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Multiple Agreeing Persons is not that Special: Restrictions on Person Portmanteaux

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Abstract
This paper suggests that instantiations of complex agreement where the subject and object marker seem to form a new, unsegmentable marker (a portmanteau), are in fact allomorphs of one agreement marker. This claim is based on the fact that instances of portmanteau agreement seem to correlate with properties discussed in the literature for contextual allomorphy. That is, I show that portmanteaux agreement only occurs when both subject and object features are in the same complex head, and only the lower agreement head forms portmanteaux/allomorphs. Thus, portmanteaux are not syntactically special and do not require special mechanisms.

Multiple Agreeing Persons is not that Special: Restrictions on Person Portmanteaux

Paula Fenger*

1 Introduction

This paper deals with interactions between verbal agreement markers. If a language has subject and object agreement, (1-2), different combinations of markers are possible when both an external and internal argument are present (3): Both subject and object marker are spelled out, (3a), or one of the markers is spelled out differently in the context of the features of the other marker, (3b). Crucially, sometimes a new unsegmentable marker is formed: Person Portmanteaux Agreement (PPA), (3c).

(1) $\text{AGR}_{sub} \leftrightarrow X$ Subject Agreement

(2) $\text{AGR}_{obj} \leftrightarrow Y$ Object Agreement

(3) a. $\text{AGR}_{sub} + \text{AGR}_{obj} \leftrightarrow X\text{-}Y$ Separate markers

b. $\text{AGR}_{sub} \leftrightarrow X\text{'} / \text{AGR}_{obj}$ Allomorphy

c. $\boxed{\text{AGR}_{sub} + \text{AGR}_{obj} \leftrightarrow Z}$ $\boxed{\text{PPA}}$

I argue in this paper that all instantiations of (3c) can be modeled as instantiations of allomorphy, (3b) following Bobaljik (2000) and Trommer (2007). In addition,I show that PPA and contextual allomorphy obey the same restrictions, which is expected if they are the same process, but perhaps suprising if they are distinct processes. An example of PPA is found in De'Kwana (Hall 1988). In this language, intransitive clauses display two sets of agreement markers that differ depending on whether the sole argument is an external (EA, a. examples) or internal (IA, b examples) argument.[1,]

(4) a. **w**-amo-a
1.EA-cry-PRES
'I cry / I am crying'

b. **y**-a:wo-a
1.IA-swell-PRES
'I swell'

(5) a. **m**-amo-a
2.EA-cry-PRES
'You cry / are crying'

b. **əd**-a:wo-a
2.IA-swell-PRES
'You swell'

(Hall 1988:154, 326)

When two arguments are present, and thus two sets of features, a new marker shows up. This is shown in (6). As can be observed neither is the marker /*mən*/, (6a), a combination of /*w*/ + /*əd*/, nor is the marker /*kə*/, (6b), a combination of /*y*/ + /*m*/.

(6) a. $\boxed{\textbf{mən}}$-endant(ö)-a.
1>2-meet-PRES
'I meet you'

b. $\boxed{\textbf{kə}}$-(e)ndant(ö)-a.
2>1-meet-PRES
'You meet me'

(Hall 1988:154/5, 326/7)

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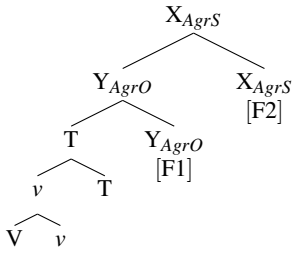
[1]Abbreviations: *x*>*y* = portmanteaux morpheme where *x* is the agent and *y* is the patient, *x.y* = fused element where multiple features (other than only person) are expressed in one morpheme, 1/2/3 = first/second/third person, 12 = first person inclusive, 13 = first person exclusive (excluding addressee), π = person, # = number, ABS = absolutive, ACC = accusative, AP = antipassive, APPL = applicative, ASP/ A = aspect, CAUS = causative, DAT = dative EA = external argument, ERG = ergative, F = feminine, HAB = habitual, IA = internal argument, IMM.PST = immediate past IMPERF = imperfective, INV = inverse, LOC = locative, M = mood, MASC = masculine, NEG = negation, NPAST = non past, NOM = nominative, OBJ/O = object, PFV = perfective, PL = plural, PRES = present tense, PST = past tense, SG = singular, SUB/S = subject, T = tense, TV = theme vowel, V = verb

