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Argument indexing: a conceptual framework for the syntactic status of bound person forms

1 Introduction

In this article, I propose that the concept of **(argument) indexing** is more useful in typology (and typically also in language description) than the commonly used concepts of **pronoun** and **agreement** for situations like those in (1)–(2), where we find bound person-marking forms on the verb.

(1) Georgian (Boeder 2002: 98–99)

a. *V-∅-č'am.*

1.SUBJ-3.OBJ-eat

'I eat it.'

b. *Me v-∅-č'am ma-s.*

I 1.SUBJ-3.OBJ-eat it-DAT

'I eat it.'

(2) Mam (Mayan; England 1983: 156)

a. *Ma tz'-ookx t-uj jaa.*

PST 3SG.ABS-go.in 3SG-in house

'She went in the house.'

b. *Ma tz'-ookx Mal t-uj jaa.*

PST 3SG.ABS-go.in María 3SG-in house

'María went in the house.'

The basic observation is that it is not primarily the phenomena observed in the world's languages, but apparently the descriptive tradition of some well-known European languages (especially German, English and French) that has led many linguists to describe bound person forms as “pronouns” or as “agreement markers”. Instead, I will argue that bound person forms are best seen as phenomena sui generis that in most cases neither fall under a coherent concept of pronoun nor under a coherent concept of agreement.

There is an enormous literature on bound pronouns and their syntactic status (e.g. Jelinek 1984, Mithun 1986, Bresnan & Mchombo 1987, Marácz & Muysken (eds.) 1989, Launey 1994, Baker 1996, Evans & Sasse (eds.) 2002, Corbett 2003, Siewierska 2004: 120–127, Kibrik 2011: ch. 6, Schultze-Berndt 2011, Hengeveld 2012), so I will not say anything that is completely new here. But since most of this literature seems to debate the same old question, namely whether bound person forms are agreement markers or pronouns, I feel it may be helpful to propose a reframing of the issues by adopting a terminology that makes no reference to agreement or pronouns at all (argument indexing).

Grammatical terminology is often thought of as arbitrary and trivial, irrelevant to matters of substance. However, there are good reasons to think that there are strong Whorfian effects, in the sense that familiar and entrenched terminology shapes the thinking of linguists. For example, since linguists have long been used to describing grammatical structures in terms of “words” (word combinations and word parts), many linguists have looked for the syntax–morphology boundary, often without asking what linguistic phenomena (beyond orthographic conventions) justify such a distinction in the first place (cf. Haspelmath 2011a). Conferences and edited volumes have been organized around traditional terms such as “finiteness” (Nikolaeva 2007) and “impersonals” (Malchukov & Siewierska 2011), even though it is far from clear that any coherent concepts of general linguistics can be associated with these terms. Most of the concepts of general linguistics derive from concepts originally created for the description of particular languages. Often such concepts can usefully be extended from the descriptive (language-particular) level to the general level, but in many cases, this does not work because languages are too different. It seems that the terms *pronoun* and *agreement*, while useful for languages like German and English, cannot be readily extended to languages of different types without confusion arising.

The concepts that I will be concerned with are comparative concepts, i.e. concepts of general linguistics that are needed for making cross-linguistic generalizations, or for contrastive statements of any sort (cf. Haspelmath 2010). A selection of significant cross-linguistic generalizations that can be easily stated in terms of the concepts developed here is given in Appendix A. But in addition, for the sake of comprehensibility of language descriptions, it is helpful if the descriptive terms do not diverge too strongly from the corresponding comparative terms, especially if the descriptive categories are close to the corresponding comparative concepts. Thus, my terminological proposals here will also be useful for language description.

It seems to me that in the discussions of bound person forms, a number of empirical observations have often been ignored, and that by taking these seriously, we are naturally led to the proposals of this article:

- (3) a. Person forms have heterogenous functions: Speech-role forms refer deictically to speech-act participants, while 3rd person forms refer to other entities that do not necessarily need a full NP to point to them.
- b. Anaphoric pronouns often agree with their antecedent in number (and sometimes in gender), but deictic personal pronouns (1st and 2nd person) never agree with anything, and personal pronouns never agree in person.
- c. Bound person forms that require the presence of a coreferential nominal (a conominal) are very unusual in the world's languages (cf. Siewierska 1999).
- d. Meaning is often expressed in a distributed way, i.e. there is nothing anomalous about a situation in which a single meaning element is expressed by two form elements (or vice versa, for that matter).
- e. Affixal and clitic person forms are not distinguishable in general, as there are no good general criteria for distinguishing between affixes and clitics (see Haspelmath 2011a).

2 Bound person forms: indexes

The basic phenomenon addressed in this article is **bound person forms**, for which the shorter term **indexes** can conveniently be used (following Lazard 1998: 6).¹ Bound person forms are relatively straightforward to delimit from other phenomena. Let us begin with the definition of *person form*.

Person form is a cover term for speech-role (or locuphoric) forms and allophoric forms (the term *allophoric* is from Dahl 2000).² A speech-role form is a form that refers to one of the speech-roles speaker(s) and addressee(s). An allophoric form is a form that is used as a reduced referential device (cf. Kibrik 2011: 39) for a non-speech-role referent occurring in the shared context, the previous discourse, or in the same clause. The term *person* as a cover term for locuphoric and allophoric forms is decidedly odd, but linguists have used the term for many

¹ The term (*actant*) *index* (*indice actancier* in French, Lazard 1994: 7, Bossong 1998) has been used in French linguistics for some time, especially the form *indice personnel* (e.g. Dumézil & Esenç 1975: 11). It seems to have its origin in Tesnière (1959: § 41.22, p. 85).

² For speech-role forms, Dahl (2000) uses *egophoric*, but this sounds odd for 2nd person forms. The term *locuphoric* (cf. *locution* 'speech') is more transparent (and is clearer than the alternative term "local person" that is sometimes used as a cover term for 1st and 2nd person).

centuries, so I am not proposing that it should be abandoned. It would be difficult to come up with an alternative term, because person as defined in this way is not a unified semantic domain (see observation 3a). What unifies speech-role forms and non-speech-role forms is exclusively the fact that they tend to be expressed in parallel ways across languages. These parallel forms are conveniently called *first person*, *second person*, and *third person* (as well as perhaps others, see Cysouw 2003). Consider paradigms such as those in (4), which are familiar from practically all languages.

