pattern  $\bar{A}$  but rather Pattern A (repeated as (100) below), where the Agr probe T is introduced into the structure before its antecedent *pro* and as predicted, the AAE holds.

(100) Pattern A: Agr probe  $\succ$  Antecedent  $\rightarrow$  AAE holds

## 5.2 Pattern $\bar{B}$

In section 1, we have seen agreement facts in Icelandic where agreement is only with the nominative argument and can occur either as a subject or as an object. In both the cases, it can control agreement.

- (101) a. við lásu bókina  
 we.NOM read.1PL book.ACC  
 'We read the book.' (Sigurðsson 1996:6 (14a))
- b. Henni leiddust strákar  
 she.DAT bored.3PL boys.NOM  
 'She found the boys boring.' (Sigurðsson 1996:3 (1))

Now if we consider that there is only one agreement value on the verb and it consistently tracks the nominative argument, then it makes the case to view the functional head T as

the only agreement probe, which tries to agree with the subject. If the subject is marked with the dative case, then it agrees with the nominative object. When T seeks to agree with an anaphor in object position, it represents the derivational order in Pattern B and it is expected for anaphor to control the agreement. However, such a sentence with the anaphor in an agreement controlling position is ruled out as ungrammatical in Icelandic.

- (102) \*Konunum<sub>i</sub> leidust SIG<sub>i</sub>  
 Women.DAT bored.3PL REFL.NOM  
 ‘Women<sub>i</sub> were bored with themselves<sub>i</sub>’ (Halldór Sigurðsson p.c.)

The above case is an instance where the AAE actually holds and yet it is an order, where the antecedent is merged before the agreement probe. Therefore, Icelandic instantiates the Pattern  $\bar{B}$  (repeated as (103) below) derivational order.

- (103) *Pattern  $\bar{B}$ : Antecedent  $\succ$  Agr probe  $\rightarrow$  AAE holds*

The order of derivational steps in Pattern  $\bar{B}$  and its AAE outcome again poses a challenge to the proposed analysis. However, if we take a closer look at the reason for the ungrammaticality of (102), which is the anaphor apparently controlling agreement, then we would expect the same sentence to be grammatical when the agreement with the anaphor results in default agreement rather than  $\varphi$ -covarying agreement. However, such a sentence is still ruled out as ungrammatical as shown in (104).

- (104) \*Konunum<sub>i</sub> leiddist SIG<sub>i</sub>  
 Women.DAT bored.3SG REFL.NOM  
 ‘Women were bored with themselves’ (Halldór Sigurðsson p.c.)

This ungrammaticality is unexpected given the fact that Icelandic optionally allows default agreement with the nominative object as shown in (105).

- (105) Henni leiddist strákar  
 she.DAT bored.3SG boys.NOM  
 ‘She found the boys boring.’ (Sigurðsson 1996:20 (48a))

Therefore, it becomes clear that the ungrammaticality of (102) and (104) is not because of the presence or absence of agreement with the anaphor. Instead, what it seems to suggest is that it is actually the absence of a nominative form of the anaphor in Icelandic which is responsible for the ungrammaticality of these sentences.

Further evidence to show that it is the absence of a nominative anaphor that causes ungrammaticality comes from one of the types of infinitive constructions in Icelandic, which occurs as an embedded clause with a overt dative subject and a nominative object



as shown in (106).

- (106) Mér viðist [stráknum líka þessir bílar]  
 1SG.DAT seem.3SG boy.DAT like.INF these cars.NOM  
 'It seems to me that the boy likes these horses.' (Watanabe 1993:417 (5.29))

In the above sentence, the embedded verb *líka* 'to like', being an infinitive verb, never inflects for agreement and even in this type of infinitive construction, where there is no requirement for agreement, the nominative form of an anaphor is still ruled out (107).

- (107) \*Mér viðist [stráknum<sub>i</sub> líka SIG<sub>i</sub>]  
 1SG.DAT seem.3SG boy.DAT like.INF REFL.NOM  
 'It seems to me that the boy<sub>i</sub> likes himself<sub>i</sub>.' (Halldór Sigurðsson p.c.)

All these pieces of evidence points toward a gap in the case paradigm in the language, namely that it lacks the nominative form of an anaphor as illustrated in (108) (Maling 1984; Everaert 1991; Taraldsen 1995).

(108)

Case	Pronoun	Anaphor
Nom	hún	
Acc	hana	sig
Dat	henni	sér

Therefore, the independent absence of the nominative form of an anaphor in the language leads to an apparent Pattern B̄ effect in Icelandic rather than agreement with the anaphor.

