

# ANAPHORS AREN'T BORN EQUAL: DISTINCT CLASSES OF ANAPHOR WITHIN AN ENRICHED PERSON SYSTEM\*

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## 1 Overview

Standard theories classify PERSON into three categories: 1st, 2nd, and 3rd. The goal of this paper is to argue that this classification is not fine-grained enough to capture all the PERSON distinctions attested in language. We need (at least) six categories of PERSON, rather than the standard three. I will propose the categories for PERSON in Table 1.

Features	Category	Exponents
[+Author, +Addressee, anim]	1INCL.	<i>naam</i> (Tamil, 1INCL.PL)
[+Author, -Addressee, anim]	1EXCL.	<i>naanga</i> (Tamil, 1EXCL.PL)
[-Author, +Addressee, anim]	2	<i>you</i>
[-Author, -Addressee, anim]	3	<i>him, sie</i> (German), <i>si</i> (Italian)
[anim]	REFL	Anaphors in Bantu
∅	NULL	<i>ziji</i> (Chinese), <i>man</i> (German)

Table 1: Person Classification: [ $\pm$ Author], [ $\pm$ Addressee] & [Anim]

As per Table 1, there are *three* PERSON categories that are non-1st and non-2nd (i.e. non-Participant): namely, 3, NULL, and REFL. Similarly articulated PERSON-classifications have, indeed, been previously proposed (see e.g. Nevins, 2007, Anagnostopoulou, 2005 a.o.). The novel

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contribution of this paper is that it provides empirical support for such a feature system from a relatively untested empirical phenomenon, namely that of anaphora.

The motivation for such a classification comes from the following surprising observation: despite the wealth of generative work on anaphora (see e.g. Chomsky, 1981, Reinhart and Reuland, 1993, Sells, 1987, Hellan, 1988 a.o. in the GB era and, more recently in Minimalist work Reuland, 2001, 2011, Heinat, 2008, Kratzer, 2009, Hicks, 2009, Rooryck and vanden Wyngaerd, 2011), the question of *what* an anaphor is, formally speaking, still remains unresolved. Two broad approaches to this issue may be discerned: the  $\phi$ -deficiency view, under which anaphora is defined and driven by  $\phi$ -feature deficiency and what I'll call the *F*-deficiency view, whereby anaphora is defined and driven in terms of a deficiency of some other formal feature *F*, on the part of the nominal. Empirical evidence for the former comes from anaphor-antecedence  $\phi$ -matching, the Anaphor Agreement Effect (AAE), and the crosslinguistic morphological underspecification of anaphors for  $\phi$ -features; for the latter, from perspectival anaphora crosslinguistically, and from the sensitivity of anaphors to 1st, 2nd vs. 3rd PERSON-asymmetries for PCC, agreement, and anaphoric antecedence.

The upshot of such evidence is that we have two *mutually inconsistent but equally valid* views on anaphora. *No single anaphor* that can satisfy the criteria for both at the same time. I thus argue for resolution in terms of a unification, rather than an intersection, of the empirical properties of anaphors. I propose, in particular, that anaphors be classified into the distinct categories illustrated in Table 2.

Class	PERSON-Features	Exponents
3rd-anaphor	[-Author, -Addressee, Anim]	<i>taan</i> (Tamil), <i>zich(zelf)</i> (Dutch)
REFL	[Anim]	Bantu anaphors
NULL-anaphor	$\emptyset$	<i>ziji</i> (Chinese), <i>zibun</i> (Japanese)

Table 2: Three Classes of Anaphor

Running orthogonal to these is the class of perspectival anaphora, involving anaphors whose antecedence is regulated by perspective-holding with respect to some predication containing the anaphor (Sells, 1987, Kuno, 1987, Koopman and Sportiche, 1989, Giorgi, 2010, Sundaresan, 2012, Pearson, 2013, Nishigauchi, 2014, Charnavel, 2015).

## 2 The $\phi$ -deficiency View

The  $\phi$ -deficiency view of anaphora could be taken to be the predominant view in the Minimalist literature. An anaphor is assumed to be a nominal that lacks one or more  $\phi$ -features. Valuation of these  $\phi$ -features via Agree in “narrow” syntax, triggers binding at LF and anaphoric exponence at PF. Nevertheless, the different proposals that adopt this broad approach vary with respect to various other aspects of theoretical implementation and assumption. For instance, Kratzer (2009) proposes that all anaphors are “born minimal” with no (valued)  $\phi$ -features whatsoever; Reuland 2001, 2011, Rooryck and vanden Wyngaerd 2011 a.o., on the other hand, assume that anaphors may be born with some but not all  $\phi$ -features valued with the precise  $\phi$ -specification of an anaphor being parametrically specified. Proposals also vary with respect to their assumptions about the structural composition of the anaphor: e.g. Heinat (2008) argues that anaphors are structurally different from other nominals, and the nature of Agree for  $\phi$ -features: e.g. whether it is bi-directional as in Kratzer (2009) or strictly downward as in Heinat (2008).

The theoretical motivation for the  $\phi$ -deficiency approach may be traced back to the observation (e.g. Bouchard, 1984), that a nominal needs a full set of  $\phi$ -features to be LF-interpretable. As such, any nominal that lacks a full  $\phi$ -feature specification must get its missing  $\phi$ -features checked in syntax, on pain of being subsequently uninterpretable at LF. Such feature-checking would then feed anaphoric binding at LF, as discussed above. It is also economical in that it is built on the deficiency of features that are independently motivated in grammar. Such an approach thus avoids the inelegant pitfall of positing features that are peculiar to anaphors alone.

Empirical support for the  $\phi$ -deficiency view comes from a number of sources. I discuss these in detail below.

## 2.1 Anaphora and $\phi$ -matching

Anaphors must typically match their antecedents for  $\phi$ -features, a crosslinguistic tendency that has been explicitly noted as a required condition on binding in syntax textbooks and elsewhere (Sag et al., 2003, Carnie, 2007, Heim, 2008). Thus, (1) is ungrammatical because the anaphor has 1SG  $\phi$ -features which don't match the 3MSG features of its binder:

- (1) \*He<sub>i</sub> saw myself<sub>i</sub>.