(4)	Somali	Armenian	French	Lavukaleve
	SG 1 <i>anigu</i>	SG 1 <i>es</i>	SG 1 <i>moi</i>	
	2 <i>adigu</i>	2 <i>du</i>	2 <i>toi</i>	SG 1 <i>a-</i>
	3F <i>iyadu</i>	3 <i>na</i>	3M <i>lui</i>	2 <i>ngo-/ne-</i>
	3M <i>isagu</i>	PL 1 <i>menk'</i>	3F <i>elle</i>	3 <i>o-</i>
	PL 1EX <i>annagu</i>	2 <i>duk'</i>	PL 1 <i>nous</i>	DU 1EX <i>le-</i>
	1IN <i>innagu</i>	3 <i>nrank'</i>	2 <i>vous</i>	1IN <i>me-</i>
	2 <i>idinku</i>	(Dum-Tragut 2009)	3 <i>eux</i>	2 <i>mele-</i>
	3 <i>iyagu</i>			3 <i>lo-</i>
	(Berchem 1991: 76)			PL 1EX <i>e-</i>
				1IN <i>me-</i>
				2 <i>me-</i>
				3 <i>ma-</i>
				(Terrill 2003: 243)

Person forms in this sense can be identified in all languages. Siewierska (2004) extensively discusses person forms and deals with a small number of phenomena that may not be readily classifiable as either a person form or something else. Overall, there is not much room for controversy here.

Somewhat more problematic is the distinction between **bound** and **free** person forms (or dependent and independent person forms). Contemporary authors typically make a three-way distinction “affix – clitic – nonclitic word”, which can be mapped onto the binary distinction “bound” (= affix and clitic) vs. “free” (= nonclitic word) (e.g. Zwicky & Pullum 1983, Haspelmath 2002, Aronoff & Fudeman 2005).³ For cross-linguistic purposes, the bound vs. free distinction is much more useful than the tripartition. Distinguishing in a general way between affixes and clitics seems to be impossible (observation 3e), because there is no

³ In contrast to this quasi-standard terminology, Kibrik (2011) only regards affixes as “bound”, while both clitics and nonclitic words are “free”. But no clear criteria for distinguishing affixes and clitics are given (Kibrik 2011: 86–89).

single criterion and the various criteria do not converge to a sufficient extent (Haspelmath 2011a, 2011b). But distinguishing in a general way between bound elements and free elements is quite straightforward, because there is a single criterion: Free forms are forms that can occur on their own, i.e. in a complete (possibly elliptical) utterance (Bloomfield 1933: 160). This criterion correlates very highly with the criterion of contrastive use: Only free forms can be used contrastively. Thus, we can say that if a person form cannot be used on its own or contrastively, it is a **bound person form**.

Bound person forms most often occur on verbs (expressing verbal arguments), but they may also be used on nouns (expressing possessors) or adpositions (expressing the adpositional complement), and languages often use similar forms for the three host types (e.g. Siewierska 1998, Bakker 2005). In this article, I mostly talk about verbal person forms, but this is only to simplify the exposition. Everything I say applies to nominal and adpositional person forms as well.

When a person form is free, calling it a **pro-noun** is justified in the etymological sense, because it usually behaves like a noun (or rather an entire noun phrase, or **nominal**). It can occur as an argument or adjunct of a clause or as a referential modifier of a nominal. Nouns (or nominals), too, are free forms and can occur in these roles. Free person forms are thus “pro-nouns” in that they occur in syntactic contexts where a noun (or nominal) could occur, substituting for a noun, so to speak (*pro nomine*).

When person forms are bound, as in (1)–(2) above and the Lavukaleve forms in (4), it is much less clear that they are pronouns in the same sense. They behave differently in two respects: (i) They seem to be part of the verb (or noun or adposition), rather than being separate nominal expressions; (ii) in most cases, they can cooccur with a nominal (a *conominal*) with the same reference and role in the same clause.

As a result of these differences, it is not very helpful to call them “pronouns” (“bound pronouns”, “pronominal affixes”, or “pronominal markers”) (see further in section 8). Alternatively, linguists often talk about them in terms of “agreement”. But agreement is generally thought of as an asymmetrical kind of category-form covariation (the form of the target depends on the category of the controller), and in most uses of most person forms, there is no controller (at least no controller of the person category) present (see further in section 9).

Instead of describing bound person forms in terms of the ‘pronoun’ concept or the ‘agreement’ concept, I propose to regard them as phenomena sui generis and to call them **argument indexes** (or person indexes, or simply indexes), as in Lazard (1998). The grammatical process of providing verbs, nouns and adpositions with argument indexes can be called **indexing** (or indexation). Argument indexes on verbs are often called subject and object indexes after their argument-

class,⁴ indexes on nouns are called possessive indexes, and indexes on adpositions can be called adpositional indexes.

In addition to the noun *index*, we can make use of the verb *to index*, and this verb is in fact widely used in the literature, as seen in (5).⁵ In this respect, the terminology proposed here is already fairly established.

- (5) a. “Core participants (subjects and objects) can be indexed on the verb by proclitics and enclitics” (Klaiman 1988: 63)
- b. “(In Kanuri) the recipient phrase is indexed on the verb in the same way as direct objects of ordinary transitive verbs are” (Newman 1996: 31)
- c. “In many languages subjects and/or objects are indexed on verbs by means of affixes or clitics.” (Lichtenberk 1997: 301)
- d. “the referent of an involuntary state predicate, which *is indexed on the verb* with dative suffixes, may also appear in nominative case” (Donohue & San Roque 2004: § 4.1.2, on I’saka)

Since this usage is quite familiar, there should be no obstacle to using *index* also as a noun, in the sense of ‘bound person form, which indexes arguments on verbs, nouns and adpositions’.⁶

⁴ *Argument-class* is my term for categories like subject and object (often called syntactic functions or grammatical relations).

⁵ This use of *be indexed* is semantically identical to *be cross-referenced*. The latter is perhaps more widespread:

- (i) „Direct agents, patients, and subjects are cross-referenced on verbs“ (England 1983: 155)
- (ii) „The following sentences illustrate clitic pronouns which cross-reference S. Note that in general a cross-referenced NP need not itself be present in the surface string.“ (Smith 1985: 102)

Note that the transitive verb also has the advantage over the prepositional verb *to agree with* that it can easily be used in the active or the passive:

- (iii) The verb indexes the object. (Cf. The verb agrees with the object.)
- (iv) The object is indexed on/by the verb. (Cf. ??The object is agreed with by the verb.)
- (v) Indexed objects have freer word order than unindexed objects.
(Cf. ??Agreed-with objects have freer word order than unagreed-with objects.)

