

# Syntax and Syncretisms of the Person Case Constraint

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## Abstract

The Person Case Constraint is frequently concomitant with Case Syncretism. We provide a syntax-driven account of both phenomena that relies on the dual role that phi features play in selecting and in Case licensing argument DPs. The account differs from other syntactic approaches to the PCC in the role it affords the applicative head in the Case system and in the attention it pays to the syntactic structures that feed morphology and therefore induce syncretism.

**Keywords** agreement, features, morphology-syntax interface; Kiowa, Romance

## 1 Introduction

This paper aims to isolate language-specific morphological idiosyncrasies from the core syntactic mechanisms responsible for Person Case Constraint (PCC) effects. On the syntactic side, this comprises showing that the PCC is irreducibly a matter of how syntactic features are organized in grammatical structures. On the morphological side, it comprises explaining how these syntactic structures feed morphological effects concomitant with the PCC in unrelated languages.

Here, we introduce a new set of data from Kiowa, a Kiowa-Tanoan language of Oklahoma. Kiowa displays a classic PCC paradigm: in ditransitive constructions, agreement triggered by the direct object must be third person.<sup>1</sup> An apparently independent fact about Kiowa morphology is that non-third person arguments trigger identical agreement whether they are direct or indirect objects. We term this Case Syncretism. The same syntactic and morphological facts, that is the Person Case Constraint and Case Syncretism, hold in French (and other Romance languages, and elsewhere). Our aim is to show that this correlation has a grammatical basis.

Below, we show that the PCC follows simply from a theory of how  $\varphi$ -features are distributed on functional heads in clause structure and how the valuation of these features is constrained by core syntactic principles (Chomsky 2000, 2001). Case Syncretism follows naturally from a grammatical architecture where this kind of syntactic structure feeds the morphological component.

## 2 A Correlation to be Explained

This section illustrates the Person Case Constraint and Case Syncretism, and their correlation, in French and Kiowa.

### 2.1 The Person Case Constraint

In many languages, agreement for some semantically well-formed combinations of person and case is restricted in how it may be realized. The most famous example of this is the *me-lui* constraint reported by Perlmutter (1971). French has accusative clitics for first singular, *me*, and third singular, *le*, and it has dative clitics for these person-number combinations as well, *me* and *lui*, respectively. Accusative and dative clitics may cooccur:<sup>2</sup>

- (1) On me le montrera.  
one me.DAT it.ACC show.FUT  
'They will show it to me.'

However, when accusative and dative clitics do cooccur, the accusative clitic must be third person (the order of the clitics is irrelevant to the point under discussion):

- (2) \* On me lui montrera.  
one me.ACC him.DAT show.FUT  
for 'They will show me to him.'

That this restriction is not semantic is evidenced by the acceptability of the following paraphrase.

- (3) On me montrera à lui.  
one me.ACC show.FUT to him  
'They will show me to him.'

This phenomenon is found in other languages such as Greek (Anagnostopoulou 2003), Catalan (Bonet 1991) and Basque (Laka 1991); see Haspelmath (2002) for a wide range of genetically diverse languages displaying the constraint. We take the descriptive generalization governing these cases to be:

- (4) **The Person Case Constraint (PCC)**  
In a ditransitive, where both internal arguments are realized as phonologically weak elements, the direct object must be third person.

Phonologically weak arguments are clitics (including so called 'weak pronouns') and agreement. To avoid taxing negatives, we eschew the term 'non-third person'. Rather:

- (5) First and second person are said to be **local**.

Consequently, the PCC can be rephrased as a ban on ditransitives with *local* direct objects that are phonologically weak.

In Kiowa, the PCC affects the **verbal agreement prefix**, a phonologically fused element that obligatorily precedes every Kiowa verb. This prefix is composed entirely of  $\varphi$ -features contributed by the subject, indirect object and direct object (Merrifield 1959b, Watkins 1984, Harbour 2006a). For instance, in (6), the prefix is composed of features of the first person singular subject, the second person singular indirect object and the third person singular direct object.<sup>3</sup>

- (6) Thalíí hegó gyá- pɔɔbɔ́ótɔɔ.  
 boy now I : to.you.SG : him-bring.FUT  
 ‘I’ll bring the boy to you.’

Postpositional phrases, in contrast to DPs, do not trigger agreement. This results in alternations, such as (7), where a DP is either free-standing and agrees with the verb or is the complement of a postposition and does not.<sup>4</sup>

- (7) Thalyóp nó- xán ~ Thalyóp nóó-ɛ̃ e- xán.  
 boys to.me : them-arrived Boys I- LOC they-arrived  
 ‘The boys came to me.’

Although agreement prefixes can encode three arguments, this is impossible when the combination of arguments violates the PCC. For example, when the verb *bɔ́* ‘bring’ takes an indirect object and a second person direct object, the verbal agreement prefix cannot encode all three arguments. Rather, the indirect object argument occurs as a non-agreeing postpositional phrase.<sup>5, 6</sup>

- (8) Hegó k!yátáák!ii-ɛ̃ em- pɔɔbɔ́ótɔɔ.  
 now chief- LOC I : you.SG-bring.FUT  
 ‘I’ll bring you to the chief.’

This contrasts with (9), where the indirect object can occur as an agreeing DP because the direct object is third person and the PCC is not violated.

- (9) Hegó k!yátáák!ii gyá- pɔɔbɔ́ótɔɔ.  
 now chief I : to.him : him-bring.FUT  
 ‘I’ll bring him to the chief.’

Thus, Kiowa exhibits the PCC, just as French does. We now illustrate a second commonality between the two languages.

## 2.2 Case syncretism

In French, the form of the direct object clitic is identical to that of the indirect object clitic for any combination of number and *local* person.

- (10) On me / te / nous / vous voit.  
 One me.ACC / you.SG.ACC / us.ACC / you.PL.ACC sees  
 ‘They see me / you / us / you all.’

- (11) On me / te / nous / vous donnera un livre.  
 One me.DAT / you.SG.DAT / us.DAT / you.PL.DAT give.FUT a book  
 ‘They will give me / you / us / you all a book.’

This is not the case for third person clitics:

- (12) On le / la / les voit.  
 One him.ACC / her.ACC / them.ACC sees  
 ‘They see him / her / them.’
- (13) On lui / lui / leur donnera un livre.  
 One him.DAT / her.DAT / them.DAT give.FUT a book  
 ‘They will give him / her / them a book.’

We term this property of local clitics Case Syncretism.

(14) **Case Syncretism**

For any combination of number and *local* person, direct object agreement/clitics and indirect object agreement/clitics are identical.<sup>7</sup>

An interesting question is whether Case Syncretism is a peculiarity of French (and other Romance languages), deriving from diachronic idiosyncrasies, or perhaps even just coincidental, given the relative simplicity of French morphology.

A rather striking fact is that Kiowa also displays Case Syncretism (as indeed do Chinook, Georgian and Yimas, all of which also exhibit the PCC; Silverstein 1986, Hewitt 1995 and Foley 1991, respectively). However, given the richness of Kiowa morphophonology, its effects are far more prevalent. We present three.

The first can be seen by comparing a local argument, such as ‘us’, with a third person argument, such as third plural animate, ‘them.ANIM’, in two sentence frames: ‘They all saw \_\_\_’ and ‘They all gave it to \_\_\_’. Consider, first, ‘us’. Here, the agreement prefixes are identical.

- (15) Dó- bǫǫ.  
 they : us-saw  
 ‘They saw us.’
- (16) Dó- ǫǫ.  
 they : to.us : it-gave  
 ‘They gave it to us.’

By contrast, consider ‘them.ANIM’. Here, the agreement prefixes are clearly different.<sup>8</sup>

- (17) Ém- bǫǫ.  
 they : them.ANIM-saw  
 ‘They saw them.’

- (18) Á- ɔɔ.  
 they : to.them.ANIM : it-gave  
 ‘They gave it to them.’

The lack of contrast for agreement prefixes in (15)–(16) versus the substantial contrast between (17)–(18) generalizes across other local versus non-local persons (see the table in Appendix A).

A second morphophonological effect relates to the tonal contours of the prefix and the following verb. Consider a singular local object, such as ‘me’. Here, we find falling tone on the prefix and low on the verb.

- (19) Âa- bọ́.  
 they : me-saw  
 ‘They saw me.’

The same falling-low pattern is found when ‘me’ is an indirect object.

- (20) Âa- ɔɔ.  
 they : to.me : it-gave  
 ‘They gave it to me.’

Similarly, consider a plural local object, such as ‘us’. Here, we find high tone on both prefix and verb.

- (21) Dó- bọ́.  
 they : us-saw  
 ‘They saw us.’

The same high-high pattern is found when ‘us’ is an indirect object.