Such  $\phi$ -matching seems to be a restriction on simplex anaphors as well, as illustrated by the ungrammaticality of the German counterpart to (1) in (2):

- (2) \*Er<sub>i</sub> sah mich<sub>i</sub>.

There are, of course, cases where no  $\phi$ -matching can be discerned, as in Albanian, Chinese, Yiddish or Russian. But what such examples show is the absence of overt  $\phi$ -matching, not the *presence* of overt *non*-matching which seems much less common. Under a  $\phi$ -deficiency approach, this tendency falls out for free. If an anaphor must have one or more unvalued  $\phi$ -features and anaphoric binding is triggered by the anaphor having its  $\phi$ -features valued, via Agree, then such  $\phi$ -matching is, indeed, precisely what is predicted.

## 2.2 Morphological Underspecification

Going by restrictions placed on their antecedence, a remarkable number of anaphors from a range of unrelated languages seem to fail to mark the full range of  $\phi$ -distinctions in the given language. The identity and range of these features seems to be parametrized. Thus, Korean *caki* and Dravidian *taan* are underspecified for gender alone; German *sich* and its other Germanic variants do for both gender and number; Japanese *zibun* is unmarked for PERSON and GENDER; and Chinese *ziji* seems to be maximally underspecified — i.e. for PERSON, NUMBER as well as GENDER. Under the  $\phi$ -deficiency view, these distinctions can be captured in one of two ways. Assuming that a bound variable starts out  $\phi$ -minimal (Kratzer, 2009), we could propose that an anaphor acquires all and only those  $\phi$ -features it actually surfaces with. Alternatively, morphological underspecification could simply be relegated to the morphological component, in particular to rules of exponence for the anaphors in question. Let us assume that the anaphor has all its  $\phi$ -features valued at the time of SpellOut.

### 2.3 Anaphor Agreement Effect (AAE)

The “Anaphor Agreement Effect (AAE)”, is the observation (Rizzi, 1990) and since revised in Woolford (1999), Tucker (2011), Sundaesan (2016). As an illustration, consider the Italian minimal pair below (Rizzi, 1990:Ex. (4) from p. 3):

- (3) A loro interest-ano solo i ragazzi.  
to them interest-3PL only the boys.NOM  
“They<sub>i</sub> are interested only in the boys<sub>i</sub>.”
- (4) \*A loro interest-ano solo se-stessi.  
to them interest-3PL only them-selves.NOM  
“They<sub>i</sub> are interested only in themselves<sub>i</sub>.” (Intended)

Italian has a nominative-accusative case system:  $\phi$ -agreement is triggered by a nominative argument. Thus, in (3), the nominative object *i ragazzi* triggers 3PL verbal agreement. However, when we replace this object with the anaphoric object *se stessi* in (4), we get ungrammaticality. In contrast, (5) (Rizzi, 1990:33), where the anaphor is genitive-marked and triggers no agreement, yielding default verbal agreement, is fully grammatical:

- (5) A loro import-a solo di se-stessi.  
to them matters-3SG only of them-selves  
“They<sub>i</sub> only matter to themselves<sub>i</sub>.”

A key difference between (4) and (5) is that the anaphor triggers verb agreement in the former, but doesn't do so in the latter. The grammaticality of these sentences seems to be directly conditioned by this contrast. Based on such patterns, Rizzi (1990), 28, proposed that “[T]here is a fundamental incompatibility between the property of being an anaphor and the property of being construed with agreement.” Subsequent research has uncovered a range of further data and language-specific strategies to avoid violating the AAE: e.g. the sentence crashes or the verb surfaces with default or “anaphoric” agreement or exceptionally some *other* agreement-controller is used in just this instance (Woolford, 1999, Tucker, 2011, Sundaesan, 2016).

The  $\phi$ -deficiency approach to anaphora gives us an initial handle on how to approach the AAE. If an anaphor were itself lacking in (some or more)  $\phi$ -features, then it would follow, that such an element could not then value the  $\phi$ -features on another  $\phi$ -deficient element, such as T (in the case of subject agreement) or *v* (in the case of object agreement) (as also argued in Kratzer, 2009).

To sum up, there are good theoretical and empirical arguments in favor of a  $\phi$ -deficiency approach to anaphoricity.

## 3 The *F*-deficiency View

The group of analyses that adopt this view have in common the idea that an anaphor is defined, not in terms of its lack of  $\phi$ -features, but by its being deficient for some other feature, *F*. As before, valuation for *F* triggers semantic binding and rules of Vocabulary Insertion for the elements in question, at PF.

The main theoretical issue with a  $\phi$ -deficiency approach to anaphora is that, while the  $\phi$ -features of a nominal restrict its domain of reference (in the evaluation context), they crucially don't exhaust it.  $\phi$ -features introduce presuppositions that restrict, via partial functions, the lexical entry of nominals (Heim and Kratzer, 1998), as in (6) below:

(6)  $\llbracket she \rrbracket^{c,g} = \lambda x: x \text{ is female \& } x \text{ is an atom.}x$

Thus, Hicks 2009:112 argues that “while the shared reference of an anaphor and its antecedent perhaps naturally implies that the two share the same  $\phi$ -features, it is not at all clear that referential properties are encoded in  $\phi$ -features . . . Essentially, what is at stake in anaphor binding is referential dependency, not simply a  $\phi$ -feature dependency.” For Hicks, therefore, anaphora is built on Agree for operator-variable features: an anaphor has an unvalued VAR feature; operators, R-expressions and pronouns have valued VAR-features and can thus value VAR on the anaphor under Agree. Sundaresan (2012)’s DEP-feature, for modelling perspectival anaphora, is similar to Hicks’ VAR-feature. The crucial difference is that DEP is not borne by every nominal (like VAR is). The anaphor has an unvalued DEP feature. A pronominal in a designated structural position in the local domain is the only other nominal that also bears DEP, which is valued. DEP-valuation between the two triggers binding at LF.