⁶ The term *index* is of course used in other ways, e.g. for referential indices (e.g. Chomsky 1980) or quotative indexes (Güldemann 2008). Context should generally make it clear which sense is intended, so the longer forms *argument index* or *person index* can generally be abbreviated to *index*. Note that the plural form is *indexes*, not *indices* (cf. Lazard 1998: 6). (And quite recently, the term “indexing” has been used in a rather different new typological sense by Evans & Fenwick to appear).

3 Index-sets

If one thinks of bound person forms in terms of the person suffixes of the older and conservative Indo-European languages, one may be inclined to think of them as a single set, and to say that the verb marks person and number in the same way as it marks tense, mood and voice.⁷

In fact, however, person and number are not categories of the verb properly speaking, but categories of the verb's argument(s), and since a verb may have more than one argument, it may have more than one person form attached to it, or (putting it more abstractly) it may inflect for more than one person(-number) category. For example, in Yimas (Papua New Guinea), a verb may have up to three different person-number affixes:

- (6) *Uraŋ* *k-mpu-ŋa-tkam-t*.
 coconut(G6.SG) G6.SG.ABS-3PL.ERG-show-PERF-3DU.DAT
 'They showed them two the coconut.' (Foley 1991: 208)

In other languages, the person-number affixes are not different for the different arguments but are only distinguished by their position, e.g. in Bantu languages such as Tswana:

- (7) *Ki-ló-χò-filè*.
 1SG.SUBJ-3SG.G11.OBJ-2SG.OBJ-give
 'I've given it to you.' (Creissels 2005: 63)

Here the subject and object indexes are different, but the theme and recipient suffixes are not different.

Thus, indexes are like nominals in that with different argument-classes they may have the same form, or different forms – this is analogous to subject and object nominals having different forms (nominative and accusative markers, adpositions) or the same form, distinguished only by linear order or context.

The different forms of nominals are usually called **case** forms. For indexes that have different forms for different argument-classes, this terminology is not normally used, but no other established terminology exists. I propose to call such different forms of indexes simply **index-sets**. The "set" terminology is familiar

⁷ Cf. quotations such as the following from an influential grammar of German: „Eine Kategorie des Verbs ist die der Person (im grammatischen Sinne). Sie ist in jeder konjugierten Form des Verbs enthalten. Es sind drei Personen zu unterscheiden...“ (Helbig & Buscha 1988: §1.3.3). The authors just say that person is „a category of the verb“.

from Mayan linguistics, for example, where traditionally two index-sets are distinguished, Set A (ergative/possessive) and Set B (absolutive), e.g.

(8) Tzutujil (Mayan; Dayley 1985: 62–64)

	Set A	Set B
SG 1	<i>nuu-/in-/w-</i>	<i>in-</i>
2	<i>aa(w)-</i>	<i>at-</i>
3	<i>r(uu)-</i>	\emptyset
PL 1	<i>q(aa)-</i>	<i>oq-</i>
2	<i>ee(w)-</i>	<i>ix-</i>
3	<i>k(ee)-</i>	<i>ee-</i>

One might alternatively extend the term *case* to index-sets, so we could say that a subject index bears nominative case, or that an object index bears accusative case. This has been done occasionally (e.g. Wichmann 2009 for Tlapanec), but it does not seem advisable as a general solution, because this would lead to very odd consequences (e.g. saying that 3rd singular *-s* in English verbs bears nominative case). Other reasons why *case* is rarely used for indexes are (i) that most languages with different index-sets do not have case-marking on nouns at all, and (ii) that indexes of different index-sets are rarely segmentable into “index stems” and “index-set markers”.

But it is important to recognize that index-sets and cases/adpositions are functionally quite parallel and can make quite similar distinctions (see Kibrik 2012). Thus, it is not far-fetched to label them with similar labels, such as “nominative index-set”, “accusative index-set”, and so on (as was done in (6) above; see also Haspelmath 2009: 510). Moreover, different index-sets may be diachronically derived from pronouns inflected for different cases. For example, the French nominative, accusative and dative indexes in (9) are derived from the Latin nominative, accusative and dative cases, respectively.

(9)

	Nominative	Accusative	Dative
1SG	<i>je</i>	<i>me</i>	
2SG	<i>tu</i>	<i>te</i>	
3SG.M	<i>il</i>	<i>le</i>	<i>lui</i>
3SG.F	<i>elle</i>	<i>la</i>	<i>lui</i>

In the terminology proposed here, one would not call these index-sets cases because the term *case* is reserved for nominals, and the person forms in (9) are bound forms and not independent personal pronouns (i.e. indexes and not nomi-

nals; Miller 1992 regards them as affixes). But since diachronically they derive from independent personal pronouns, it would of course not be completely wrong to talk about them in this way.

4 Conominating bound person forms

4.1 Conominals

Argument indexes can cooccur, in the same narrow clause, with nominals that have the same role and reference. We saw examples of such nominals above in (1)–(2). More examples are in (10)–(11), with the index alone in the (a) examples and the index together with the nominal in the (b) examples.

(10) Jaminjung (Mirndi; Schultze-Berndt 2000: 154)

- a. *Gan-angu warrag.*
 3SG>3SG-handle catfish
 ‘(S)he caught a catfish.’
- b. *Nalyarri-ni gan-angu warrag.*
 Nalyarri-ERG 3SG>3SG-handle catfish
 ‘Nalyarri caught a catfish.’

(11) Latin/Italian

- a. *Veni-t* *Vien-e*
 come.PRS-3SG come.PRS-3SG
 ‘he comes’
- b. *Marcus veni-t* *Marco vien-e*
 Marcus come.PRS-3SG Marco come.PRS-3SG
 ‘Marcus/Marco comes’

I propose to call such a nominal a **conominal**. In addition, it is useful to have a verb expressing the presence of a conominal of an index: We can say that an index is **conominated** when a coreferential nominal in the same clause is present. An index may be conominated by a full nominal (as in 10–11) or by a free pronoun (as in 1).⁸

⁸ Note that conominals only seem to occur with person indexes, not with independent personal pronouns (see Universal A in Appendix A). Croft (2001: 198, 2003: 16) and Siewierska (2004: §2.1.2.3) cite examples of conominated non-bound pronouns, but I believe that these person forms are actually bound forms. There is no space here to justify this claim.