- (22) Dó- ɔ́.  
 they : to.us : it-gave  
 ‘They gave it to us.’

In general, for a given local  $\varphi$ -feature set, the tonal pattern of the prefix and verb is the same whether the object or indirect object bears these features.<sup>9</sup> Though this holds for some third person  $\varphi$ -feature sets, it is not true generally: tone is not constant in the columns of (23).

(23)

	...him’	...them.DL’	...them.PL’
‘I saw ...	<b>low-high</b> gya-bọ́	<b>low-high</b> nen-bọ́	<b>high-high</b> dé-bọ́
‘I gave it to ...	<b>high-high</b> gyá-bọ́	<b>high-high</b> nén-bọ́	<b>high-high</b> bét-bọ́

The third morphophonological phenomenon concerns the distribution of the vowel ɔ in the agreement prefix. The simple generalization is that ɔ occurs only when an indirect object triggers agreement. For instance, consider two sentence frames, ‘\_\_\_ broke a stick for me’ and ‘\_\_\_ broke a stick’. These are identical except that agreement prefixes in the first will encode an indirect

object, whereas those in the second will not. As examples, (24) gives four agreement prefixes, corresponding to different subjects. All contain  $\mathfrak{o}$ .

(24)		‘___ broke a stick for me’
	They.DL	énô $\mathfrak{o}$
	They.ANIM	dô $\mathfrak{o}$
	You.DL	mónô $\mathfrak{o}$
	You.PL	bódô $\mathfrak{o}$

The table in (25) shows exactly the same four subjects. However, there is no indirect object. Consequently, none of the agreement prefixes contains  $\mathfrak{o}$ .

(25)		‘___ broke a stick’
	They.DL	én
	They	et
	You.DL	mén* <sup>10</sup>
	You.PL	bét

The generalization is that  $\mathfrak{o}$  only occurs in agreement prefixes that encode an indirect object.

However, there are exceptions to this generalization: some agreement prefixes contain  $\mathfrak{o}$  but do not encode an indirect object:

- (26)
- a. *dó* as in ‘\_\_\_ saw us’
  - b. *gô* as in ‘\_\_\_ [not 1 SG] saw you.SG’
  - c. *mó* as in ‘\_\_\_ saw you.DL’
  - d. *bó* as in ‘\_\_\_ saw you.PL’

These four exceptions all involve local direct objects. So, again, in accord with Case Syncretism, we find local direct objects displaying behavior otherwise confined to indirect objects.

We have seen that the PCC and Case Syncretism cooccur in both French and Kiowa. The natural question to ask is whether there is a basis for this cooccurrence.

### 3 Does the PCC derive from Case Syncretism?

The previous section showed that Kiowa, like French, displays Case Syncretism, that is, local direct objects and local indirect objects are realized identically when phonologically weak, while third person agreement/clitics distinguish between direct and indirect objecthood. We also saw that Kiowa, again like French, obeys the PCC, that is, when direct and indirect objects both trigger agreement/clitics, the direct object must be third person. In this section, we investigate whether it is possible to derive the PCC from Case Syncretism, a move which would account for their cooccurrence in Kiowa and French. After underscoring the initial plausibility of this idea, we argue that it would actually be a mistake to pursue this approach, on Kiowa-internal and on crosslinguistic grounds.

An initial indication that it might be productive to derive the PCC from Case Syncretism

is the impossibility in Kiowa of having two agreeing indirect object arguments. To see this, consider benefactives and possessives. The following sentences show that both trigger indirect object agreement.

(27) K!ódál bó-                      óó-                      hootoo.  
car     I : to.you.PL : it-temporarily-get.FUT  
'I'll borrow a car for you all.'

(28) K!ódáttó bót-p!óóótó.  
cars     I : to.you.PL : them-wash.FUT  
'I'll wash y'all's cars.'

It is possible to construct sentences with both a benefactor and a possessor. In such cases, only one can trigger indirect object agreement.

(29) Ám- k!ódal nóó-kom    gyá-                      hóótó.  
your-car    my-friend I : to.him : it-get.FUT  
'I'll get y'all's car for my friend.'

(30) K!ódál nóó-kom    bó-                      óó-                      hootoo.  
car    my-friend I : to.you.PL : it-temporarily-get.FUT  
'I'll borrow y'all's car for my friend.'

We can conclude from this that Kiowa has a uniqueness condition on agreeing indirect objects, plausibly deriving from the morphological structure of the prefix, which has only a single indirect object agreement "slot".

(31) **Double IO Agreement Filter** \* IO-AGR IO-AGR

Given (31) and given Case Syncretism, the PCC follows. Case Syncretism entails that local direct objects trigger indirect object agreement. Therefore, the combination of a true syntactic indirect object (such as a benefactive argument) and a local direct object will result in two instances of indirect object agreement. This violates (31). Hence, local objects are predicted to be impossible with syntactic indirect objects, which is precisely the content of the PCC.

There are several reasons to reject this general approach; some concern the filter per se, others the tight correlation it draws between Case Syncretism and the PCC.

**A Kiowa-internal argument.** The first problem concerns third animate plural indirect objects in Kiowa. These are never morphologically realized. This results in a systematic ambiguity for transitive sentences with third person objects: they may, or may not, be construed with a, say, benefactive 'for them.ANIM'. E.g.:

(32) Gya-                      hóógya.                      (Watkins 1984, p. 198)  
I : (to.them.ANIM :) it-got  
'I got it (for them).'

Given this zero realization, the combination of 'for them.ANIM' with a local direct object will

not violate the Double IO Filter, on the assumption that this filter constrains overt morphological realizations. However, this is simply incorrect:

- (33) \*Kóígú em- pòhíítò.  
 Kiowas I : you.SG-bring.FUT  
*for* ‘I’ll take you to the Kiowas.’

This sentence contains an indirect object and a local direct object. However, the indirect object argument is third plural animate and so it has no morphological exponent in the agreement prefix. The Double IO Filter incorrectly predicts (33) to be well-formed. However, the PCC as stated in (4) correctly rules out (32) and so is active even when the Double IO Filter is irrelevant.

As expected, it is possible to express (33) in Kiowa. However, to do so, ‘Kiowas’ must appear in a non-agreeing PP, just as ‘chief’ does in (8).<sup>11</sup>

- (34) Kóí- em em- pòhíítò.  
 Kiowa-LOC I : you.SG-bring.FUT  
*for* ‘I’ll take you to the Kiowas.’

It does not help to assume that the Double IO Filter applies to syntactic rather than morphological representations, since, in the syntax, we have an indirect object, ‘to the Kiowas’, and a direct object, ‘you’, not two indirect objects.<sup>12,13</sup>

**A crosslinguistic argument.** A more general argument against deriving the PCC from Case Syncretism via the Double IO Filter comes from languages in which these three come apart. In Catalan, for example, a succession of two indirect object clitics is possible, provided one is an ‘ethical dative’:

- (35) No te li faran res. (Bonet 1991, p. 64)  
 not you.SG.ETH 3SG.DAT do.3PL.FUT anything  
 ‘They won’t do anything to him/her [“on you”].’

However, Catalan observes the PCC:

- (36) \*A en Josep, me li va recomanar la Mireia. (ibid., p. 178)  
 to the Josep me.ACC 3SG.DAT goes recommend.INF the Mireia  
*for* ‘Mary will recommend me to Josep.’

Clearly, then, the PCC does not derive from the Double IO Filter.

Similarly, Greek shows the independence of the PCC and Case Syncretism. In this language, local direct object clitics and local indirect object clitics are morphologically distinct, at least in the singular:



(37)		Indirect Object	Direct Object
	1SG	mu	me
	1PL	mas	mas
	2SG	su	se
	2PL	sas	sas
	3SG.MASC	tu	ton
	3SG.FEM	tis	tin
	3SG.NEUT	tu	to
	3PL.MASC	tus	tus
	3PL.FEM	tus	tis/tes
	3PL.NEUT	tus	ta

However, Greek also observes the PCC (Anagnostopoulou 2003):

- (38) Tha mu to stilune.  
 FUT me.GEN him.ACC send.3PL  
 ‘They will send it to me.’

- (39) \*Tha tu me stilune.  
 FUT him.GEN me.ACC send.3PL  
*for* ‘They will send me to him.’

Once again, this shows that any attempt to derive the PCC from Case Syncretism is unlikely to succeed; however, see section 6 for an account of Greek.

In place of a morphological filter, we will pursue a syntactically driven explanation of these effects.

## 4 Theoretical Preliminaries

Two broad types of account of the PCC have been offered within generative linguistics: syntactic and morphological.<sup>14</sup> We will not review these in detail (see Anagnostopoulou 2003), but merely sketch them to situate our own approach to the problem.