I now turn to the empirical evidence for the *F*-deficiency view in the sections below.

### 3.1 When $\phi$ -features Aren’t Enough: Perspectival Anaphora

Perspectival anaphora have been reported for a number of languages (e.g. Malayalam (Jayaseelan, 1997), Japanese (Kuno, 1987, Nishigauchi, 2014), Icelandic (Hellan, 1988, Sigurðsson, 1991), French (Charnavel, 2015), Italian (Giorgi, 2010), Abe (Koopman and Sportiche, 1989), and Ewe (Pearson, 2013), a.o.). Such anaphors are defined by their sensitivity to grammatical perspective, as noted. While such anaphors typically (though crucially not always) match their antecedents for  $\phi$ -features, what really matters for anaphoric binding is perspective-sensitivity. Concretely, the antecedent of such an anaphor must denote a perspective holder, mental or spatial, towards some predication containing the anaphor. Evidence from anti-locality, complementizer selection, and agreement (Koopman and Sportiche, 1989, Sundaresan, 2012, Nishigauchi, 2014) suggest that the perspectival anaphoric dependency must be syntactically encoded. This then shows that the feature content of such anaphors must be defined, not in terms of  $\phi$ -defectiveness, but in terms of perspectival-defectiveness.

### 3.2 PERSON-asymmetries in Anaphora

A different kind of evidence involves data showing that anaphors in certain languages are sensitive to 1st/2nd vs. 3rd-PERSON asymmetries. This cannot be captured if anaphors are fully deficient for PERSON.

#### 3.2.1 PCC Effects

The Person Case Constraint (PCC), both Strong and Weak, describes certain PERSON co-occurrence restrictions between a weak direct and indirect object (e.g. clitic, agreement-marker, or weak pronoun) in certain languages and are defined below (taken from Bonet, 1991:182):

**Strong PCC:** “In a combination of a weak direct object and an indirect object [clitic, agreement marker or weak pronoun], the direct object has to be 3rd PERSON.”

**Weak PCC:** “In a combination of a weak direct object and an indirect object [clitic, agreement marker or weak pronoun], if there is a third PERSON it has to be the direct object.”

Interestingly, in certain languages, anaphors are also sensitive to PCC effects (Kayne, 1975, Herschensohn, 1979, Bonet, 1991, Anagnostopoulou, 2003, 2005, Rivero, 2004, Nevins, 2007, Adger and Harbour, 2007). This is shown for French (a) and (b) (Kayne, 1975:173):

(7) STRONG PCC WITH REFLEXIVES – FRENCH:

a. ✗ REFL ACC > 3 DAT

\*Elle<sub>i</sub> se<sub>i</sub> lui est donnée entièrement.’

She REFL.ACC 3MSG.DAT is given.FSG entirely

“She<sub>i</sub> have herself<sub>i</sub> to him entirely.”

b. ✗ REFL ACC > 1/2 DAT

\*Ils<sub>i</sub> se<sub>i</sub> me présentent.’

they REFL.ACC 1SG.DAT introduce.3PL

“They<sub>i</sub> introduce themselves<sub>i</sub> to me.”

Furthermore, just as postulated by the Strong PCC, as long as the direct object is a weak 3rd-PERSON argument, the reflexive *se* may licitly combine with it:

(8) ✓ 3 ACC > DAT:

a. Elle me l’est donné.

she me.DAT 3SG.ACC BE.3SG GIVE.MSG

“She gave it to me.”

b. Elle<sub>i</sub> se<sub>i</sub> l’est donné.

she herself.DAT 3SG.ACC BE.3SG GIVE.MSG

“She<sub>i</sub> gave it to herself<sub>i</sub>.”

Rivero (2004) reports that reflexives in Spanish show similar effects; Baker (2008) reports analogous data for Southern Tiwa.

### 3.2.2 Anaphoric Agreement

The same sensitivity to PERSON-asymmetries is played out in a different empirical realm, namely that of agreement. In Bantu languages like Swahili (Woolford, 1999), Chicheŵa (Baker, 2008), and Ndebele (Bower and Lotridge, 2002), among others, the anaphor triggers a special “anaphoric agreement” on the verb which differs from the rest of the  $\phi$ -paradigm in that language. Thus, the special *ji* verbal marking in Swahili (10) (contrast with (9)) does not  $\phi$ -covary, so is a form unique to the anaphor alone:

(9) Ahmed a-na-m/\*ji-penda Halima

Ahmed 3SBJ-PRS-3OBJ-love Halima.

“Ahmed loves Halima.”

(10) Ahmed a-na-ji/\*m-penda mwenyewe.

Ahmed 3SBJ-PRS-REFL/\*3OBJ-love himself

“Ahmed<sub>i</sub> loves himself<sub>i</sub>.” (emphatic)

Baker (2008) further shows that such anaphoric agreement patterns unmistakably like agreement triggered by 1st- and 2nd-PERSON pronouns (and *unlike* 3rd-PERSON agreement) with respect to its categorial restriction.

Anaphoric sensitivity to such PERSON-asymmetries like the PCC and agreement, shows the following: (i) such anaphors are themselves not underspecified for PERSON (at least at the point where agreement obtains) (ii) such anaphors must have something in common with 1st- and 2nd-PERSON pronouns, which is absent on 3rd, (iii) the  $\phi$ -feature-specification of such an anaphor must be different from all other nominals at this stage of the derivation.