By saying that the conominal must be in the same narrow clause, I am excluding dislocated nominals, as in (12) from French.

- (12) *Ma grande-mère, elle=l'=aimait, mon grand-père.*
 my grandmother 3SG.F.NOM=3SG.M.ACC=loved my grandfather
 'My grandmother, she loved him, my grandfather.'

Here the nominals *ma grande-mère* and *mon grand-père* are not conominals, but dislocated nominals that are outside the narrow clause, detached from it by an intonation break. Sentence (12) from French is thus similar to its English translation, where the dislocated nominals cooccur with free pronouns.

Now crucially, not all indexes can be conominated (i.e. cooccur with conominals) to the same extent. Broadly speaking, we can distinguish three different situations: A conominal may be **obligatory** (section 4.2), it may be **optional** (section 4.3), or it may be **impossible** (section 4.4) (cf. Siewierska 1999, Hengeveld 2012: Table 1).

4.2 Indexes with obligatory conominal: gramm-indexes

When the conominal is obligatory, the index tends to be highly grammaticalized and is usually called (*grammatical*) *agreement marker*. A possible short label for an index of this kind is therefore **gramm-index**. Well-known examples of gramm-indexes are the subject indexes in German and Russian, and also the 3rd person singular index *-s* in English. For 3rd person gramm-indexes, the conominal (agreement controller) can be a full nominal or a free pronoun, while for deictic-person gramm-indexes, it must be a free pronoun.

- (13) a. German

<i>ich komm-e</i> 'I come'	(* <i>komme</i>)
<i>du komm-st</i> 'you come'	(* <i>kommst</i>)
<i>sie komm-t</i> 'she comes'	(* <i>kommt</i>)
<i>Elli komm-t</i> 'Elli comes'	

- b. English

<i>she come-s</i>	(* <i>come-s</i>)
<i>Mary come-s</i>	

Gramm-indexes are very rare in the world's languages (cf. observation 3c),⁹ but since they occur prominently in the well-known European languages German and Russian (and marginally also in the even better-known language English), they have been very influential for the way linguists have been thinking about indexes in general. Gramm-indexing can be regarded as a canonical form of agreement, and indeed the term *agreement* or *concord* has been used since the 16th century for the relationship between the pronoun and the person marker in languages like German and English.¹⁰ But (grammatical) agreement is not a suitable concept for the next two cases (as discussed in section 9).

4.3 Indexes with optional conominal: cross-indexes

When the conominal is optional, indexing is often referred to as *cross-referencing*.¹¹ A convenient short label for an index of this kind is therefore **cross-index**, and instead of cross-referencing, we can also say *cross-indexing*. We saw cross-indexes in (1–2) and (10–11) above, where the index was conominated in (a) but not conominated in (b). In fact, most of the examples of indexes in this article are cross-indexes, as cross-indexes seem to be the most frequent kind of verbal index in the world's languages. Siewierska (1999) reports that among object indexes, gramm-indexes do not occur at all.

Siewierska uses the term *ambiguous agreement marker* for cross-indexes, but as this is based on a dual-nature view of cross-indexes for which there is no evidence (see section 5.3 below), this is not a good term. Kibrik (2011: 96) uses the term *tenacious pronoun* for cross-indexes, as opposed to *alternating pronoun* for

⁹ It seems that they almost exclusively occur with verbs, not with nouns, and quite marginally with adpositions (the only example I know of is Modern Welsh). The other two types of indexes occur widely with nouns and adpositions.

¹⁰ Palsgrave (1530) writes in the first grammar of the French language: “Adjetyves agre onely in genre and nombre, but theyr verbes agre with theyr nominatyve cases in nombre and parsone.” (OED, s.v. *agree*)

¹¹ It seems that this term goes back to Bloomfield (1933: § 12.9, p. 193–194) (see also Hockett 1958: § 25.5, p. 217–218). Bloomfield and Hockett did not adopt the German and English situation as a model for their primary distinctions, and did not simply subsume indexing/cross-referencing under agreement (which is another example of the limited influence of Eurocentrism on the thinking of American structuralists). Cross-reference is described by Bloomfield as involving an “actual mention” of the participant “in the shape of a substitute-form, resembling our pronouns” (= an index), which are “in cross-reference with a substantive expression that makes specific mention” of the participant (= a conominal). Examples are Latin *puella canta-t* ‘(the) girl she-sings’, and non-standard English *John his knife*, as well as Cree forms with “substitutive (pronominal) mention of both an actor and an undergoer”.

Siewierska (1999, 2004: 126) uses the term *anaphoric agreement marker* for pro-indexes, but as noted by Hengeveld (2012: n. 4), *anaphoric* is not appropriate for locuphoric person forms, and agreement is not involved either (cf. section 9).

5 Four ways of conceptualizing bound person forms

Now that I have laid out my favoured way of thinking about person indexes and talking about them, let us look at four ways in which the relevant phenomena have been conceptualized in the literature. Especially the most common type of indexing (cross-indexing) has been treated quite differently by linguists, even though the facts are undisputed.

The first three ways of conceptualizing bound person forms (i.e. indexes) have in common that they try to reduce all of them to the concepts of “pronoun” and “agreement” in one way or another. On the virtual-agreement view (section 5.1), cross-indexes are treated as if they were gramm-indexes (agreement). On the bound-argument view (section 5.2), they are treated as if they were pro-indexes (pronouns). On the dual-nature view (section 5.3), they are treated as if they were both, depending on the circumstances. The fourth view, which I will endorse here, treats indexes as a phenomenon *sui generis*, and thus does not try to subsume cross-indexing under either of the two less common types (agreement and pronouns).

5.1 The virtual-agreement view

In the virtual-agreement view, indexes are uniformly regarded as agreement markers, even when there is no conominal. In such situations, this approach claims that there is a virtual controller, which is not pronounced, but is still present in some way. Thus, Caesar’s *veni, vidi, vici* ‘I came, I saw, I conquered’ is represented as in (16). The empty pronoun, not the index, is the subject argument of the verb that controls its agreement.