Typical of morphological accounts is Bonet (1991, see also Bonet 1995 and Miller and Sag 1997). Bonet’s core claim is that the combination of an indirect object with a local direct object is not syntactically ill-formed, rather the morphological component rules out such a combination as unacceptable. However, if a language makes a morphological repair strategy available—such as deletion of a feature to produce a PCC-compatible feature combination—then the structure becomes acceptable though it reflects only a subset of the arguments’  $\varphi$ -features. On the other hand, if no repair strategy is available, the sentence is rejected by the Morphological Component and is therefore ungrammatical. Bonet’s account is not then an explanation of the PCC per se, but rather an explanation in terms of morphological theory of how potential PCC violating feature combinations can be realized.

Syntactic approaches trade on the intuition that the PCC is the reflex of competition in the syntax. Typical of these is Anagnostopoulou (2003) (but see also Boeckx 2000, Ormazabal and

Romero 2002, Béjar and Řezáč 2003). Anagnostopoulou assumes that agreement inflection (and clitics) are reflexes of Agree/Move relations (an assumption we will also adopt). The core of her proposal is that PCC effects arise when both a Dative and an Accusative argument check features with a single functional head. The dative argument checks person features (and is, essentially, defective for number), while the accusative argument needs to check all of its features. The derivation for double object constructions crucially involves the checking of the person features of the dative argument first, which means that the relevant functional head has checked person features:

(40) DP[DAT, person] F[~~person~~, number]

The derivation continues with the accusative argument moving and checking its features with this same functional head. If the accusative argument is first or second person, then these features cannot be checked, since the person feature on F is already checked.

(41) \*DP[DAT, person] DP[ACC, person, number] F[~~person~~, number]

However, following a long tradition, Anagnostopoulou assumes that third person arguments actually lack person features and bear only number features. This means that a third person accusative argument will be able to check its features, and the derivation will converge:

(42) DP[DAT, person] DP[ACC, number] F[~~person~~, number]

The PCC then derives from the general feature checking architecture, combined with a particular view of the derivation of double object constructions and the idea that, while dative arguments need not check number features, accusative arguments (and, in fact, structurally case marked arguments in general) must check all their features.

Our account appeals to some similar ideas—we too will assume that third person differs from first and second in that it is less specified, and we also adopt a feature checking approach. However, rather than deriving the PCC as an effect of competition between two arguments for case licensing by a single head, we argue that it follows from a defective feature specification on a case licensing head. The major theoretical and empirical differences arise with respect to (i) the theory of the morphology/syntax interface that gives rise to partial correlation between Case Syncretism and the PCC (section 5) and (ii) instances of the PCC where the verb is unaccusative (section 6).

As a preliminary to our own account, we first lay out the basics of Kiowa clause structure. By considering basic facts about word order and selection relationships between adverbials and morphemes on the verb, we develop a view of Kiowa clause structure (section 4.1). We then outline our theoretical assumptions: in section 4.2, we briefly specify a feature geometry for  $\varphi$ -features, and indicate how this enters into the analysis of the Kiowa facts. In section 4.3, we detail the mechanism whereby arguments are introduced into clause structure, and how they are syntactically licenced.

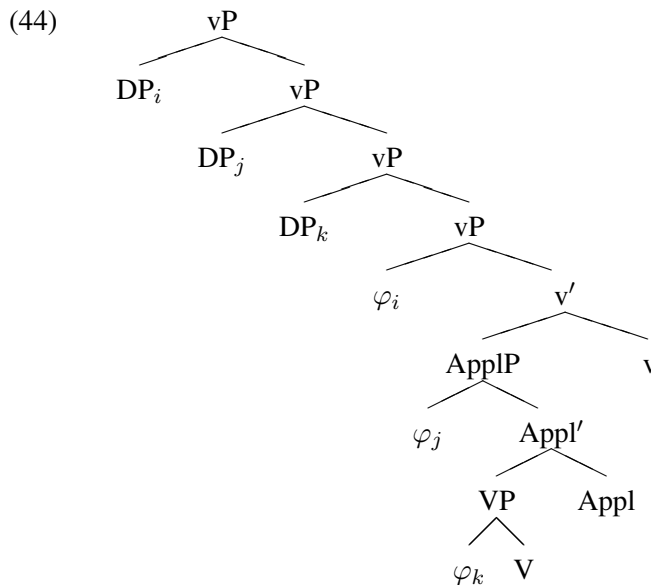
### 4.1 Kiowa clause structure

As a preliminary to our analysis of the PCC and Case Syncretism, this section lays out some basic facts about the clause structure of Kiowa.

Kiowa is a head-final language. As already mentioned, its verbs agree with up to three DPs, the agreement being expressed as a tightly fused verbal prefix.

- (43) Á- ɁɁ.  
they : to.them.ANIM : it-gave  
'They gave it to them.'

On a preliminary analysis, Kiowa fits the Baker/Jelinek profile for polysynthetic languages reasonably well, exhibiting freedom of word order, noun incorporation, rich agreement and absence of quantifiers for ‘no’, ‘most’, to name a few characteristics from Jelinek (1984), Baker (1996). Following the general thrust of this work, we will assume that DP arguments in Kiowa are adjoined and are associated with argumental agreement. Concretely, we propose the following verb phrase structure:



According to (44), the three arguments of the verb are the nodes marked  $\varphi$ . These are spelled out as the verbal prefix. (Note that (43) is, in consequence, not a pro-drop construction; rather, it is a sentence with three arguments but without any adjoined DPs.) Three points require further comment: what the vP-internal heads are; what ' $\varphi$ ' is; the syntactic status of the DPs as adjuncts and the motivation for their particular position in the tree.

Following much recent work (Kratzer 1996, Hale and Keyser 1993, Ramchand 2003, Pytkäinen 2002, Cuervo 2003, Marantz 1993, Borer 2004), we adopt the idea that arguments are introduced by functional heads. We assume the existence of a functional head, *v*, which introduces the external argument (Kratzer 1995, Hale and Keyser 1993). External arguments in Kiowa are agents, that is, generally volitional controllers of events. Similarly, we assume the existence of a

functional head, Appl, which introduces applicative arguments (Marantz 1993, Pylkkänen 2002). Applicative arguments in Kiowa are recipients of ditransitives, benefactors, malefactors, sources, causees and possessors.<sup>15</sup> We will assume objects to be introduced as sisters of V, though this is not a crucial assumption. We refer to the three arguments as, respectively, **subject**, **indirect object** and **direct object**, using these purely as descriptive labels.

The specifiers of the heads V, Appl and v are simply bundles of  $\varphi$ -features, not full DPs (Baker 1996). The content of these  $\varphi$ -feature bundles is addressed in section 4.2. Though the spellout relationship between the  $\varphi$ -feature bundles and the phonological form of the prefix is non-trivial, Merrifield (1959a), Watkins (1984) and Harbour (2006a) have shown the prefixes are indeed the spellout of the features of subject, direct object and indirect object.

As expected for a polysynthetic language, full DPs are optional and freely ordered. For example, in the first clause of (45), we find the order, indirect > direct object; however, in the second clause, we find the reverse.

- (45) Məothoxóúhij məok!ón ó- sóúhêl- depeidou, éíhəw-al.  
*coyote nose he : to.him : it-sharpened-because now- too*  
 hétó məok!ón məothoxóúhyop mós xóúgó bét- dós  
*still noses coyotes like awls : to.them : them-be*  
 ‘Because [Seyndey] filed the coyote’s nose, nowadays still the noses Harrington 1946  
 of coyotes are awl-shaped.’

Furthermore, DPs can be either preverbal (46) and (47) or postverbal.

- (46) Nós-p!ii gya- tóútəw. (Watkins 1984, p. 244)  
 my- sister I : her-talk.to  
 ‘I am *or* was talking to my sister.’
- (47) An gya- bəu- təútəw nós-p!ii. (Watkins 1984, p. 244)  
 HAB I : her-often-talk.to my- sister  
 ‘I often talk to my sister.’

Our ongoing research suggests that the full variety of word orders is best explained by appeal to the interaction between discourse-related displacement operations and a basic word order, subject > indirect object > direct object.<sup>16</sup>

Finally, we explain why the DPs in (44) are vP-adjoined and not higher in the structure. In addressing this question, we take the opportunity to sketch the higher functional structure of the Kiowa clause. Pertinent information comes from sentential particles and their interaction with inflectional morphology on the verb.

Kiowa verbs inflect for aspect, negation, futurity, and evidentiality. These categories are expressed by suffixes.