### 3.2.3 A Gap in Anaphoric Antecedence: 1/2 vs. 3

Many anaphors only take 3rd-PERSON antecedents: e.g. German *sich*, Romance *se/si*, Japanese *zibun*, Korean *caki*, and Dravidian *ta(a)n*. While there *are* anaphors that allow 1st, 2nd-PERSON antecedents (e.g. Chinese *ziji*), these crucially *also* allow 3rd (see Huang and Liu, 2001, for Chinese). This suggests that no anaphor can be anteceded by 1st/2nd but *not* by 3rd. Yet, Table 3 would seem to falsify this — a form like *mich* can, after all, take a 1st-PERSON antecedent but not a 3rd, or a 2nd: But *mich* is ambiguously anaphoric or pronominal (as is *dich*). Perhaps, then, there is

PERSON	ANAPHOR	PRONOUN
<b>1st</b>	<i>mich</i>	<i>mich</i>
<b>2nd</b>	<i>dich</i>	<i>dich</i>
<b>3rd</b>	<i>sich</i>	<i>ihn/sie/es</i>

Table 3: Pro-forms in German (accusative, singular)

no *unambiguous* anaphoric form anteceded by 1st/2nd but not 3rd. Table 4 for Lezgian tells us that this cannot be accurate either (Haspelmath, 1993:184). In (4), *žuw* is an unambiguously anaphoric

PERSON	ANAPHOR	PRONOUN/DEM.
<b>1st</b>	<i>žuw</i>	<i>zun</i>
<b>2nd</b>	<i>žuw</i>	<i>wun</i>
<b>3rd</b>	<i>wič</i>	<i>am</i>

Table 4: Pro-forms in Lezgian (absolutive, singular)

form, anteceded by 1st & 2nd, but not 3rd. English may be similar, but forms like *himself* arguably contain a syncretic pro-form + “self” marker. The additional unambiguously anaphoric *wič* form in Lezgian makes this different again from the situation in German or Italian. Lezgian has, not one, but two dedicated reflexive forms.

What we don’t seem to have is a language that is the *inverse* of one like Italian, German, Tamil or Korean: i.e. where the anaphor that takes a 1st and 2nd-PERSON antecedent has a dedicated reflexive form while the one that takes a 3rd-PERSON antecedent has a form that is syncretic with a pronoun. In other words, the correct restriction is that in (11):

- (11) In a language with only one unambiguously anaphoric form, this must correspond to an anaphor that takes a 3rd-PERSON antecedent.

It is hard to see how a  $\phi$ -deficiency account would be able to capture (11). An anaphor that is  $\phi$ -minimal (Kratzer, 2009) should, by default, place no PERSON-restrictions on antecedence: i.e. such an anaphor should behave like Chinese *ziji*. We need the anaphor to have access to a more articulated featural system which can distinguish asymmetries within the categories of PERSON.

## 4 Proposal

We have seen theoretical and empirical evidence for two influential views regarding the featural composition of an anaphor. But far from helping adjudicate between the two, our study has shown that both approaches are valid in their own right. The role of PERSON has stood out, in particular. Some anaphors seem to be lacking PERSON altogether; others seem specified for PERSON in a way that makes them sensitive to PERSON-asymmetries for various empirical phenomena. How can an anaphor be contentful for PERSON and contentless for it at the same time? It cannot, of course.

The answer, then, must be that anaphors in natural language are not all created equal. Rather, they must align themselves along distinct broad classes. Those of one class must be deficient for PERSON; those of the other must be contentful for PERSON. Some of these anaphors must also have an additional non- $\emptyset$  feature, to yield the properties of perspectival anaphora discussed earlier.

### 4.1 A Featural Taxonomy of Anaphors

To build my PERSON-system, I use two bivalent features  $[\pm Author]$  and  $[\pm Addressee]$  which, modifying Halle 1997, Nevins 2007,<sup>1</sup> I define as in (12):

(12) **Featural definitions:**

- a. [+AUTHOR] = the reference set contains the speaker of the evaluation context (default: utterance-context)
- b. [+ADDRESSEE] = the reference set contains the hearer of the evaluation context (default: utterance context).

Cross-classifying these features yields the PERSON-categories in Table 5. The categories in

	Features	Category	Exponents
1.	[+Author]	1	<i>I, we</i>
	[+Addressee]	1INCL $\wedge$ 2	<i>-nto</i> (Muna, 2HON.SG=1INCL.DU)
	[-Author]	$\neg$ 1	<i>ale</i> (Amele, 2=3.DU)
	[-Addressee]	$\neg$ 2	—
2.	[-Author, -Addressee]	3	<i>him, sie</i> (German), <i>si</i> (Italian)
	[+Author, +Addressee]	1INCL.	<i>naam</i> (Tamil, 1INCL.PL)
	[+Author, -Addressee]	1EXCL.	<i>naanga</i> (Tamil, 1EXCL.PL)
	[-Author, +Addressee]	2	<i>you</i>
	$\emptyset$	NULL	<i>ziji</i> (Chinese), <i>man</i> (German)

Table 5: Person Classification based on  $[\pm Author]$  and  $[\pm Addressee]$

Group 1 in Table 5 are all characterized in having a value for exactly one feature and yield various PERSON syncretism effects. Thus,  $[+Addressee]$  defines all and only forms that include the addressee/hearer: in other words, forms that are syncretic for 1st-PERSON inclusive. The feature-sets in Group 2, with the exception of  $\emptyset$ , however, are defined on the full specification of  $[\pm Author]$  and  $[\pm Addressee]$ . The NULL category is based on the  $\emptyset$  and thus defines a PERSON-less

<sup>1</sup>Halle's and Nevins' definitions actually pertain to  $[\pm Participant]$  and  $[\pm Author]$ , the latter of which I have taken over unchanged. I am, however, using  $[\pm Addressee]$  instead of  $[\pm Participant]$  in order to be able to deal with clusivity distinctions.



form. All this said, it is always a valid question whether the featurally underspecified categories in Group 1 of Table 5, are really necessary, given that the same syncretism effects can be obtained via morphological underspecification.