(16) []_{PRO,ISG} *ven-i*, []_{PRO,ISG} *vid-i*, []_{PRO,ISG} *vic-i*

This approach has been adopted implicitly by many linguists over the last two centuries, and explicitly especially by most generative grammarians (at least

before Jelinek (1984) and Baker (1996), but also after these publications). In generative grammar, argument indexing with no conominal as in (16) is said to involve “pro-drop” (since Chomsky 1981) or “null subjects” (if the cross-indexing is restricted to subject indexing, as in most Romance languages; Rizzi 1982).

The problem with this approach is that it is abstract and Eurocentric. It assumes an inaudible virtual agreement controller that is justified only by the analogy with 3rd person indexes that are often conominated by full nominals giving more descriptive information about the referent than the index. In sentences like (11b) (Latin: *Marcus venit* ‘Marcus comes’), one may want to say that the subject is expressed only by the nominal *Marcus*, perhaps invoking a principle of uniqueness that does not allow an argument to be expressed twice. If one does this, one is then forced to assume an abstract zero pronoun for the case of (11a) (*venit* ‘he comes’), too.

It is very likely that this degree of abstractness was widely accepted only because of the influence of well-known European languages like German, English and (somewhat less clearly) Russian,¹³ which have gramm-indexing of the subject on the verb, where the conominal is obligatory (Dryer 2005: 411). From the perspective of these languages, it looks as if something is missing in unconominated cross-indexing patterns, so the notion of “pro-drop” may seem natural. However, we now know that the great majority of languages with bound person forms do not require a conominal (observation 3c),¹⁴ so if the possibility of conomination is recognized as normal, then the virtual-agreement view loses its attractiveness.

Moreover, in a number of languages, argument indexes make more person and number distinctions than independent personal pronouns. In these languages, the virtual-agreement view is particularly inappropriate (see Mithun 2013, in this volume, on Mohawk).

5.2 The bound-argument view

In the bound-argument view, cross-indexes are regarded as something radically different from gramm-indexes. While the latter are agreement markers, cross-indexes are nominal-like participants, pronouns of some sort, that happen to be bound. When a cross-index occurs with a conominal, it is still the index that is the argument of the verb, while the conominal is characterized vaguely as having “appositive” or “adjunct” status.

¹³ For conomination in Russian, see Kibrik (2013) in this volume.

¹⁴ Matthew Dryer (p.c.) informs me that in his database, only 26 languages (about 3% of the entire set of languages in the database) have subject affixes but require conominating pronouns. Of these, 10 are European languages.

This approach has been explicitly proposed in generative grammar by Jelinek (1984) and Baker (1996), but it has been favoured much more widely. In fact, it is well-known that it goes back to Boas (1911) or even earlier.

The problem with this approach is that it is quite unclear what it means that the conominals are not arguments. Authors typically hedge on this matter and rarely say precisely what they mean by “adjunct” or “apposition”. Often they say that the bound person forms are the “true arguments” of the verb (as if the conominals were also arguments of some kind, “pseudo-arguments”). Sometimes proponents of the bound-argument view claim that certain properties typical of arguments are lacking in the conominals in cross-indexing constructions, so that in these constructions we observe free word order, discontinuous constituents, and no flagging of the conominals. These latter claims are particularly characteristic of the so-called Pronominal Argument Hypothesis (cf. Jelinek 1984, and Baker 2001 for a good overview). However, the claims of this hypothesis have been disconfirmed rather thoroughly (e.g. Austin & Bresnan 1996, LeSourd 2006). Cross-indexing is more widespread than suspected by Jelinek and is found also in many languages that are not like Warlpiri, and free word order is not dependent on cross-indexing. Siewierska (2001) discusses the potential “apposition” status of cross-indexed conominals in great detail and finds no support for the claim that they systematically behave in a special way.

Thus, in many or most languages with cross-indexing, the conominals are indistinguishable from nominal arguments of languages without cross-indexing, and it seems ill-advised to say that they are not arguments.

5.3 The dual-nature view

In the dual-nature view, cross-indexes are regarded as being both agreement markers and pronouns (nominal-like participants) depending on the circumstances: When a conominal is present, they are agreement markers, and when no conominal is present, they are pronouns.

This approach has been adopted by Bresnan & Mchombo (1987) and by Van Valin & LaPolla (1997), Van Valin (2005).¹⁵ Siewierska (1999), (2004) adopts the term “ambiguous agreement” for cross-indexing, explicitly under the influence of Bresnan & Mchombo (1987).

¹⁵ This view has an ancient pedigree as well. Paul (1920: § 217, p. 311) writes about a „zweifache Funktion“ (dual function) of the suffixed pronoun in Latin: „In einigen Fällen dient es noch als Subjekt (lat. *lego, legi*), in anderen zeigt es nur durch die Kongruenz die Beziehung auf das Subjekt (*pater legit, ego scribo*).“

The problem with this approach is that no independent evidence is normally adduced in favour of the dual nature of cross-indexes. Rather, the dual nature of the forms seems to be imposed exclusively from outside, by linguists who start out with a concept of agreement and a concept of pronoun and who try to accommodate the phenomenon of cross-indexing in this conceptual framework. But cross-indexing is an extremely common and robust phenomenon in the world's languages, so if a conceptual framework is available that does not force a dual nature on these elements, it would be preferable. The virtual-agreement view and the bound-argument view attribute a single nature to cross-indexes, but we saw that they have their own serious problems. In the next subsection, we will see an approach that avoids all of these problems.

5.4 The double-expression view

In the double-expression view, cross-indexes are regarded neither as agreement markers nor as pronouns, but as elements providing person information that are compatible with further information in the same clause provided by conominals. In other words, they are regarded as phenomena *sui generis*, not as special cases of something else. This is the simplest view: We simply say that in a clause like Latin *venit* 'he comes', the index *-t* is the verb's subject argument (providing the information that the argument is a 3rd person referent available in the context), while in a clause like *Marcus venit* 'Marcus comes', the index and its conominal jointly constitute the subject argument. Thus, arguments may be doubly expressed in this view, which is clearly articulated in Kibrik (2011) and Schultze-Berndt (2011) (see also Steele 1989, Dixon 2010: 40).