- (48) K!yáq̣ḥi Ø- tóŋn̄i h́ón ɛ- xáng- ɔ- t!ɔ- dei ɔ́hɔ. (Watkins 1984, p. 329)  
 man he-say.IMPF.HSY NEG they.DL-reach-NEG-FUT-HSY there  
 ‘The man said that they (two) won’t be getting *or* won’t manage to get there.’

Some of these suffixes are in a syntactic dependency relation with independent particles that occur before the verbal complex. For instance, when a verb is marked with a negative suffix, it is always preceded by the negative particle *h́ón*, as in the previous example. Other particles generally cooccur with aspect, futurity, or evidentiality. The following example shows this for *béthɔ* ‘unknowingly’, which requires a hearsay-marked verb.

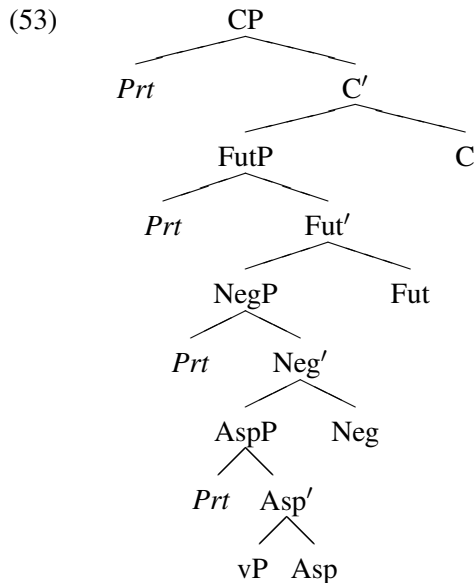
- (49) Béthɔ a-póŋ-k!ŋ́de-hel.  
 unknowingly I-see- bad- HSY  
 ‘I didn’t realize I was so ugly.’

These particles generally occupy fixed positions in the clause, although they may be moved if they bear what tentatively identify as special stress (cf. adverbs in Italian, Cinque 1999). Moreover, particles that govern evidentiality precede modal particles that govern futurity, and these precede modal and aspectual particles that govern aspect:

- (50) **Béthɔ h́ón** ám em- dŋ́-m̄ɔ-*hel*.  
 unknowingly NEG you you.SG-be- NEG-HSY  
 ‘I didn’t realize it wasn’t you.’
- (51) **Háyátto h́ón** Ø- deŋ- h́éŋ-m̄ɔ-*t!ɔ*.  
 maybe NEG he-sleep-die-NEG-FUT  
 ‘Maybe he won’t fall asleep.’
- (52) **Béthɔ an** ɔ- b̄ou- h̄onx!ou- **yii-** t!ɔ-*dei*.  
 unknowingly HAB : to.him : REFL-always-come.late-IMPF-FUT-HSY  
 ‘I didn’t realize he was going to keep on coming late.’

The particle order and the morpheme order are mirror images, as the typeface indicates. *Béthɔ* selects *-hel* or, after the future marker, *-t!ɔ*; *háyátto* selects *-m̄ɔ*; *an* selects *-yii*.

This mirroring suggests the following kind of structure:<sup>17</sup>



Of these projections, it appears that AspP is obligatory, and we shall assume that it is the locus of VP external case checking (much as T is in more familiar languages).

We now return to the proposal that DPs are adjoined to vP. In the informationally neutral word order, DPs occur between the particles and the verb. For instance, taking an example with a single overt argument, any of the following orders is possible.

- (54) Hón máthøn Ø- xáænôo.  
 NEG girl she-arrive.NEG  
 ‘The girl didn’t arrive.’
- (55) Máthøn hón Ø- xáænôo.  
 girl NEG she-arrive.NEG  
*approximately* ‘The girl, she didn’t arrive.’
- (56) Hón Ø- xáænôo máthøn.  
 NEG she-arrive.NEG girl  
*approximately* ‘She didn’t arrive, the girl.’

Example (54) represents the informationally unmarked, or broad focus, order. When the DP precedes the particles, as in (55), it is interpreted as a sentence topic or focus. Postverbally, as in (56), it is discourse-old. The rightmost particle can, therefore, be regarded as marking the right edge of the area of the clause which hosts left-displaced arguments. In consequence, arguments such as *máthøn* ‘girl’ in the informationally unmarked word order must remain low in the structure, essentially within vP.

The following example illustrates that in an informationally neutral sentence, overt DPs occur between the particles and the verb and that their underlying order is subject > indirect object > direct object.

- (57) Hón P!óóthópdek!ii Paithalíí áádó ó-                      thém- ʒəm- ɔɔ.  
 NEG Daniel                      Vincent stick he : to.him : it-break-make-NEG  
 ‘Daniel didn’t make Vincent break the stick.’

This concludes our comments on and justification for the structure given in (44).

## 4.2 Feature Inventory

An important aspect of our account of the Person Case Constraint and of Case Syncretism is the nature of the  $\varphi$ -feature bundles in (44), to which now we turn.

Kiowa agreement marks four morphosyntactic categories: person, number, class and empathy. An articulated theory of the features behind these categories has been developed by Noyer (1992) and Harbour (2006a, 2006b). For current purposes, we treat number itself as a feature, with the possible values singular, dual and plural; similarly, we treat person as a feature ‘participant’ with the values 1 and 2. Class, irrelevant here, is systematically disregarded. We propose a privative feature [empathy] (ANIM is glosses), specified for certain nominals, the referents of which are regarded, culturally, as worthy of empathy: adult Kiowas, sometimes children, sometimes horses. We represent feature-value combinations as:

- (58) [participant :     , number :     ]

where the lacunae are filled by values. For instance, first person inclusive dual is represented as:

- (59) [participant : 12, number : dual]

In our current notation, we stipulate that values for the number feature are mutually exclusive and obligatorily specified. In contrast, the participant feature may be specified for both values or for neither. We wish to emphasize, however, that these ‘features’ are mere notational conveniences which allow us to simplify the exposition of the structures which follow. In Appendix B, we discuss what we believe the features really to be, and provide a derivation of the stipulations about number and participant values just stated.

Third person has been commonly claimed to differ from first and second (Benveniste 1966, Taraldsen 1995, Ritter 1995, Kayne 1989 among others). In our system, there are two ways to represent third person: (i) by specifying only number (and empathy); (ii) by specifying number, (empathy) and participant, with this feature lacking a value. For instance, third person singular can have either of the following representations:

- (60) a. [participant : , number : singular]  
 b. [number : singular]

We tie this formal difference to an interpretive one: specification for [participant : ] entails semantic animacy (which we take to be akin to ‘capable of mental experience’, cf., Reinhart’s (2000) feature [ $\pm$ Mental state]). This is a natural suggestion, given that local persons ([participant : 1], [participant : 2], [participant : 12]) are all semantically animate. This motivates the idea that specification for the participant feature per se, irrespective of its value, entails semantic animacy. It

follows from this that a third person pronoun bearing [participant : ] will be interpreted as animate. In contrast, there is no entailment that a third person pronoun lacking the feature participant is (in)animate.

Note that semantic animacy is also entailed by [empathy], though only a small class of nouns bears the feature. Furthermore, a nominal may quite properly refer to a semantically animate referent, even in the absence of syntactic specification for the features [participant : ] or [empathy].

We have now seen how feature bundles correlate with classes of pronominals and that a bundle without [participant : ] but with [number : ] is third person. This gives us the following typology:

- (61)
- a. [participant : value, number : value] = First and second person pronominals of any number
  - b. [participant : , number : value] = semantically animate third person pronouns of any number
  - c. [number : value] = third person pronominals, with no entailments as to semantic animacy

### 4.3 Syntactic mechanics of case and agreement

We now turn to the distribution of  $\varphi$ -features in the phrase structure. In section 4.3.1, we discuss how arguments' semantic restrictions are featurally encoded. In section 4.3.2, we discuss how arguments are licensed. And in section 4.3.3, we illustrate how the system works via a schematic example.

We restrict our analysis in this paper to unaccusative, unergative, transitive and ditransitive verbs. PCC effects have also been found in other languages in causative and other clause union constructions. In Kiowa, we have found the elicitation of *make*-type causatives difficult to the extent that we doubt their productivity; other clause union constructions involve VP incorporation: we have undertaken no systematic investigation of the syntax of these as yet, however, spontaneously produced examples suggest that the internal arguments of the embedded predicate do not induce agreement at all. These constructions, then, do not appear to bear on what we propose here.

#### 4.3.1 Semantics of arguments

In Kiowa, as in other languages, some arguments have restricted interpretations. Indirect objects (specifiers of Appl) are always interpreted as semantically animate, i.e., capable of experience. This restriction is familiar from Indo-European languages (Fillmore 1968, Pesetsky 1995); for instance, it is responsible for the oddness of examples like (62), where the indirect object *the conference* has to be somehow interpreted as personified.