For the sake of simplicity, I will do away with the categories in Group 1 and propose that such syncretisms be derived via underspecification of the exponents instead. In addition, I will introduce a privative feature [*Anim*] to the featural toolkit. Following Adger and Harbour (2007), I assume that this feature encodes the presence of semantic animacy and is present on categories that are contentful for PERSON. This yields the final categorization of PERSON features given in Table 6. The crux of such a classification is that there are now *three* PERSON-categories that are non-1st

Features	Category	Exponents
[-Author, -Addressee]	3	<i>him, sie</i> (German), <i>si</i> (Italian)
[+Author, +Addressee]	1INCL.	<i>naam</i> (Tamil, 1INCL.PL)
[+Author, -Addressee]	1EXCL.	<i>naanga</i> (Tamil, 1EXCL.PL)
[-Author, +Addressee]	2	<i>you</i>
[ <i>anim</i> ]	REFL	Anaphors in Bantu, Warlpiri
∅	NULL	<i>ziji</i> (Chinese), <i>man</i> (German)

Table 6: Final Person Classification based on [ $\pm$ Author] and [ $\pm$ Addressee]

and non-2nd, as opposed to the standard one (= 3rd-PERSON). Furthermore, all categories except ∅ have in common, the feature *Anim*.

Against this featural classification, I now distinguish three categories of anaphor: NULL-anaphor, 3rd-PERSON anaphor, and REFL, based on the features they carry. The feature specifications of these three main classes are given in Table 2<sup>2</sup>

Class	PERSON-Features	Exponents
3rd-anaphor	[-Author, -Addressee, Anim]	<i>taan</i> (Tamil), <i>zich(zelf)</i> (Dutch), <i>si</i> (Italian)
NULL-anaphor	∅	<i>ziji</i> (Chinese), <i>zibun</i> (Japanese), <i>vetja</i> (Albanian)
REFL	[Anim]	Bantu anaphors

Table 7: Three Classes of Anaphor

## 4.2 NULL-PERSON Anaphors

A NULL-PERSON anaphor must have an unvalued PERSON-feature that is valued in the course of the syntactic derivation by a nominal or functional head in the Agree domain. The empirical

<sup>2</sup>The English form *himself*, just like Dutch *hemzelf*, doesn't fit neatly into Table 2 because, as discussed above, I am treating these as consisting of a pronominal form + an anaphoric "self" form. The "self" morpheme alone would count as PERSON-less, since it can take an antecedent of any PERSON. However, the pronominal part is clearly specified for PERSON. Whether this pronominal part is *pre*-specified for PERSON, or ends up acquiring these features via Agree with its antecedent is something that I have no opinion on at the moment, though much work has been done on this issue elsewhere.

signature of such an anaphor is that it can take antecedents of all PERSON. Examples are Chinese *ziji*, Japanese *zibun*, Albanian *vetja* and potentially expletives like German *man*.

For instance, such an anaphor will also always match its antecedent in value for PERSON: if we include a grammatical vs. semantic feature-distinction, binding under imposters (Collins and Postal, 2012) may be accommodated too. Additionally, such anaphors. The AAE can also be straightforwardly explained for NULL-anaphora, as long as we make the following assumptions:

- (i) the anaphor has not itself been valued for PERSON when T/v probes to Agree with it, and
- (ii) Agree for partial  $\phi$ -features is ruled out.

The first condition provides a principled explanation for the AAE in terms of the order of Agree operations: if the anaphor itself bears an unvalued PERSON feature, then it cannot value the T/v head for this feature when it probes for it. The second condition prevents a NULL-PERSON anaphor with a valued NUMBER and/or valued GENDER feature from trigger covering agreement for these features on the verb; agreement must be an “all or nothing” operation.

We had also observed that anaphors crosslinguistically often fail to mark the full range of  $\phi$ -distinctions. As for the crosslinguistic tendency of anaphors to be morphologically underspecified, noted earlier, this would have to be captured by morphological rules. I am assuming that a NULL-PERSON-anaphor starts out being *unvalued* for PERSON. Thus, once it becomes  $\phi$ -valued under Agree, it will end up with a full set of  $\phi$ -features. Any surface lack of  $\phi$ -featural distinctions on such an anaphor will necessarily have to follow from the underspecification of Vocabulary Items.<sup>3</sup>

### 4.3 3rd-PERSON Anaphors

A 3rd-PERSON anaphor has the feature specification [*−Author, −Addressee*], and is negatively specified with respect to 1st- and 2nd-PERSON. The empirical signature of such an anaphor is that it allows only 3rd-PERSON antecedents (e.g. German *sich*, Dravidian *ta(a)n*, Romance *se*).

3rd-PERSON anaphors must be distinguished from *non-anaphoric* 3rd-PERSON pro-forms, which will also have the same feature-specification. Assuming that anaphora is defined in terms of feature-deficiency (which is “rectified” via Agree), this means that 3rd-PERSON anaphora must be defective for a non-PERSON feature. Such anaphors could thus have an unvalued NUMBER or GENDER feature. Alternatively, or additionally, such anaphors could be deficient for a perspectival feature like DEP (Sundaresan, 2012, 2017).

Assuming that the PCC is a PERSON restriction that affects all (weak) grammatical objects that are (positively or negatively) specified for PERSON (Anagnostopoulou, 2003, 2005:a.o.), it follows that the category of 3rd-PERSON anaphors should be subject to the PCC, just like 1st- and 2nd-PERSON pronouns. Indeed, in Kiowa, 1st & 2nd-PERSON, reflexives and *animate* indirect objects in 3rd, pattern alike for the PCC (Adger and Harbour, 2007): which follows directly from the feature-system above. The parallels between anaphoric agreement (as in Swahili (10)) and 1st & 2nd-PERSON agreement could, similarly, be derived by positing that such agreement is regulated by sensitivity to a  $\pm$ -PERSON feature.

<sup>3</sup>An alternative might be to argue, as Kratzer (2009) does, that NULL-PERSON-anaphors can be born with no PERSON-attributes at all. Then, morphological underspecification would simply reflect featural underspecification. I want to avoid proposing this not only to keep the system restrictive, but also to maintain the idea that semantic binding of such anaphors is rooted in syntactic Agree for PERSON.