The only possible disadvantage of this approach is that it goes against the expectation that arguments should not be expressed twice, but only by a single element. But there is no reason why this expectation should be made absolute. Uniqueness of argument expression has sometimes been elevated to a theoretical principle, but the primary motivation of this principle has been to exclude the possibility of different referential expressions expressing the same argument, not to exclude combined and distributed referential expressions such as index + conominal combinations. In general, distributed expression of meaning is not unusual in languages (observation 3d).

6 The continuum between gramm-indexes, cross-indexes and pro-indexes

Using the simple criteria of obligatoriness and possibility of a conominal, we can identify many indexes clearly as gramm-indexes, cross-indexes or pro-indexes. But there are also many cases where this criterion does not give clear results. As Corbett (2006: 100) notes, “most of the intervening territory [between the extreme cases of canonical agreement and pronominal affixes] can be filled”. This has been noted by Siewierska (1999) and emphasized by Siewierska & Bakker (2005), and it will be briefly illustrated in this section. The continuum-like nature of the three subtypes of indexing is the primary justification for giving a single name (indexing) to all of them. In the following subsections, I will briefly illustrate the “intervening territory” between the three cardinal types.

6.1 Between cross-indexing and pro-indexing

As noted by Siewierska (1999), the complementarity between index and conominal may depend on a variety of factors, e.g. on the contrast between independent pronoun and full nominal, as in Welsh, where the subject index looks like a cross-index in (17a–b) but like a pro-index in (17c–d).

(17) Welsh (cited after Siewierska 1999: 228–229)

- a. *Gwel-sant y ferch.*
see-3PL.PST the girl
'They saw the girl.'
- b. *Gwel-sant hwy y ferch.*
see-3PL.PST they the girl
'They saw the girl.'
- c. **Gwel-sant y bechgyn y ferch.*
see-3PL.PST the boys the girl
'The boys saw the girl.'
- d. *Gwel-odd y bechgyn y ferch.*
see-PST the boys the girl
'The boys saw the girl.'

In Yagua, the possibility of a conominal depends on word order. In (18a–b) the index looks like a cross-index, but in (18c) it looks like a pro-index.

- (18) Yagua (Peru; Payne 1990: 30)
- a. *Sa-juuy.*
3SG-fall
'She falls.'
 - b. *Sa-juuy Anita.* (sa-: cross-index)
3SG-fall Anita
'Anita falls.'
 - c. *Anita juuy.* (sa-: pro-index)
'Anita falls.'

But of course the indexes are the same in each case. These languages require more complex statements to characterize them typologically than the simple distinction between cross-indexing and pro-indexing.

6.2 Between cross-indexing and gramm-indexing

Like the presence of the index, the presence of the conominal may depend on a variety of factors. In several Swiss German dialects, for instance, the second person singular pronoun is obligatory in preverbal position, but it is optional (and usually absent) when it would come in postverbal position, as in questions:

- (19) Zurich German
- a. *Du gaasch.* (**Gaasch*)
you go.2SG
'You are going.'
 - b. *Woane gaasch?*
whither go.2SG
'Where are you going?'

Thus, in (19a) the 2SG suffix *-sch* looks like a gramm-index, while in (19b) it looks like a cross-index.

Moreover, conomining pronouns may not be simply obligatory or optional (and rarely present), but they may be more or less frequent in closely related languages or different stages of a language. For example, for Brazilian Portuguese of the last 150 years, Duarte (2000) cites the data in Figure 1, where we see that the

frequency of conominating pronouns as a percentage of their total potential presence rose quite gradually. It is difficult to say where the cross-indexing ends and the gramm-indexing begins.

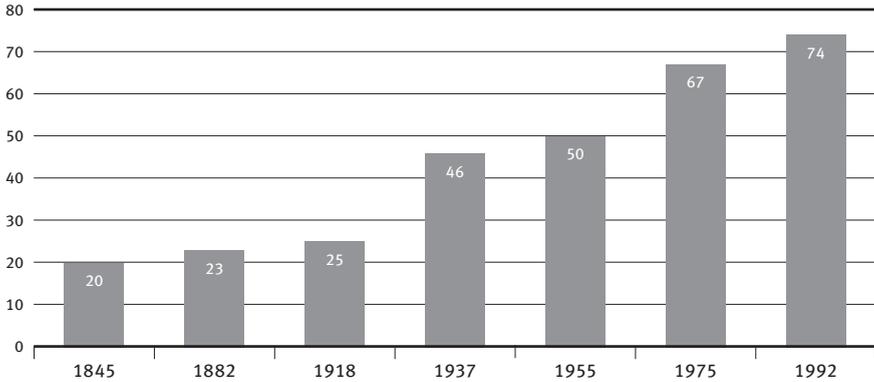


Figure 1. Lexical subject pronouns in Brazilian Portuguese theatre plays (Duarte 2000, cited after Kaiser 2009)

Or consider the Slavic languages, where generally Russian is regarded as a gramm-indexing language and the others are regarded as cross-indexing, but the data in Table 1 show that different languages show different frequencies, and conominating pronouns are far from obligatory in Russian (see also Kibrik 2013, in this volume).

Table 1. Conominating subject pronouns in various Slavic languages (Seo 2001, cited after Corbett 2006: 106)

	no pronoun	pronoun	% pronoun
Russian	443	1557	77.9 %
Bulgarian	1556	444	22.2 %
Serbo-Croatian	1683	317	15.9 %
Czech	1829	171	8.6 %
Polish	1859	141	7.1 %

7 Coding syntactic relationships: the non-symmetry of “dependent marking” and “head marking”

The conceptualization of argument indexes is also relevant to the well-known head vs. dependent marking distinction. Here I will briefly point out that in the light of the argument-indexing perspective, this typological contrast looks somewhat different.

A view that one encounters commonly, especially after Nichols's (1986) influential article on head and dependent marking (but see already Lehmann 1983), is that the two marking loci are symmetrical, in the sense that both loci can perform the same function, that of marking the relationship between the head and the dependent, more specifically the role of the dependent. In head marking, the marking element marks the dependent's role on the head and references the dependent (by reflecting its person, number and/or gender features), while in dependent marking, the marking element occurs directly on the dependent. Both head and dependent marking may include role information, as we saw in section 3.

Schematically, this can be shown as in (20)–(21), which are schematic renderings of a sentence such as ‘The mother helped the sons’.