I argue in this paper, based on languages from two unrelated families,[2] that all PPA is in fact an instantiation of contextual allomorphy (CA), following Bobaljik (2000), Trommer (2007) and contra Georgi (2013), Woolford (2016). The basic analysis will be explained in Section 2. Section 3 further expands the hypothesis that PPA is CA by showing that two restrictions that hold for CA also hold for PPA. That is, it has been argued that CA can only apply in one direction and it can only apply when two heads are in the same complex head (Bobaljik 2012, Moskal 2015, Thornton 2017, a.o.). I show that these two restrictions also hold for PPA. Finally, in 4 I briefly discuss recent alternatives to PPA (Georgi 2013, Woolford 2016).

2 PPA as Contextual Allomorphy

The main claim of the paper is that no separate mechanisms are necessary in forming PPA, but it instead is derived via contextual allomorphy (CA). The proposal in a nutshell is as follows. I assume that there are two agreement probes, one for subject and one for object agreement (Bobaljik 2000, Chomsky 1995, a.o).[3] Thus, a verb after head movement looks as in (7a), where X_{AgrS} is the head that hosts subject agreement – I do not take a stand one which head this is. The features in both heads can be spelled out separately, but when both [F1] and [F2] are present, the allomorphy rule in (7b-i) is used. To ensure that [F2] is not spelled out, an impoverishment rule, (7c), can be used.

(7) a.



b. (i) [F1] → *Z* / [F2]
(ii) [F1] → /*X*/
(iii) [F2] → *Y*

c. [F2] → Ø/ [F1]

This proposal follows and develops earlier proposals made by Bobaljik (2000) and Trommer (2007), who argue that PPA is derived via CA. I show in addition that taking PPA as CA makes certain predictions that are borne out. I first present data that support a CA approach to PPA, by looking at variation in Chukotko-Kamchatkan languages. I also show that there is language variation with respect to the use of the impoverishment rule in (7c). That is, some languages only show (7b-i) on the verb, whereas other languages also show [F2], (7b-iii), separately on the verb, next to (7b-i). After I have set the basis for PPA as CA, in Section 3 I go into the predictions that this approach makes. More precisely, I argue that PPA has the same locality and directionality restrictions as CA.

2.1 PPA in Chukotko-Kamchatkan

Chukotko-Kamchatkan languages such as Chukchi and Itelmen(Bobaljik 2000, Bobaljik and Branigan 2006, a.o) have a verbal template with agreement markers at the beginning and end of the verb. Some examples are given below for Chukchi, (8) and Itelmen, (9). In general, the prefix marks the subject, and the suffix marks the object.

(8) a. tə-ɬʔu-ɣət
1.SG.SUB-see-2.SG.OBJ
'I saw you'

b. ne-ɬʔu-ɣəm
3.PL.SUB-see-1.SG.OBJ
'They saw me'
Chukchi (Bobaljik and Branigan 2006:55)

[2]Carib: De'Kwana (Hall 1984, 1988); Chukotko-Kamtchatkan: Chukchi (Bobaljik 2000, Bobaljik and Branigan 2006), Itelmen (Bobaljik 2000, Bobaljik & Wurmbrand 2001). See Fenger (2017) for a larger dataset.

[3]See Fenger (2017) for evidence that all languages that have PPA have two agreement probes and that all languages discussed in this paper have this hierarchical order of markers.