#### 4.4 Motivating REFL

What is harder to explain is why anaphoric agreement is distinct from all other forms in the  $\phi$ -paradigm in that language (see again Exx. (9) vs. (10)). This means the 3rd-PERSON anaphor must be featurally distinct from all other nominals at the time of triggering agreement. But once an anaphor has been valued for any NUMBER, GENDER or other (e.g. DEP) features, what is to distinguish it from another nominal (e.g. a non-anaphoric 3rd-PERSON pronoun) which bears these features inherently?<sup>4</sup> An even bigger challenge comes from sentences like (13), reported in Baker (2008), 150-151, Ex. 86b:

- (13) Ndi-na-dzi-khal-its-a                      *pro*[+ana]-w-a-m-kali.  
 1sS-PAST-REFL-become-CAUS-FV CL1-ASSOC-CL1-fierce  
 “I made myself fierce.”

Languages like Chicheŵa, which show anaphoric agreement also allow their anaphors to take 1st- and 2nd-PERSON antecedents in addition to 3rd. The defining property of a 3rd-PERSON anaphor is that it cannot take 1st- and 2nd-PERSON antecedents. This shows that the kind of anaphor we are dealing with in 13 is not a 3rd-PERSON anaphor. At the same time, it is also not a NULL-PERSON anaphor: anaphoric agreement in Chicheŵa patterns like 1st- and 2nd-PERSON agreement and unlike 3rd-PERSON agreement.

This is where the REFL comes in. The empirical signature of an anaphor of the REFL class is its restriction to animate antecedents. Natural language examples are anaphors in the Bantu languages and potentially also reflexive clitics sensitive to the PCC in certain languages. The [*anim*] feature explains why such anaphors pattern like 1st and 2nd wrt. agreement (and potentially also the PCC in some languages): 3rd-PERSON agreement in such languages is triggered by NULL. Featural underspecification allows antecedence by 1st, 2nd, and 3rd.

All three classes of anaphor are, incidentally, well-behaved with respect to the 1/2 vs. 3 antecedence gap in (11), repeated below:

- (14) In a language with only one unambiguously anaphoric form, this must correspond to an anaphor that takes a 3rd-PERSON antecedent.

Both NULL-PERSON and 3rd-PERSON anaphora are well-behaved with respect to this gap. A null-anaphor, like Chinese *ziji*, which allows 1st- and 2nd person antecedents will automatically also allow 3rd-PERSON antecedents, since it is featurally  $\emptyset$ . A 3rd-PERSON anaphor, like German *sich*, which is featurally specified as [*-Participant, -Author*] would automatically *disallow* 1st- and 2nd-PERSON antecedents and only allow 3rd. Anaphors in REFL behave essentially like NULL-PERSON anaphors in this regard: they can be anteceded by 1st, 2nd, and 3rd. There can be no special SpellOut rule that makes explicit reference to an anaphor in the 1st/2nd-PERSON ([+*Participant*]) while yielding a syncretic pro-form in the 3rd, because an anaphor is either featurally underspecified, or negatively specified, wrt. participanthood.<sup>5</sup>

<sup>4</sup>Of course, one could underspecify the SpellOut rule for agreement, but this seems clearly the wrong way to go: it doesn't explain why such agreement is triggered by an anaphor as opposed to any other pro-form with these features.

<sup>5</sup>The only scenario that would allow 1st/2nd-antecedence while disallowing 3rd would be if the anaphor were itself specified [+*Author*] or [+*Addressee*] (or some combination thereof). But [+*Participant*]-marked nominals don't seem capable of serving *solely* as anaphors (like with fake indexicals) — they would indexically *also* be able to denote participants of the utterance context. I.e. there aren't unique, dedicated anaphoric forms for 1st and 2nd-PERSON alone in any language, as far as I'm aware, though *why* this should be the case is still far from clear.

## 4.5 Perspectival Anaphors

We saw earlier that anaphors in certain languages have something “extra”: their antecedence is defined, not (only) in terms of  $\phi$ -features but, in terms of perspective-holding with respect to some predication containing the anaphor. In the current system, perspectival anaphora comes out as a strictly orthogonal category. As such, perspectival anaphors can, in theory, be defined for NULL-PERSON and 3rd-PERSON anaphors, as well as REFL. Dravidian *ta(a)n* is a 3rd-PERSON anaphor in the current system, and is additionally perspectival. Assuming that perspectival anaphors have an unvalued DEP-feature as argued in Sundaesan 2012, 2017, *ta(a)n* would be spelled out by the rule in (15) (post-valuation of [DEP]):

(15) [-Author, -Addressee, anim, Dep: x, sg]  $\leftrightarrow$  *taan*

Chinese *ziji* is a NULL-PERSON anaphor but is also perspectival (Huang and Liu, 2001). The SpellOut rule for *ziji* would thus be as in (16):

(16) [Dep:x]  $\leftrightarrow$  *ziji*

## 4.6 Empirical Predictions

The proposal outlined here makes some clear empirical predictions. Some of these bear clear fruit and can already be discussed here; others remain to be tested.

### 4.6.1 $\phi$ -matching and Its Absence

Turning to the issue of  $\phi$ -matching, we noted that NULL-PERSON anaphors must match their antecedents in PERSON: after all, valuation for PERSON is what drives binding for this class of anaphors. But given that such anaphors can be born with inherently specified NUMBER and GENDER, they don’t necessarily need to match their antecedents for these features. Indeed, NUMBER mismatches are possible in Hausa (Haspelmath, 2008:42, Ex. 8b):

(17) Laadi<sub>i</sub> taa soòki káàn-sù<sub>i+</sub>  
 Ladi 3SG criticize self-3SG.F  
 “Ladi<sub>i</sub> criticized themselves<sub>i+</sub>.”