- (62) ? We sent the conference the abstract.

The subject (specifier of v) is also interpreted as animate and, additionally, as exerting control over the event (Watkins 1984). This can be seen in the following contrasts.



- (63) a. K!óáttó é- ót.  
dish he : it-drop.PERF  
'He dropped the dish (deliberately, in a fit of anger).'
- b. K!óáttó ó- ótkyá.  
dish : to.him : it-drop.DETR.PERF  
'He dropped the dish (accidentally).'

In this example, we have a contrast between a controlling and a non-controlling 'subjects' of the verb *ót* 'drop'. When the 'subject' is interpreted as not being in control of the event it triggers indirect object agreement and the verb is detransitivized (morphologically marked here by an affix).

A further example of the same contrast is seen with the future affix. This affix has two allomorphs (Watkins 1984, p. 170–172), *tóó* for verbs interpreted as agentive, *t!óó* for non-agentive ones. This allomorphy correlates with what kind of agreement is marked in the prefix: subject agreement correlates with agentive marking, and indirect object with non-agentive:

- (64) a. Móp!ál gyat- héídé- tóó...  
trash I : them-remove-FUT.AGT  
'When I've cleared the trash away, ...'
- b. Móp!ál yá- héídái- t!óó...  
trash : to.me : them-remove.DETR.PERF-FUT.NON-AGT  
'If I can get things cleared away, ...'

Direct objects are not subject to the interpretative restrictions associated with higher positions.

We implement the interpretational restrictions on the specifiers of Appl and *v* by requiring their specifiers to have a particular syntactic specification: the specifier of Appl must be instantiated with the [participant : ] feature, while the specifier of *v* must bear an interpretable feature [control]. The semantic interpretation of the [participant : ] feature involves animacy, as discussed above, while that of [control] involves the control over the event that typifies agenthood in Kiowa.

### 4.3.2 Syntactic licensing of arguments

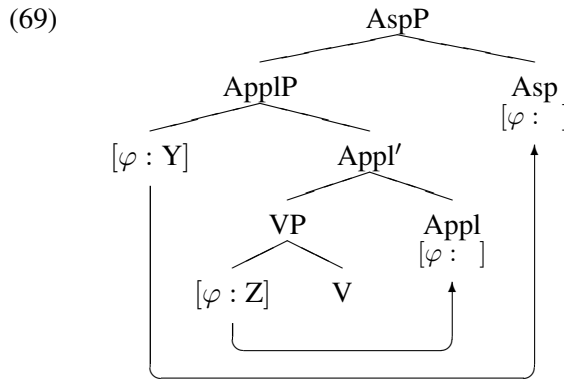
Arguments introduced by the verb, Appl and *v* must be syntactically licensed. We implement this, following Chomsky (2001), by assuming that DPs need to check structural Case and that this involves them entering into an Agree relation with a head bearing uninterpretable  $\varphi$ -features. These  $\varphi$ -features are unvalued, and obtain a value from an argument via Agree. We notate this as follows:

- (65)  $F[\varphi : ] \dots DP[\text{participant : value, number : value}] \mapsto$   
 $F[\text{participant : value, number : value}] \dots DP[\text{participant : value, number : value}]$

We assume, again with Chomsky, that a feature is uninterpretable if it enters the derivation without a value. Agree is constrained so that it holds between an unvalued feature and the closest matching feature (Chomsky 2000).



A third possibility is that Appl is present but v absent (unaccusatives with indirect objects). In this instance, the direct object checks case with Appl and the indirect object with Asp.

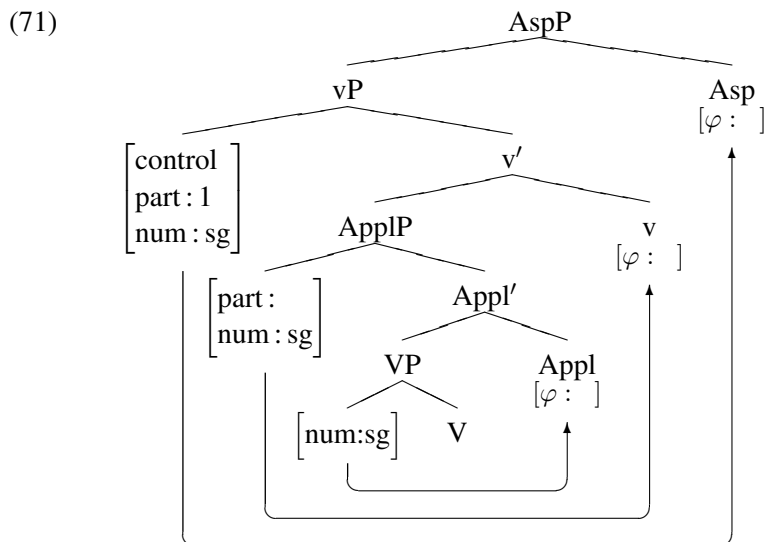


### 4.3.3 A schematic example

We now illustrate how this system derives a schematic example involving a ditransitive verb.

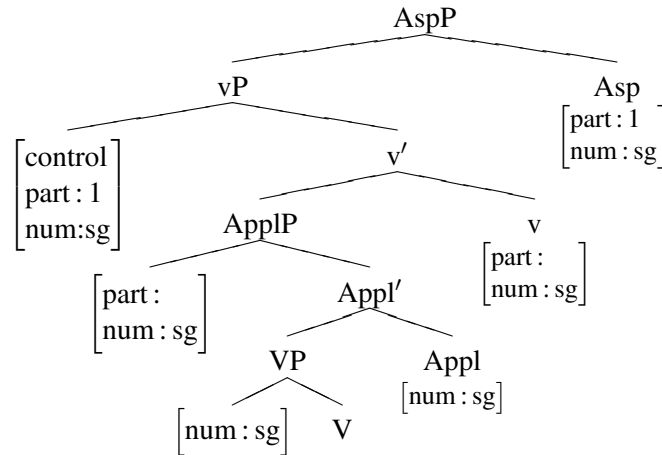
- (70) Gyá-            ḡḡ.  
 I : to.him : it-give.PF  
 'I gave it to him.'

The structure for (70), before feature valuation has taken place, is:



Recall that Appl requires that its specifier bears [participant : ], and that v requires its specifier to bear [control]. Concentrating first on the argument in the specifier of v, in our example this is the argument that Agrees with Asp and it checks Asp's uninterpretable  $\varphi$ -features. Similarly, the argument introduced by Appl Agrees with v and checks v's  $\varphi$ -features. Finally, the object checks the uninterpretable features of Appl. After valuation, we have:

(72)



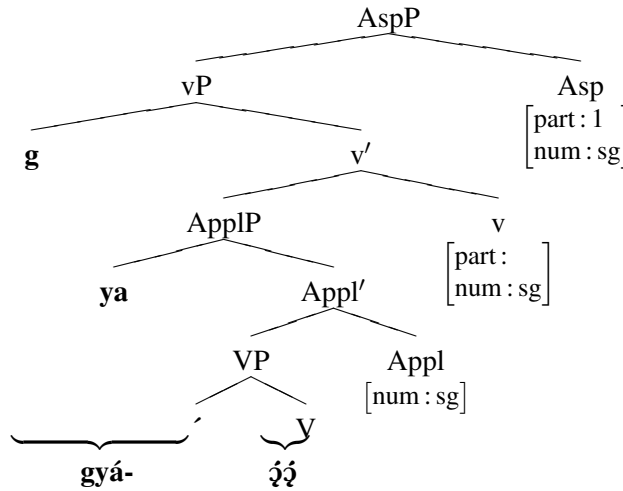
Note that the difference between the third person object and the third person indirect object is that the former bears no specification for [participant : ], whereas the latter does (it is [participant : , number : singular]). This difference in feature specification leads to a difference in phonological exponence:

- (73) a. [participant : , number : singular]  $\Leftrightarrow$  ' (high tone)  
 b. [number : singular]  $\Leftrightarrow$  **ya**

Noting in addition (74), we have (75):

- (74) [control, participant : 1, number : singular]  $\Leftrightarrow$  **g**

(75)



This analysis makes the idea of subject agreement, indirect object agreement and direct object agreement epiphenomenal. There is no special case diacritic which distinguishes these types of agreement (such as NOM or ACC). What is relevant is the semantically interpretable feature [participant : ], which distinguishes third person indirect objects from third person direct objects, and the feature [control], which distinguishes subjects from non-subjects.

## 5 Derivation of the PCC and Case Syncretism

We can now explain the basis of the PCC and Case Syncretism.

Recall that the PCC disallows the cooccurrence of agreement with both a local direct object and an indirect object. Given the system that we have just set up, this is equivalent to the following statement (to be derived immediately below):

- (76) Appl cannot enter into an Agree relation with a [participant : ] argument in its complement domain.