## 6. Alternative approaches

### 6.1 Rizzi (1990)

Rizzi's (1990) own account to explain the AAE involves making use of the contrasting requirements of Principle A and Principle B of the Binding Theory. In this approach, Rizzi maintains the assumption prevalent in the GB framework that agreement morphemes are pronominal and are therefore subject to Principle B. The anaphor, as standardly assumed, is subject to Principle A. Accordingly, if a sentence has both an anaphor and agreement, then it leads to contrasting binding requirements, where the anaphor has to be bound within its local domain and the (pronominal) agreement should be free within its local domain. Since both of these conflicting requirements can never be simultaneously met, the anaphor can never control agreement.

Though this approach accounts for the AAE, it obviously cannot account for the AAE violations that we have seen in languages like Tamil, standard Gujarati, Archi and Ingush.

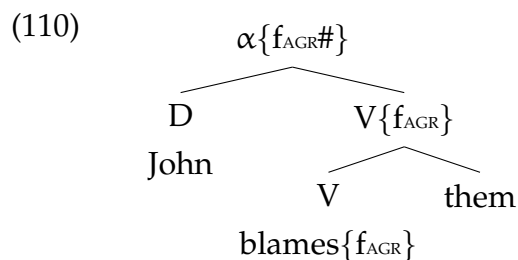
In these languages the anaphor can control agreement and thus, the contrasting binding requirements of Principle A and Principle B would have to be simultaneously met. This contradiction between the AAE following languages and the AAE violating languages with regard to the principles of the Binding Theory makes Rizzi's proposal untenable.<sup>27</sup>

## 6.2 Shiraki (2004) and Tucker (2010)

Following Neelman and Weerman's (1999) theory of argument marking, Shiraki (2004) offers an alternative explanation of the AAE. Neelman & Weerman's theory of argument marking has its roots in the GB tradition, where it is assumed that arguments need to be licensed in order to receive appropriate  $\theta$ -roles at LF. Nichols (1986) develops this idea by adding that argument licensing need not be uniform in that it can be licensed either by case or by an agreement. In the case of the sentence in (109), the subject *John* is not licensed by case but through its agreement relation with the verb. The object *them* is also licensed not by agreement but by accusative case.<sup>28</sup>

(109) John blames them.

For Shiraki, this licensing relation between the argument and the functional head either through agreement or case licensing is formally represented by a relation  $R$ . This relation  $R$  is encoded in syntax in terms of the projection and satisfaction of the function  $f$ . To illustrate how exactly this projection and satisfaction of function works, let us consider argument marking of the subject *John* in (109), whose formal syntactic representation is given in the structure in (110).



In the above structure, the verb *blame* would project its function  $\{f_{AGR}\}$  to its mother node and this function is recursively projected upward until it reaches the node which immediately dominates the subject *John* ( $\alpha$  in (110)). The function  $\{f_{AGR}\}$  is thereby satisfied at

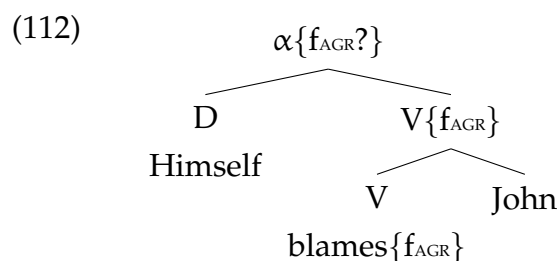
<sup>27</sup>In addition to the Binding Theory account, Rizzi (1990) had one more account based on referential hierarchy between anaphors, pronouns and R-expressions. However, this account also suffers the same problem as it cannot account for an AAE violation.

<sup>28</sup>In this theory, zero marking of nominative case is taken to be default case. This zero marking of nominative case cannot license the argument.

the  $\alpha$  node, which is marked by #. Since the function projected by the verb is satisfied by the subject, the subject is formally argument marked by the agreement. And when the argument is marked by the agreement, the relation R is obtained from the verb to the DP.

Shiraki derives the AAE in a similar way to argument marking. He assumes that anaphors lack the required  $\varphi$ -features to satisfy the function  $\{f_{AGR}\}$  of the verb and, as a result, the anaphor cannot control the agreement on the verb. To illustrate this, consider the example in (111), whose representation is given in (112).

(111) \*Himself<sub>i</sub> blames John<sub>i</sub>.