- (20) head marking
mother(F.SG) – 3SG.F.NOM-help-3PL.M.ACC – sons(M.PL)
- (21) dependent marking
mother-NOM – help – sons-ACC

But crucially, this symmetry exists only for full nominal dependents. When the arguments are person forms (as in the majority of cases in most types of discourse), a language with a dependent-marking construction of the type (21) usually still shows dependent marking, as schematized in (22) below. But a language with a head-marking construction as in (20) normally shows the corresponding pattern in (23), where we cannot say that the arguments are “marked” by marking elements on the verb – the marking elements themselves ARE the arguments.

- (22) dependent marking
she-NOM – help – them-ACC
- (23) “head marking”
3SG.F.NOM-help-3PL.M.ACC

Maintaining that the contrast in (22)–(23) is of the same general type as the contrast in (20)–(21) thus presupposes that the virtual-agreement view is adopted, as is made explicit by Nichols (1992: 59).¹⁶ This leads to curious formulations, such as Nichols's statement that in Indo-European languages, verbal person marking “indexes certain features of one word on another” (1992: 48), as in Latin *am-o* ‘I love’, *ama-s* ‘you love’, etc. But in these examples, there is just one word, so saying that Latin *-o* indexes features of a word on another word makes sense only if one assumes an abstract analysis with an empty free pronoun whose features are indexed on the verb (as in section 5.1 above). But as we saw earlier, such empty free pronouns are primarily motivated by a Eurocentric perspective.

Thus, “head-marking” is a problematic concept that cannot be used instead of indexing to avoid the problems associated with the distinctions between gramm-indexing, cross-indexing and pro-indexing (cf. Witzlack-Makarevich 2011). As formulated by Nichols (1986, 1992), the head/dependent marking distinction is too broad anyway, as head-marking encompasses not only person marking on the head, but also construct marking on the head, and dependent-marking also includes gender and number agreement of modifiers (as in Italian *nuovo libro* ‘new book’ (masculine) vs. *nuova casa* ‘new house’ (feminine)) (see also Croft 2001: section 5.4.1 for critical comments on the head/dependent marking distinction).

Of course, the contrast between (21)/(22) and (20)/(23) is a striking one, but it is probably best characterized by simply saying that the languages with (21)/(22) rely on **argument flagging** (case or adpositional marking), while languages with (20)/(23) rely on **argument indexing**.

8 A coherent concept of pronoun

Bound person forms (or indexes) are often called “bound pronouns” (Kibrik 2011: 92–104), “pronominal affixes” (e.g. Mithun 2003, Corbett 2006: 99–112), “incorporated pronouns” (e.g. Jones 1911, Bresnan & Mchombo 1987) or simply “pronouns”.¹⁷

¹⁶ “Languages with rich verbal agreement generally omit independent overt pronouns except in emphatic or contrastive contexts (i.e., these are pro-drop languages).”

¹⁷ Especially in the widely used (but rather odd) term “pronominal argument language/hypothesis” (Jelinek 1984), the term “pronoun/pronominal” is clearly used in the sense of ‘bound person form’. Nobody has ever suggested that free pronouns play a role in this context, so a term such as “index-argument language/hypothesis” would be much more appropriate.

Of course, bound person forms share salient properties with free personal pronouns, especially the translation into languages like German and English, which employ the same forms for contrastive and non-contrastive use. But calling them “pronouns” leads us to an incoherent notion of “pronoun”. Note that originally, the term *pronoun* was used for free forms that can *constitute a referential phrase on their own without a noun*, or in other words, occur instead of a noun in a referential phrase.¹⁸ Thus, the forms in the right-hand column in (24) are pronouns, as opposed to the modifier (or determiner) forms in the left-hand column.

(24)	modifier	pronoun
demonstrative	<i>this</i>	<i>this one</i>
possessive	<i>my, your, ...</i>	<i>mine, yours, ...</i>
interrogative	<i>which</i>	<i>which one, what, who</i>
anaphoric	<i>the</i>	<i>he/she/it</i>
deictic		<i>I/you/we</i>

In older grammars, one often reads about possessive adjectives *my, your*, etc., contrasting with possessive pronouns *mine, yours*, etc.

This use of the term “pronoun” may not be highly salient anymore, but it has not disappeared, so we still talk about “personal pronouns”, because there are also other kinds of pronouns. But since personal pronouns are the most frequent type of pronoun in languages like German and English, it is easy to forget that there are non-personal pronouns, and to use “pronoun” in a narrower sense to refer just to personal pronouns. From there it is a small step to extending the use of “pronoun” to person forms which are not free forms (i.e. to pro-indexes), and next to person forms which do not stand instead of nouns, but cooccur with them as conominals (i.e. to cross-indexes). This type of semantic change of a grammatical term is not unusual: Grammatical terms originally denoting a formal category are commonly changed to denote semantic categories (cf. Lehmann 2007).

Semantic change is a fact of life and is not too damaging in everyday speech, but in technical scholarly discourse, ambiguity must be avoided if we want to be taken seriously as scientists. Either one uses “pronoun” only in the sense “person

¹⁸ Lyons (1977: 637) notes that if taken etymologically, *pro-nouns* should always substitute for *nouns*, though in fact they mostly stand in positions of nominals. However, since every noun can serve as a nominal, I do not find the distinction so significant. Moreover, Lyons thinks that the „substitution“ metaphor implies that the anaphoric function of pronouns is more basic than the deictic function, whereas the opposite is the case. However, if we just say that a pronoun stands in a position in which a noun could occur, this applies equally to deictic and anaphoric nouns and nominals.

form”, or only in the sense “noun substitute”. Since the former is the innovative use and the alternative term *person form* is readily available and well-established (cf. Siewierska 2004), it seems best to restrict *pronoun* to the sense of “noun substitute”.

9 A coherent concept of agreement

Agreement can be defined as “the phenomenon by which a word carries morphological features that originate somewhere else” (Bickel & Nichols 2007), i.e. a situation in which a target form has grammatical marking that is controlled by another element. The most typical situation of agreement is gender agreement, as in Italian *il nuov-o libro* [the.M new-M book(M)] vs. *la nuov-a casa* [the.F new-F house(F)].