That is, if Appl is present, the direct object must be third person, as any argument lacking the feature [participant : ] is automatically third person.

There is an interesting complementarity here: we have seen previously that Appl requires participant specification on its specifier, but (76) states that it cannot probe for a participant feature in its complement domain. We suggest that these two properties are linked and in fact more general:

- (77) **Generalization**

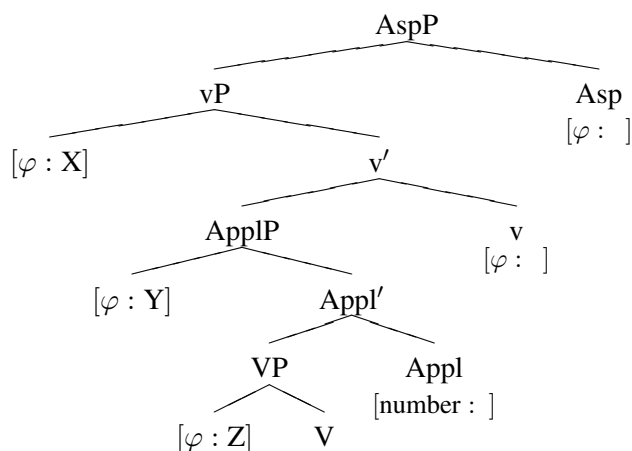
The features which a functional head requires its specifier to bear cannot be used as probes in the head's complement domain.

This follows naturally from a constellation of independently motivated assumptions. We have already argued above that the specifier of Appl is subject to semantic restrictions that follow if it obligatorily bears a participant feature. The only mechanism syntax provides to implement this is a probe-goal relationship between Appl and its specifier. Probe-goal relations between a head and its specifier are only possible when the head's complement domain lacks a goal that matches the probing feature(s) (Řezáč 2003).

To derive (77), and a fortiori (76), suppose that Appl bears a full complement of  $\varphi$ -features, just like Asp and v. If Appl's participant features match and are valued by participant features on a lower DP (a first or second person object), then Appl will be unable to select a specifier. The resulting syntactic structure will have no semantic interpretation, since Appl requires an argument (Pylkkänen 2002) (of course, Appl cannot bear multiple participant probes, one for the direct object and another for the indirect object, owing to the set-theoretic axiom  $\{a, a\} = \{a\}$ .)

We can now offer the following representation the Kiowa clause:

(78)



Here, the features on Appl, v and Asp are those that probe lower arguments (to establish Case relations). So, although all three enter the syntax with a full complement of uninterpretable  $\varphi$ -features, the requirements on the specifier of Appl prevent Appl from probing for [participant : ] in its complement domain.

In the absence of Appl, the direct object will Agree with v, if the verb is transitive, or Asp, if it is intransitive. If the direct object is third person, and, so, bears only number, this involves a full  $\varphi$ -set valuing itself against a partial set. This leaves the participant features of v/Asp unvalued. We assume that, when the person and number features probe together as a single  $\varphi$ -probe, they can be valued by any well formed  $\varphi$ -set, including that of the object. Here, we leave this in a somewhat stipulative form; see Harbour (2006a) for an approach to uninterpretability that derives the result.

This system permits us, further, to explain why Case Syncretism affects only local arguments. In essence, our explanation comes down to the fact that local arguments are always specified for [participant : ], whereas third person arguments are not always so specified.

More specifically, consider the difference between a third person singular *direct* object and a third person singular *indirect* object. The only  $\varphi$ -feature such arguments bear intrinsically, i.e., in virtue of their meaning, is [number : singular]. However, Appl forces a third person singular indirect object to bear the feature [participant : ] too (this is how Appl syntactically enforces the selectional restriction that its specifier be semantically animate). Consequently, a third person singular direct object is simply [number : singular], but a third person singular indirect object is [participant : , number : singular]. Now, presence versus absence of [participant : ] is something that phonological exponence can be sensitive to. It follows that third person direct object agreement can differ from third person indirect object agreement. (This is precisely what we saw in (72)–(75): *ya* and *ʻ* are both agreement forms for third person singular, but one is for indirect ([participant : ]), the other for direct ([participant : ]-less), objects.)

Consider now local arguments. [participant : 1] is the person specification for first person exclusive, [participant : 12] for first person inclusive and [participant : 2] for second person. All three include [participant : ], inherently, so, Appl will contribute nothing to the feature bundle of a local argument that is not already present in consequence of its meaning. For example, a first person singular direct object is [participant : 1, number : singular], and a first person singular indirect object is [participant : 1, number : singular]. What Appl adds to third person arguments

and what differentiates third person direct from indirect objects, namely [participant : ], is already present for local arguments. Consequently, realization of local direct object agreement and local indirect object agreement involves one and the same  $\varphi$ -feature bundle; hence, Case Syncretism.

## 6 Consequences

We now turn to several consequences of our proposal and ways in which it differs from other accounts of the PCC.

### 6.1 Unaccusatives

A first prediction is the impossibility of unaccusative verbs which take both a local direct object and an indirect object. This prediction holds in Kiowa: the only way to express an example like ‘I came to you’ will be via a non-agreeing postpositional phrase:<sup>19</sup>

- (79) Ám-ẹj a-xán.  
 you-LOC I-arrived  
 ‘I came to you.’

To see how this works, consider the unaccusative verb *xán* ‘arrive’. Derivation of (79) produces the following structure.

- (80) [ Asp<sup>0</sup> [ApplP (you) [ Appl<sup>0</sup> [VP I V<sup>0</sup> ] ] ] ]
- 

With Appl being valued by the internal argument, the internal argument is forced to be third person, as Appl cannot both enter into an Agree relation with an argument specified as [participant : ] and select its specifier.

Spanish further confirms this prediction (Ormazabal and Romero 2002) :

- (81) \* Tú me llegaste tarde.  
 you.NOM me.DAT arrived.2SG late  
*for* ‘You came late to me.’

Interestingly, however, what holds for Kiowa and Spanish does not hold for Greek:

- (82) Tu irtha. (Anagnostopoulou 2003, p. 254)  
 him.GEN came.1SG  
 ‘I came to him.’

The example is a clear analogue of (81) and (82), but it is acceptable, so in Greek, a ditransitive construction displays the PCC, while an unaccusative one does not.

Maintaining our analysis, we suggest that, in Greek as in Kiowa, the only feature on Appl that can probe its complement domain is number. In a ditransitive, T probes and checks the features

of the subject, *v* those of the indirect object, and Appl those of the direct object, just as in Kiowa. This constrains the direct object to be third person.

However, we suggest that Greek differs from Spanish in that T is able to probe past the indirect object and to check participant features on the direct object. Naturally, this difference is irrelevant when the verb is ditransitive: presence of *v* means that the subject is the highest argument and so that is what T will probe (just as in simple transitives). In the absence of *v*, however, ability to probe past the indirect object is precisely what makes structures like (82) licit in Greek. That T does indeed enter a relation with the direct object is evident the agreement the verb bears: the  $\varphi$ -features fused with tense are those of the direct object. We assume that the parameter that differentiates Spanish from Greek is orthogonal and additional to those analyzed above.

Thus, with respect to PCC effects with unaccusatives, Kiowa and Spanish pattern together to the exclusion of Greek. However, there is a second aspect of unaccusatives with respect to which Spanish and Greek pattern together to the exclusion of Kiowa. It is clear that in both Spanish and Greek T bears features of the direct object when unaccusatives with datives are licit. For Greek this is unproblematic, as T probes the direct object directly. However, the question arises as to why Spanish works in the same way, when T cannot probe the direct object in the presence of Appl in this language. In fact, the mechanism is straightforward. We know that T possesses a  $\varphi$ -probe, that the indirect object is not a potential goal, and that the direct object is not either. The only other source of  $\varphi$ -features in the complement domain of T is Appl itself. The result is that the  $\varphi$ -features of the direct object are transmitted to T via Appl (either T probes Appl, or Appl raises to V as part of V-to-T movement), which results in T bearing features of the direct object.

Kiowa direct objects, by contrast, trigger one and the same agreement form whenever there is an indirect object. That is, unlike Greek and Spanish, the form of the agreement does not depend on whether there is a subject for T to Agree with. A typical example is:

- (83) Hó yí k!yááhîj nén- xán khídêl?  
 Q two men :to.you.SG :them.DL-arrived yesterday  
 ‘Did two men come to you yesterday?’
- (84) Yíí báou nén- ǵǵ.  
 two cats I :to.you.SG :them.DL- gave  
 ‘I gave you two cats.’