(9) a. t'-əlčqu-**(ɣ)in**
1.SG.SUB-see-2.SG.OBJ
'I saw you'

b. **n**-əlčqu-**(ɣ)in**
3.PL.SUB-see-2.SG.OBJ
'They saw you'

Itelmen (Bobaljik and Wurmbrand 2001:ex. 5)

Thus, when two arguments are present, two markers are present on the verb. I assume the following underlying verb structure for both languages, following (Bobaljik 2000), (10).[4]

(10) $[_{X_{AgrS}}\ X_{AgrS}\ [_{Y_{AgrO}}\ [_{T}\ [_{v}\ V\ v\ ]\ T\ ]\ Y_{AgrO}\ ]]$

Going back to the abstract verb structure in (7), this means that in most cases [F1] or [F2] are spelled out separately. However, interaction, and thus (7b-i) exists in both languages: PPA arises in the context of 3π>3π. Examples for both languages are given: (11) shows Chuckhi and (12) Itelmen. The a. examples show the PPA marker. Observe that in Chukchi there is only a suffix present, which thus encodes both subject and object information. Itelmen, on the other hand, has the subject information marked both in the prefix and the suffix. For both Itelmen and Chukchi the 3π is different depending on the subject, thus in (11b) the subject is 1π and the suffix is /-ɣʔ*en*/ instead of /-*nin*/, the same holds for (12b).

(11) a. ɬʔu-**nin**
see-3.SG>3.SG.OBJ
'(S)he saw him/her/it'

b. tə-ɬʔu-**ɣʔen**
1.SG.SUB-see-3.SG.OBJ
'I saw him/her/it'

(12) a. **n**-zəl-**nen**
3.PL-give-3>3.SG
'They gave it'

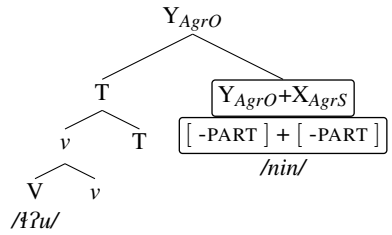
b. **t'**-əɬčqu-s-**čen**
1.SG.SUB-see-PRES-1>3.SG.OBJ
'I see him'

(Bobaljik 2000:19)

On the basis of the data above, a CA analysis is the most optimal solution. Let us see why, by comparing it to a fusion analysis. The fusion option (Noyer 1992), which works for Chukchi, but not for the other languages discussed here, is one where the object and subject features are fused into one head and spelled out as a new marker, as in (13a).[5] In this case, according to the elsewhere principle, the most specific VI will be inserted into the fused head, which is in this case (13b-i), since it spells out [-PART] twice, whereas (13b-ii) only does once.

(13) Chukchi ✓**Fusion**: /ɬʔu-**nin**/

a.



b. VI rules X_{AgrO}
(i) [-PART, -PART] → /-nin/
(ii) [-PART] → /-ɣʔen/
(iii) [+ADD] → /-ɣət/
(iv) [+SP] →/-ɣəm/

This analysis works for Chukchi, since the subject features are not present in the prefix marker. However, for Itelmen such an analysis fails. In order to spell out the object features, the VI rule that refers to multiple features is inserted and spells out the suffix. The problem arises when the prefix needs to be spelled out. A marker needs to be inserted to derive the correct surface form, but there is no location for this marker, since the subject features are already spelled out in the suffix.

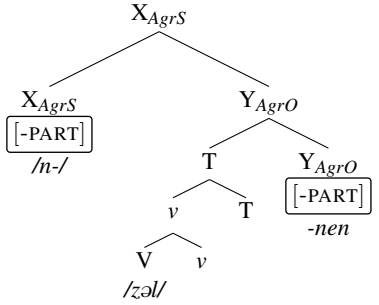
[4] I assume that agreement heads can be spelled out either to the left or right, but in all languages discussed in this paper both heads are always in the same complex head. See Bobaljik (2000), Bobaljik and Wurmbrand (2001) for evidence that this is the correct structure for Itelmen and Chukchi and see 3.3 and Fenger (2017) for a discussion on agreement heads and when PPA is not possible.

[5] An updated version of fusion is spanning, where multiple terminal nodes are spelled out as one marker (Svenonius 2016, Merchant 2015). However, the same problems that arise for fusion also arise for spanning.

A second analysis, which derives all languages discussed here, models the interaction between X_{AgrS} and Y_{AgrO} as CA. Let us discuss this for Itelmen first. In this case the morphological tree does have a slot for subject and object features, as shown in (14a). The more specific allomorphy rule in (14b-i) ensures that /*-nen*/ is spelled out and not just the features of 3π. Thus, the marker still spells out object features and subject features, but the subject features themselves are still present in the derivation. This means that (14c-i) can still be inserted to derive the correct surface form.