Assuming that the anaphor is in nominative case in (111), it needs to be argument marked by agreement. So when the  $\{f_{AGR}\}$  function projected from the verb moves to the  $\alpha$  node, it cannot be satisfied by the subject anaphor *himself* because the anaphor lacks  $\varphi$ -features. This failure to satisfy the function  $\{f_{AGR}\}$  leaves the subject anaphor without argument marking and as a result, the sentence is ruled out.

A general problem for the theory of argument marking is that it predicts that arguments should be licensed either by case or by agreement. However, if an argument is both case marked and undergoes agreement, then such an argument is argument-marked twice. This doubly argument-marked DP is an undesirable redundancy given general considerations of economy. As we have already seen the Kutchi Gujarati example in (7b) (repeated as (113) below), where it is the case marked object that controls agreement.

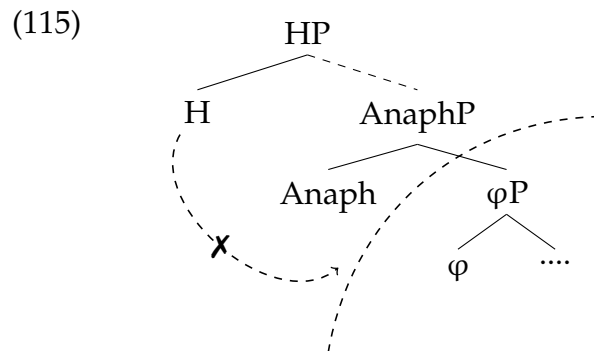
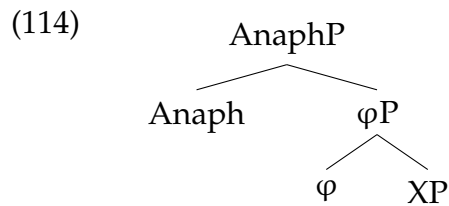
(113) Mary John-ne jo-y-o  
 Mary John-ACC see-PERF-MSG  
 'Mary saw John.'  
 (Patel-Grosz 2014:2 (2))

Apart from this general problem of the theory, Shiraki's specific implementation of the AAE, where it is posited that anaphors can never satisfy the function  $\{f_{AGR}\}$ , predicts that there should be no language with an anaphor controlling agreement on the verb, which may run into problems in the light of counter-examples to AAE. For these reasons, Argument marking is also not the right approach to give complete account of the AAE.

Another important contribution to the study of the AAE within the theory of Agree comes from [Tucker \(2010\)](#). At the outset, Tucker’s approach to deriving the AAE is very similar to the one that I have implemented for the derivation of default agreement in Shona in section 4.3. In fact, Tucker’s approach operates with the same intuition that the anaphor is something that lacks  $\varphi$ -features. In other words, the anaphor is itself a  $\varphi$ -probe which makes it impossible to value the unvalued features of an another probe. However, the main drawback of Tucker’s approach is that it fails to take into account of the larger empirical picture of the AAE. We have seen that the repair strategies that languages employ to overcome the violation of an AAE include not just default agreement but also agreement switch as in Kutchi Gujarati. In addition, we have seen data from languages that violate the AAE. Tucker’s approach falls short of accounting for these facts associated with the AAE.

### 6.3 Preminger (2019)

A recent proposal to account for the AAE is [Preminger \(2019\)](#), who argues against the timing based analysis and instead proposes an ‘encapsulation’ analysis. In this approach, Preminger begins with a basic assumption that anaphors are born with a full set of inherently-specified  $\varphi$ -features and they are hosted in a  $\varphi$ P projection as shown in (114). Given this structure, in the case of an agreement, when an external probe seeks to agree with the anaphor, Preminger proposes that there is additional AnaphP layer right above the  $\varphi$ P layer that prevents Agree as illustrated below.



There are certain problems with this approach and I will list two of them. The first one pertains to the assumption that anaphors are born with full set of inherently-specified  $\varphi$ -features. There are certain anaphors like Mandarin *ziji* that can be bound by an antecedent with any  $\varphi$ -values as shown in (116).<sup>29</sup>

<sup>29</sup>I would like to thank an anonymous reviewer for pointing out this to me.