The crucial point is that (83) is an unaccusative with indirect object and (84) is a ditransitive, but the agreement prefix is identical in both. In complement to this, there are substantial similarities between subject agreement in one argument unaccusatives and (di)transitives. Typical examples are:

- (85) Ba- /E- xán.  
 you.PL- /they-arrived  
 ‘You all/They arrived.’
- (86) Bá\*- /É\*- ǵǵ.  
 you.PL : it- / they : it-arrived  
 ‘You all/They gave it away.’



## 6.2 Animacy

A second aspect of our account relevant to current debate concerns animacy. Ormazabal and Romero (2002) broaden the PCC to a constraint on agreement with animate direct objects. That is, they assign to [ $\pm$ animate] a role similar to that played by [participant:] in our system. The empirical basis for their approach is an interesting set of facts from *leísta* dialects of Spanish. In these varieties, the clitic usually reserved for dative arguments, *le*, is also used for animate direct objects, yielding the following contrasts:

- (87) Lo / le vi.  
3ACC.[−animate] / 3ACC.[+animate] saw.1SG  
'I saw it/him.'
- (88) a. Te lo di.  
2DAT.SG 3ACC.[−animate] gave.1SG  
'I gave it to you.'
- b. \* Te le di.  
2DAT.SG 3ACC.[+animate] gave.1SG  
*for* 'I gave him to you.'

Ormazabal and Romero propose that *v* encodes animacy agreement with the direct object, when the verb is of the right semantic ilk. They treat dative agreement essentially as involving preposition incorporation. Without going into details, their account is that animacy agreement and preposition incorporation clash with each other and causing the derivation to crash.

This approach predicts that agreement for an animate direct object cannot cooccur with indirect object. Our account makes no such prediction, and, with Kiowa as its empirical focus, this is felicitous: agreement with animate direct objects does occur with indirect objects in Kiowa.

- (89) Nén- hól. (Harrington 1928, p. 249)  
I : to.him : them.ANIM-killed  
'I killed them [people] for him.'

As noted in section 4.2, the feature [empathy], which entails semantic animacy, is relevant for the specification of the verbal agreement prefix in Kiowa. However, it does not interact with the PCC. The likely source, in our system, for the animacy effects Ormazabal and Romero observe is, again, the feature [participant : ]. This feature, like [empathy], entails semantic animacy, and it is the feature responsible for PCC effects.

As a reviewer notes, this approach is supported by examples like:

- (90) \*Él me llegó tarde  
he me.DAT arrived.3S late  
'He arrived late on me'

Ordinarily, unaccusatives with third person direct objects are acceptable in Spanish (e.g., *Me llegó tarde*). However, according to Ormazabal and Romero, the strong pronoun *él* must refer to animates. If, as just suggested, this is encoded in Spanish by [participant: ], then our system

straightforwardly predicts the ungrammaticality of (90).

One further result that emerges from our system concerns reflexives. In French, reflexives pattern with local arguments in PCC configurations. For instance, (91) is unacceptable.

- (91) \*On se lui montrera.  
 one REFL.ACC him.DAT show.FUT  
*for* ‘They will show themselves to him.’

In Kiowa, however, reflexive agreement is identical to animate plural agreement. This leads naturally to the assumption that reflexives too are encoded by [empathy], rather than [participant : ]. This predicts that Kiowa reflexives, just like animates, are licit with indirect objects, in contrast to Romance. An example of this prediction is (89), which does indeed have a reflexive interpretation, ‘I killed myself for him’ (Harrington 1928).

### 6.3 Partial Case Syncretism

Although our system creates syntactic representations that naturally feed Case Syncretism, these syntactic representations do not force it. The syncretism arises because local direct and indirect objects bear the same  $\varphi$ -feature set. If we realize these features in a straightforward fashion, that is, not looking at the surrounding context, then Case Syncretism follows. However, if the realization of the agreement does depend on the surrounding context, then Case Syncretism is no longer forced.

To see this, take a case where there is a local direct object; it follows that there is no Appl head (otherwise the PCC is violated). However, when there is a local indirect object, there clearly has to be an Appl head. This means that even though the local direct and local indirect objects both value the higher head with the same  $\varphi$ -feature set, the two cases are distinguished by the presence versus absence of the Appl head. The Appl head can then serve as a context conditioning the realization of  $\varphi$ -features. This leaves scope for languages that, like Greek, obey the PCC without exhibiting Case Syncretism. Specifically, in the indirect~direct clitic pairs *mu~me*, *su~se* (37), *u* realizes [number : singular] in the context of Appl (and [participant : ]), and *e* realizes the same features when Appl is absent. The appeal to contextualization by Appl is required independently, to account for other syncretisms in (37). Observe that third person plural indirect object clitics syncretize for gender: masculine, feminine and neuter are all *tus*. This can be captured by an impoverishment rule, affecting gender, that is contextualized to apply only when Appl is present: [gender]  $\mapsto \emptyset$  in the context of Appl and [number : plural]. So, languages like Greek, where PCC and Case Syncretism do not (perfectly) correlate, are accommodable.

It is interesting to note that Case Syncretism does partially hold in Greek, for plural arguments: *-as* realizes [number : plural] for any local argument, making *mas*, *sas* ambiguous with respect to direct and indirect objecthood. In Greenberg’s (1966) typological survey of number, plural emerges as the marked number, triggering loss of distinctions in other categories, such as gender. According to our system, Case Syncretism is the default for PCC languages. To prevent it in the singular, we appealed to contextual allomorphy. Its reemergence in the plural represents the loss of contextualization in vocabulary items and reversion to one vocabulary item per person. So, it constitutes a loss of distinctions in the Greenbergian sense. Significantly, then, the emergence of

Case Syncretism in the plural represents a return to the unmarked case, in both Greenberg's sense and ours.

## 7 Conclusion

In this paper, we have provided a syntax-driven account of the PCC and Case Syncretism that relies on the interaction between the features that arguments bear in virtue of the heads with which they are merged, and the features that heads bear in virtue of the Agree relations that they enter into. Our account differs from other syntactic approaches to the PCC in the role it affords Appl in constraining Case checking and in the attention it pays to the syntactic structures that feed morphology and therefore induce syncretism.

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## A Appendix: Table of Agreement Prefixes

### Notes

1. Data from Watkins (1984). Harbour's fieldwork has found minor phonological variation across regions (e.g.: *bágûi* is *bâtîi* for Mount Scott Kiowas); see also 7 below.

2. Cells representing impossible agreement combinations are blank.
3. ‘Any’ includes  $\emptyset$ , unless the direct object is  $\emptyset$ .  $\emptyset:x:\emptyset$  is an impossible agreement combination in Kiowa.
4. The following abbreviations are used in the table: S singular, D dual, P plural, I inverse (see next comment), AP animate plural.
5. Inverse agreement (I) arises on the verb when the corresponding noun bears a special number-class suffix. Some nouns bear the suffix when singular, others when plural.
6. Third plural inanimate intransitive agreement is *gya*.
7. The prefix for a third singular dative and an animate plural direct object (without subject) is *ém* (a recent discovery, not reported by Watkins).

**INSERT TABLE 1 HERE**

## B Appendix: Features

The feature notation adopted above is based on the theory of person and number features advanced by Noyer (1992) as developed by Harbour (2006a, 2006b). Our notation, though simple and, so, heuristically valuable, required us to stipulate that [participant : ] may be valueless, but that [number : ] may not. These stipulations follow straightforwardly when we look at the features behind our notation.

There are three person features: bivalent [ $\pm$ participant] and [ $\pm$ author], and privative [hearer]. The feature combinations are relevant to Kiowa are:

(92)	Features	Notation	Description
	[ ]	[ ]	Third person direct object
	[−participant]	[participant : ]	Third person indirect object
	[+participant +author]	[participant : 1]	First person exclusive
	[+participant +author hearer]	[participant : 12]	First person inclusive
	[+participant −author hearer]	[participant : 2]	Second person

It can now be seen why [participant : ] does not require a value in our heuristic notation. The values ‘1’ and ‘2’ abbreviate only [+author] and [hearer]. The minus value [−author] and absence of [hearer] are unrepresented. Furthermore, both [+participant] and [−participant] are represented as [participant : ], without reflection of ‘+’ or ‘−’. Consequently, [ $\pm$ participant (−author)] is represented as [participant : ] without reference to the values ‘1’ or ‘2’.

Consider now number. There are two number features,  $[\pm\text{singular}]$  and  $[\pm\text{augmented}]$ , which correspond to our notation as follows:

(93)

Features	Notation	Description
$[+\text{singular} -\text{augmented}]$	$[\text{number} : \text{singular}]$	Singular
$[-\text{singular} -\text{augmented}]$	$[\text{number} : \text{dual}]$	Dual
$[-\text{singular} +\text{augmented}]$	$[\text{number} : \text{plural}]$	Plural

This table exhausts possible combinations of the number features (see Harbour 2006a for definitions and proof of the rightmost column and of the contradictoriness of  $[+\text{singular} +\text{augmented}]$ ). Consequently, our notation in the middle column exhausts the possible numbers and so  $[\text{number} : ]$  without a value has no meaning. I.e., in contrast to  $[\text{participant} : ]$ , value specification is obligatory.