Crucially, Hausa anaphors can be anteceded by all PERSON (Newman, 2000), showing that they belong to the class of NULL-PERSON anaphor. Relatedly, the current model derives anaphor-antecedence PERSON-matching in two ways. With a NULL-PERSON anaphor (with REFL), PERSON-matching happens featurally; with a 3rd-PERSON anaphor, matching for NUMBER and GENDER alone may happen featurally; PERSON-matching is always enforced in the semantics. This distinction can be tested empirically. Feature-matching entails strict  $\phi$ -feature identity since it comes about via goal-probe feature-copying under Agree. Semantic matching, on the other hand, results in  $\phi$ -feature identity *in the default case*, but not always. Rather, the requirement is that, applying the interpretation of the two sets of  $\phi$ -features to a single referent does not yield a *contradiction* (e.g. a single referent cannot be simultaneously 1st and 2nd-PERSON). But this predicts that we should observe anaphor-antecedent  $\phi$ -mismatches, just in case applying the interpretation of the two sets of  $\phi$ -features to a single referent *does*, indeed, yield a consistent interpretation. This prediction is confirmed in so-called “monstrous agreement” sentences in Tamil (Sundaesan, 2012, 2017). *Monstrous agreement* refers to the phenomenon where the predicate of

a 3rd-PERSON speech report surfaces with 1st-PERSON agreement in the scope of an anaphor. Sundaresan argues that, in such cases, the anaphor *ta(a)n* is bound by a shifted 1st-PERSON indexical (Schlenker, 2003b, Anand, 2006) which also triggers the 1st-PERSON agreement on the verb. In this scenario, an anaphor and its local binder have clearly non-identical PERSON features, and yet have identical reference because the anaphor is evaluated against an indexically shifted context (Schlenker, 2003a, Anand, 2006). It is entirely consistent for a single referent to be both the speaker of a matrix speech event (thus [+Author] with respect to the speech event) and *not* the speaker or addressee with respect to the utterance-context (thus, [-Author, -Addressee] with respect to the utterance-context). There is no contradiction. Crucially, *ta(a)n* is a 3rd-PERSON anaphor: thus, there is only semantic matching between it and its antecedent.

#### 4.6.2 Insensitivity to PCC Effects

A different prediction has to do with the PCC. Anaphors that behave like 1st- and 2nd-PERSON with respect to the PCC belong to the category of 3rd-PERSON anaphora or REFL. This entails that NULL-anaphora should not be restricted like 1st- and 2nd-PERSON for PCC. Indeed, this prediction seems to be confirmed. In Bulgarian, a language that shows the Weak PCC, PCC effects do not obtain with the reflexive clitic *se* (Rivero, 2004:500):

- (18) Na Ivan mu se xaresvat tezi momicheta.  
 to Ivan DAT REFL like-3PL these girls  
 “Ivan likes these girls.”

Crucially, Bulgarian *se* is underspecified for PERSON and can take antecedents for 1, 2, and 3 (Nevins, 2007).

#### 4.6.3 Animacy Effects

We also make a prediction for REFL. Since REFL-anaphors are featurally underspecified as [*anim*], the obvious prediction, then, is that anaphors in such languages will not only allow antecedents of all PERSON, which we have already seen to be true, but that they will *not* allow inanimate antecedents. Such a restriction does, indeed, seem to hold for Swahili: e.g. only animate objects may trigger agreement (Woolford, 1999, Vitale, 1981).

#### 4.6.4 Typology of Perspectival Anaphors

Finally, if the class of perspectival anaphors runs orthogonal to the distinct featural classes, we predict (*ceteris paribus*) that there should, in theory, be languages that have perspectival anaphors alongside non-perspectival ones (3rd-PERSON, NULL, or REFL). Indeed, this seems to also be confirmed. As per Sundaresan (2012), in some Tamil dialects, local reflexivity is expressed either via a dedicated reflexive form *ta(a)n* or with a pro-form that is syncretic with a deictic pronoun; crucially, the former alone has a perspectival interpretation, while the latter behaves like what would, under the current classification be, a 3rd-PERSON anaphor. We already saw that *ta(a)n* would be spelled out under the rule in (15), repeated in (19). The non-perspectival anaphor *avan* would in turn be spelled out by the rule in (20):

- (19) [-Author, -Addressee, anim, Dep: x, sg] ↔ *taan*  
 (20) [-Author, -Addressee, anim, m, sg] ↔ *avan*

Although the anaphoric and pronominal variants of *avan* would differ in terms of which NUMBER and GENDER features they were born with — they would be indistinguishable post-valuation. They would thus both be subject to the SpellOut rule in (20), yielding syncretic *avan* in this dialect.