- (116) a. Zhangsan renwei [wo<sub>i</sub>/ni<sub>j</sub> hai-le ziji<sub>i</sub>/j]  
 Zhangsan think I/you hurt-ASP REFL  
 'Zhangsan thought I/you hurt myself/yourself' (Sohng 2004:375(1))
- b. Wo renwei [women yinggai dui ziji you xinxin]  
 I think we should to self have confidence  
 'I think we should have confidence in ourselves'  
 (Huang and Tang 1991:264(2c))

It is therefore unclear how *ziji* would be handled in Preminger's approach. The preferable option in such case is to assume that *ziji* is underspecified for person, number and gender features.<sup>30</sup> This suggests that the  $\phi$ -features of anaphors are somehow defective compared to other types of nominals like pronouns and R-expressions. This makes Preminger's assumption regarding anaphors rather problematic.

The more serious problem is the second one, which has to do with the encapsulation part of his proposal. Even if we accept Preminger's proposal that anaphors contain an encapsulation layer, the question is how to then account for AAE violating languages. In such cases, the only option seems to be to let the encapsulation be parametrized such that those languages that follow the AAE have the encapsulation layer and those languages that violate the AAE do not. This is precisely what Preminger has concluded as well. Although this approach derives the AAE and the AAE violation, the lack of independent evidence to support for the presence or absence of encapsulation layer means that Preminger's theory does not provide any prediction about when the AAE holds and when it does not.<sup>31</sup>

In addition, I have shown that in Tamil, it is the same anaphor *taan* that controls agreement when it occurs in object position but not when it is in subject position. In Preminger's approach, an anaphor in a given language such as Tamil *taan* would have to be parametrized either with an encapsulation layer when it is a subject or without it when it is an object. We would therefore need a construction-specific parameter for encapsula-

<sup>30</sup>The other option is to posit that *ziji* is lexically specified for different sets of  $\phi$ -features but this would then lead to massive lexical redundancy.

<sup>31</sup>Another recent proposal that argues for Preminger's approach comes from Rudnev (2020), who also fails to provide independent evidence for the presence or absence of an encapsulation layer. In his analysis, Rudnev argues that Avar, a Northeast Caucasian language, instantiates an AAE violation with *v* being an only agreement probe in the language. However, it is not clear to me how this analysis would account for an Avar data (discussed in Rudnev (2015)) with both the verb and the auxiliary overtly realizing the agreement values (i). Therefore, I conclude that Rudnev's (2020) conclusion about *v* being the only probe in the language is premature.

(i) jacał t'ex c'al-ul-e-b b-ugo  
 girl.ERG book.ABS read-PRES-PTCP-N N-be.PRES  
 'The girl is reading a book' (Rudnev 2015:40 (57a))

tion even within a given language. Such a problem does not arise with the analysis I have presented here.

## 7. Conclusion

In this paper, I have established that there is a strong empirical evidence not just for the AAE but also for violations of it. These exceptions show Rizzi's (1990) initial claim that the AAE is a universal phenomenon to be too strong. Furthermore, to account for the differences between AAE respecting languages and AAE violating languages, I proposed a timing based derivational analysis that predicts both when the AAE holds and when it is violated. Accordingly, in a derivation, where the agreement probe is merged before the antecedent as in Pattern A, the system predicts the AAE to hold without any violation. In the other derivational order, where the antecedent is introduced before the agreement probe as in Pattern B, the system predicts the AAE to be violated.

- (117)    a.    Pattern A: Agr probe  $\succ$  Antecedent  $\rightarrow$  AAE holds  
           b.    Pattern B: Antecedent  $\succ$  Agr probe  $\rightarrow$  AAE violation

As predicted, those languages that respect the AAE like Shona and Kutchi Gujarati show the Pattern A derivational order with *v* agreeing with the anaphor in object position. When Agree happens, the antecedent is not yet present in the subject position. Therefore, the anaphor would not yet have any  $\varphi$ -features to control agreement. Failed Agree with the anaphor is repaired in at least two ways, by default agreement in Shona and agreement switch in Kutchi Gujarati.

On the other hand, when it comes to those languages that exhibit AAE violations like Tamil, standard Gujarati, Archi and Ingush, they all have the Pattern B derivational order in which *T* agrees with the anaphor in object position. When *T* is merged, the antecedent is already present in the structure. Therefore, the anaphor would have already undergone Agree with its antecedent and acquired its  $\varphi$ -features. Subsequently, when *T* agrees with the anaphor, the unvalued features of *T* can be successfully valued by the anaphor. Thus, whether or not a language is subject to the AAE or not follows entirely from independent properties of the language, that is, the position the Agr probe relative to the antecedent for the anaphor.

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