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## Notes

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<sup>1</sup>This is the ‘strong version’ of the PCC. Here, we will not discuss the ‘weak version’ (which states that the direct object may be non-third person, but only if the indirect object is also non-third person), because the strong/weak dichotomy strikes us as too coarse, with some speakers accepting only a subset of the argument combinations permitted by the weak version. Further research is needed into the correct generalizations (but see Bonet 1991, 1994, Anagnostopoulou 2005, Nevins 2006).

<sup>2</sup>Abbreviations: ACC accusative, AGT agentive, ANIM animate, CT control, DAT dative, DETR detransitive, DL dual, ETH ethical, FEM feminine, FUT future, GEN genitive, HAB habitual, HSY hearsay, IMPF imperfective, INF infinitive, LOC locative, MASC masculine, NEG negative, NEUT neutral, PERF perfective, PL plural, PT participant, Q interrogative, REFL reflexive, SG singular. \* after an agreement prefix signifies that the prefix deletes the verb’s high and falling tone(s).

The Kiowa orthography adopted here was devised in association with Carrie Guoladdle, a younger Kiowa. As in Watkins (1984) and the *IJAL* articles of the 1950’s, it has diacritics for nasality, high tone, and falling tone; respectively, the Polish hook, acute accent, and circumflex. Low tone is unmarked as is nasality of vowels in a syllable with a nasal stop. Length is indicated by repetition of the vowel, e.g., *aa*. However, long mid-high vowels are diphthongized and so, following Harrington (1928), are written as *ei* or *ou*. Ejective consonants are marked with an exclamation mark and aspiration by an *h*. The voiceless alveolar affricate is written *x*.

<sup>3</sup>We use the terms *subject*, *indirect object* and *direct object* loosely here. See section 4.1 for fuller comment. The prefix is glossed as *subject:to.indirect.object:direct.object*, reflecting its morphological structure (Harbour 2003).

<sup>4</sup>Note that a PP can occur with agreement for the P’s complement, as in *Nóóęi thalyóp nó-xán* ‘The boys came to me’. We regard such cases as analogous to French hanging topics, which do not involve agreement with a PP:

- (94) Il te                    l’a                    donné à toi.                    (Tresnia Harbour, p.c.)  
           he you.SG.DAT it.ACC+AUX gave to you.SG  
           ‘He gave it to you.’

<sup>5</sup>The postposition seems to vary across speakers, *-ęi* or *-em*.

<sup>6</sup>We do not give starred Kiowa equivalents of, e.g., (2), because they would require us to improvise new prefixes, which can only be done if we adopt a specific theory of the phonological elements that comprise the prefix. Although this is possible (see, e.g., Merrifield 1959a, Watkins 1984, Harbour 2006a), the result would be too theory dependent to be helpful here.



<sup>7</sup>The term ‘Case Syncretism’ should not be interpreted as involving Case features, like ‘DAT’ and ‘ACC’. In fact, our analysis of this phenomenon (section 5) wholly eschews such features.

<sup>8</sup>The tonal difference of ‘gave’ in (94) and (18) is discussed immediately below.

<sup>9</sup>The one exception is the second person singular, which is anomalous in several other respects (see Harbour 2003).

<sup>11</sup>In (94), *gú* is a number-class marker (the ‘inverse’). In PPs, nouns generally appear in their root form, as in (34). See Watkins (1984) for discussion.

<sup>12</sup>The only way to rescue the filter-based approach involves complications that deprive it of its initial simplicity and appeal. For example, the filter could regulate the relationship between syntax and morphology via:

(95) \*IO-AGR for OBJ in the morphology, if there is an indirect object in the syntax.

This, however, amounts to stipulation, not explanation, of the original observation. An alternative is that the output of the syntax is IO-AGR DO-AGR, that Case Syncretism applies immediately to yield IO-AGR IO-AGR, and then the Double IO Filter applies prior to deletion of the first IO-AGR (for third plural animate indirect objects). This gets the right result, but requires a questionable stipulation about the ordering of morphological rules: alteration of a single agreement feature (DO→IO) before deletion of a particular combination of person, number and case features. The latter rule, affecting a feature combination, is more specific than the former, affecting only a single feature. By Pāṇini’s Principle, the ordering should be the reverse.

<sup>13</sup>For further evidence against such filters, see Bonet (1995), pp. 627–629.

<sup>14</sup>Functionalist accounts have also been offered (e.g., Haspelmath 2002). These trade on the notion that PCC-violating sentences are unlikely to be used for a variety of pragmatic, discourse and sociocultural reasons. The PCC results, then, from grammaticalization of frequencies and tendencies. However, it remains obscure to us how grammaticalization of the most frequent structures entails ungrammaticality of the least frequent. (See Jelinek 1993 for similar comments on functionalist accounts of ergative splits.)

<sup>15</sup>Pylkkänen 2002 distinguishes between high and low applicatives. Throughout this paper, we represent all applicatives uniformly as high. It is legitimate to abstract away from this detail because only the relative height of indirect object and direct object is relevant to us and these do not vary between Pylkkänen’s two structures.

<sup>16</sup>Note that this order mimics that of  $v > \text{Appl} > V$ . We will not address here what accounts for there being a basic word order, despite the adjunct status of DPs.

<sup>17</sup>We have placed the particles in specifier positions here, but the alternative, that they are adjoined to the projections of the functional heads, would also give the right results.

<sup>18</sup>We assume feature valuation takes place derivationally. It is illustrated here as though it applies after the construction of the whole tree for presentational purposes only.

<sup>19</sup>That this verb is unaccusative can be seen by the kind of allomorphy it triggers. It appears only with the non-agentive allomorph of the future suffix (see section 4.3.1):

(96) *xánt!ɔɔ* / \* *xántɔɔ* ‘arrive.FUT’

It follows that the single obligatory argument of *xán* ‘arrive’ is a direct object.



**Table 1: Kiowa Agreement Prefixes**

Subject: (Indirect Object:)	Direct Object					
	∅	S	D	P	I	AP
1S:	a	gya	nen	gyat	dé	de
1D/P.INCL	ba	bá*	bet	bát*	bét	bé
1D/P.EXCL	e	é*	ét	é*	ét	ét
2S:	em	a	men	bat	bé	be
2D:	ma	má*	mén	mán*	mén*	mé
2P:	ba	bá*	bet	bát*	bét	bé
3S:	∅	∅	ẹ	gya	é	em
3D:	ẹ	ẹ*	én	én*	én	én
3AP:	á	á*	et	gyá*	et	ém
I:	e	é*	ét	é*	ét	ét
∅/2S/3S:1S:	ẹ	ẹ	né	yá	nó	né
2D:1S:	mâa*	mâa*	ménêi*	mánîi*	mónôo*	ménêi*
2P:1S:	bâa*	bâa*	bédêi*	bágîi*	bódôo*	bédêi*
3D:1S:	êi*	êi*	ẹnêi*	ẹnîi*	ẹnôo*	ẹnêi*
I:1S:	êi*	êi*	édêi*	égîi*	édôo*	édêi*
3AP:1S:	âa*	âa*	dêi*	gîi*	dôo*	dêi*
any:1D/P:	dó	dó	dét	gyát	dót	dét
∅/1S:2S:	em	gyá	nén	yán	gó	nén
other:2S:	gɔ	gó	dét	gyát	dót	dét
any:2D:	mó	mó	mén	mán	món	mén
any:2P:	bó	bó	bét	bát	bót	bét
1S:3S:		gyá	nén	yán	gó	nén
∅/2S/3S:3S		á	én	án	ó	én
any:3D:		mé	mén	mén	mén	mén
any:I:		bé	bét	bét	bét	bét
1D/P.INCL:3S:		bâa*	bédêi*	bágîi*	bódôo*	bédêi*
1D/P.EXCL:3S:		êi*	édêi*	égîi*	édôo*	édêi*
2D:3S:		mâa*	ménêi*	mánîi*	mónôo*	ménêi*
2P:3S:		bâa*	bédêi*	bágîi*	bódôo*	bédêi*
3D:3S:		êi*	ẹnêi*	ẹnîi*	ẹnôo*	ẹnêi*
I:3S:		êi*	édêi*	égîi*	édôo*	édêi*
3AP:3S:		âa*	dêi*	gyâa*	dôo*	dêi*