## References

- Adger, David, and Daniel Harbour. 2007. Syntax and syncretisms of the Person Case Constraint. *Syntax* 10:2–37.
- Anagnostopoulou, Elena. 2003. *The syntax of ditransitives: evidence from clitics*. Berlin: Mouton de Gruyter.
- Anagnostopoulou, Elena. 2005. Strong and weak person restrictions: a feature checking analysis. In *Clitic and affix combinations: theoretical perspectives*, ed. Lorie Heggie and Francisco Ordóñez, 199–235. Amsterdam: John Benjamins.
- Anand, Pranav. 2006. *De de se*. Doctoral Dissertation, Massachusetts Institute of Technology.
- Baker, Mark C. 2008. *The syntax of agreement and concord*. United Kingdom: Cambridge University Press.
- Bonet, Eulalia. 1991. Morphology after syntax: pronominal clitics in Romance. Doctoral Dissertation, MIT, Cambridge, MA.
- Bouchard, Denis. 1984. *On the content of empty categories*. Dordrecht: Foris.
- Bowern, Claire, and Victoria Lotridge. 2002. *Ndebele*. Lincom Europa.
- Carnie, Andrew. 2007. *Syntax: a generative introduction*. Blackwell: Oxford.
- Charnavel, Isabelle. 2015. Apparent exemption from Condition A: a perspective-based theory. [Http://ling.auf.net/lingbuzz/002683](http://ling.auf.net/lingbuzz/002683).
- Chomsky, Noam. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.
- Collins, Chris, and Paul M. Postal. 2012. *Imposters: a study of pronominal agreement*. Cambridge, MA: MIT Press.
- Giorgi, Alessandra. 2010. *Towards a syntax of indexicality*. Oxford Studies in Theoretical Linguistics. Oxford: Oxford University Press.
- Halle, Morris. 1997. Impoverishment and fission. In *PF: Papers at the interface*, ed. Benjamin Bruening et al., volume 30, 425–450. Cambridge, MA: MITWPL.
- Haspelmath, Martin. 1993. *A grammar of Lezgian*. Berlin: Mouton de Gruyter.
- Haspelmath, Martin. 2008. A frequentist explanation of some universals of reflexive marking. *Linguistic Discovery* 6:40–63.
- Heim, Irene. 2008. Features on bound pronouns. In *Phi Theory: phi-features across modules and interfaces*, ed. Daniel Harbour, David Adger, and Susana Béjar, Oxford Studies in Theoretical Linguistics, 35–56. Oxford University Press.
- Heim, Irene, and Angelika Kratzer. 1998. *Semantics in Generative Grammar*. Oxford: Blackwell Publishers.
- Heinat, Fredrik. 2008. *Probes, pronouns and binding in the Minimalist Program*. VDM Verlag.
- Hellan, Lars. 1988. *Anaphora in Norwegian and the theory of grammar*, volume 32 of *Studies in Generative Grammar*. Dordrecht: Foris Publications.
- Herschensohn, Julia. 1979. On clitic placement in French. *Linguistic Analysis* 6:187–219.
- Hicks, Glyn. 2009. *The derivation of anaphoric relations*. Linguistik Aktuell. John Benjamins.
- Huang, James, and Luther Liu. 2001. Logophoricity, attitudes, and *ziji* at the interface. In *Long-distance reflexives*, ed. Peter Cole, Gabriella Hermon, and James Huang, 141–195. New York: Academic Press.
- Jayaseelan, K.A. 1997. Anaphors as pronouns. *Studia Linguistica* 51:186–234.

- Kayne, Richard. 1975. *French syntax*. Cambridge: MIT Press.
- Koopman, Hilda, and Dominique Sportiche. 1989. Pronouns, logical variables, and logophoricity in Abe. *Linguistic Inquiry* 20:555–588.
- Kratzer, Angelika. 2009. Making a pronoun: fake indexicals as windows into the properties of pronouns. *Linguistic Inquiry* 40:187–237.
- Kuno, Susumo. 1987. *Functional syntax – anaphora, discourse and empathy*. Chicago: Chicago University Press.
- Nevins, Andrew. 2007. The representation of third person and its consequence for person-case effects. *Natural Language and Linguistic Theory* 25:273–313.
- Newman, Paul. 2000. *The Hausa language: an encyclopedic reference grammar*. New Haven: Yale University Press.
- Nishigauchi, Taisuke. 2014. Reflexive binding: awareness and empathy from a syntactic point of view. *Journal of East Asian Linguistics* 23:157–206.
- Pearson, Hazel. 2013. The sense of self: Topics in the semantics of de se expressions. Doctoral Dissertation, Harvard University, Cambridge.
- Reinhart, Tanya, and Eric Reuland. 1993. Reflexivity. *Linguistic Inquiry* 24:657–720.
- Reuland, Eric. 2001. Primitives of binding. *Linguistic Inquiry* 32:439–492.
- Reuland, Eric. 2011. *Anaphora and language design*. Cambridge, Mass.: MIT Press.
- Rivero, María Luisa. 2004. Quirky subjects, person restrictions, and the Person-Case Constraint. *Linguistic Inquiry* 35:494–502.
- Rizzi, Luigi. 1990. On the anaphor-agreement effect. *Rivista di Linguistica* 2:27–42.
- Rooryck, Johan, and Guido vanden Wyngaerd. 2011. *Dissolving binding theory*. Oxford Studies in Theoretical Linguistics. Oxford: Oxford University Press.
- Sag, Ivan A., Thomas Wasow, and Emily M. Bender. 2003. *Syntactic theory*. Stanford: CSLI Publications.
- Schlenker, Philippe. 2003a. Indexicality, logophoricity, and plural pronouns. In *Research in Afroasiatic grammar II (selected papers from the fifth conference on Afroasiatic languages, Paris, 2000)*, ed. J. Lecarme, 409–428. Philadelphia: Benjamins.
- Schlenker, Philippe. 2003b. A plea for monsters. *Linguistics and Philosophy* 26:29–120. Kluwer Academic Publishers.
- Sells, Peter. 1987. Aspects of logophoricity. *Linguistic Inquiry* 18:445–479.
- Sigurðsson, Halldór Ármann. 1991. Icelandic Case-marked PRO and the licensing of lexical arguments. *Natural Language and Linguistic Theory* 9:327–363.
- Sundaesan, Sandhya. 2012. Context and (co)reference in the syntax and its interfaces. Doctoral Dissertation, University of Tromsø and University of Stuttgart, Tromsø.
- Sundaesan, Sandhya. 2016. Anaphora vs. agreement: a new kind of Anaphor Agreement Effect in Tamil. In *The impact of pronominal form on interpretation*, ed. Patrick Grosz and Pritty Patel-Grosz, 77–106. de Gruyter, Mouton.
- Sundaesan, Sandhya. 2017. Perspective is syntactic: evidence from anaphora. To Appear in *Glossa*.
- Tucker, Matthew A. 2011. Even more on the anaphor agreement effect: when binding does not agree. Manuscript written at UCSC.
- Vitale, Anthony J. 1981. *Swahili syntax*. Dordrecht: Foris.
- Woolford, Ellen. 1999. More on the anaphor agreement effect. *Linguistic Inquiry* 30:257–287.