However, in cross-indexing constructions, there is usually no “other element” that could be said to control the person feature of the verb. In the majority of actual cases, the person form on its own suffices to express the argument, and it is only in a minority of cases that we find a conominal. Linguists who still want to view this situation in terms of agreement have resorted to one of two strategies:

- (i) Some have said that there is a controller in the clause after all, but it is not pronounced (this is the virtual-agreement view that we saw in section 5.1 above);
- (ii) Others have said that there is a controller, but it does not occur in the same clause: Just as independent personal pronouns often agree (in number and gender) with an antecedent in a preceding clause, cross-indexes can be said to agree with an earlier antecedent (Corbett 2006: 21–23, 110–111).

The problem with the latter view is that while independent personal pronouns do indeed show gender and number agreement in many cases, they never show *person agreement* (see observation 3b above). Deictic forms like *I* and *you* refer to speech-act participants directly and never show person agreement, i.e. the second occurrence of *I* in an expression like *I think that I must go* refers to the same entity independently, rather than agreeing with the first *I* (cf. Lehmann 1982: 211). For allophoric forms like *she* and *he*, a description in terms of person agreement (agreement with an antecedent full nominal that has a third person feature) might seem more promising, but it does not work well for such forms either. First, third person forms can often be used without any overt antecedent that could control agreement (as in *Who is he?*, pointing to a person). Second, it is not clear that full nominals need to have a third person feature (after all, they can normally be used with other persons as well, as in *I, Claudius*, or *you idiot*).

With English independent pronouns, cooccurrence of deictic person forms and full nominals is possible only in appositional constructions, but in cross-

indexing constructions, it is quite common for languages to allow full nominals to conominate deictic person forms, as in (25)–(27) (Mithun 1985 referred to such cases as showing “disagreement”).

- (25) Spanish (Moravcsik 1978: 351, cf. also Jelinek 1984: 48)

La gente de aquí no comemos eso.
‘We people from here don’t eat that.’

- (26) Lai (Chin, Tibeto-Burman, Bickel 2000: 587)

Tsó:npiaktu: nī? lāw ka-thlo? vé:.
teacher ERG field 1SG.A-work even
‘Even as a teacher I can work in the field.’

- (27) Georgian (Boeder 2002: 88)

Did-i tevz-i mo-m-it’an-a babua-m Tamaz-s.
big-NOM fish-NOM PREV-1SG.OBJ-carry-3SG.SUBJ grandfather-ERG Tamaz-DAT
‘Grandfather brought me, Tamaz, a big fish.’

Moreover, many languages allow nonsingular indexes to occur with singular conominals to express an inclusory construction, as in example (28). Here the verb *rlini* ‘go’ has the cross-indexing 1st person dual prefix *mirri-*, which is conominated by the singular noun ‘man’.

- (28) Marra (Heath 1981: 302)

Rna-na gariyi-marr mirri-rlini.
M.SG-ART.NOM man(NOM)-NON.PL 1DU.EX-go.PST.CONT
‘The man and I went.’

One could try to subsume all these cases under agreement in some way, but I am not aware of a definition of agreement that characterizes this notion as comprising a coherent set of phenomena and that includes (25)–(28). Lehmann’s (1982: 203) definition of agreement excludes them, as noted explicitly by Lehmann (1982: 218). (Corbett’s (2006) “canonical agreement” is explicitly intended only to account for the least controversial cases of agreement, i.e. it does not attempt to define a coherent concept of agreement.)

Thus, since there is no coherent concept of agreement that would comprise the most widespread cases of bound person forms (cross-indexes), reference to “(person) agreement” is not necessarily helpful when discussing bound person forms.

10 Conclusion

By shifting the attention from “pronouns” to **person forms** in her 2004 book and related work, Anna Siewierska has drawn attention to the striking similarities between all kinds of person forms, whether they are bound or free, and whether they are noun substitutes (pronouns) or may/must cooccur with conominals. Here I have focused on bound person forms, which are conveniently called person indexes, and I have argued that one should not try to conceptualize person indexes uniformly as either “pronouns” of a special kind or as “agreement markers” of a special kind. As shown by Siewierska, bound person markers are most commonly cross-indexes (optionally cooccurring with a conominal), and these are best regarded as phenomena sui generis. The model of some well-known (but quite unusual) European languages should not be imposed on the majority of the world’s languages.

Acknowledgements

I am grateful to Matthew Dryer, Michael Cysouw, Dik Bakker, David Erschler, and Alena Witzlack-Makarevich for useful comments on an earlier version of this article. I also thank audiences in Zurich and Leipzig for discussing these issues with me. This article ultimately grew out of an e-mail discussion I had with Anna Siewierska after reading and reviewing her 2004 book *Person*, which inspired me to think in these directions. Thank you, Anna, for everything!

Abbreviations

1 first person, 2 second person, 3 third person, A agentive, ABS absolutive, ACC accusative, ART article, CONT continuative, DAT dative, DEF definite, DU dual, ERG ergative, EX exclusive, F feminine, G6 gender class 6, G11 gender class 11, IN inclusive, M masculine, N neuter, NOM nominative, OBJ object, PERF perfect, PL plural, PREV preverb, PRS present, PST past, SG singular, SUBJ subject.

Appendix A:

Some universals involving argument indexes

The following are hypothesized universals which I lack the space to justify here. The primary purpose of this list is to show that we need a comparative concept of *argument index*, without which the universals cannot be formulated.

- A. Bound person forms (= indexes), but not independent personal pronouns, may occur with a conominal.
- B. Bound pronouns always index arguments, never non-arguments (though of course not all arguments need to be indexed by bound pronouns).
- C. If a language has both cross-indexes and independent pronouns, the independent pronouns cannot be used as bound variables (Siewierska 2004: 11).
- D. The scale “gramm-index > cross-index > pro-index” is aligned with the scale “affix > clitic”. In fact, gramm-indexes are always affixes (Siewierska 1999: 231).
- E. Gramm-indexing is always with the A argument (agent of typical transitive verb) and with no other argument (Siewierska 1999: 238).
- F. If a language cross-indexes the P argument, it also cross-indexes the A argument (Siewierska 1999: 238).
- G. If in a language indexing is possible in some contexts but not in others, and if independent personal pronouns are obligatory in some contexts but optional in others, then they are obligatory when indexing is impossible.
- H. In languages with index paradigms that do not make all person distinctions, obligatory conomination (= gramm-indexing) is more likely than in languages with fully distinctive index paradigms.
- I. Bound person forms (= indexes), but not independent personal pronouns, may show syncretism of 1st person singular and 2nd person singular.

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