(14) Itelmen ✓**CA**: /n-zəl-nen/

a.



b. VI-rules Y_{AgrO}
- (i) [-PART]→ /-nen/ / [-PART]$_{AgrS}$
- (ii) [-PART] → /-n/
- (iii) [+SP]→/-βum/
- (iv) [+ADD]→/-[ɣ]in/

c. VI-rules X_{AgrS}
- (i) [+PL] → /n-/
- (ii) [+SP] → /t'-/
- (iii) [+ADD] → /q-/

This analysis leads to the desired result for Chukchi as well, but an additional operation is needed. The same type of CA rule applies for the suffix, but the prefix needs to be deleted. As discussed in (7) an impoverishment rule deletes all the features in the higher head, ensuring that no VI rule can be inserted (Bobaljik 2000, 2017). This impoverishment rule is thus subject to language variation in that in Chukchi it is present in case of 3π>3π, but not in Itelmen. This variation will be discussed in Section 3 as well. Thus, a CA approach to PPA leads to the desired result for Chukotko-Kamchatkan languages, whereas a fusion approach does not. Next I show that PPA has the same restrictions as CA, strengthening the proposal made here.

3 Implications of PPA as CA

The system developed here makes predictions for when PPA is possible, which should be similar to when CA is possible. This section provides evidence for PPA correlating with properties of CA. First, in 3.1, I focus on two predictions if PPA is an instantiation of CA. First, there are proposals about the directionality of CA, such as Bobaljik (2000). If PPA is a special case of CA, then PPA will show the same type of directional asymmetry observed by Bobaljik for CA. Secondly, CA is in general only possible when two heads are local enough, e.g., in the same complex head. I show in 3.2 and 3.3, respectively, that these two restrictions also apply to PPA, thus strengthening the similarity between PPA and CA.

3.1 Predictions

As discussed in the previous section, I assume that CA is modeled following, among others (Bobaljik 2000, Embick 2010) in that the most deeply embedded elements receive phonological information first. This means that the verb stem is inserted first and only after that inflectional material. In general, people assume that the features of higher nodes can influence the phonological form of the lower nodes, as we have seen in the previous section: subject features influence the phonological form of the object features, forming 'PPA'. Now, it has been debated in the literature if the reverse is also possible, thus if the syntactic features of features lower in the structure, can influence higher heads (Bobaljik 2000, Bonet and Harbour 2012, Gribanova and Harizanov 2016). In the remainder of the paper I show evidence in favour of the view that CA is uni-directional: only higher features influence lower features and not vice versa (Bobaljik 2000). This evidence comes from the type of portmanteaux markers that are allowed. As will become clear in Section 3.2, the following abstract representations are found.

(15) Object Features:

a. $[F]_{AgrO} \rightarrow X$
b. $[F]_{AgrO} \rightarrow X' / [F]_{AgrS}$ (also PPA)
c. $[F]_{AgrO} \rightarrow \emptyset / [F]_{AgrS}$ (=b.)

(16) Subject Features:

a. $[F]_{AgrS} \rightarrow Y$
b. $[F]_{AgrS} \rightarrow \emptyset / [F]_{AgrO}$ ($\neq$ CA)

Overall, I present evidence that there are more different instantiations of object features (15) than subject features (16). What this boils down to is that object features can be spelled out, only marking object features, (15a), or can spell out object and subject features, (15b) or be zero, (15c). Since, PPA is an instantiation of contextual allomorphy, it falls under (15b). Now, in the case of subject features, we never see overt allomorphs, thus we do not see the equivalent of (15b) for subject markers. I argue that the zero marking in (16b) is an instantiation of impoverishment of features, rather than CA. This has been discussed already in the previous section (Bobaljik 2017). Thus, the first piece of evidence for PPA being accounted for via CA comes from the fact that both obey the same directionality restriction.

A second prediction for the hypothesis that PPA is CA is that both should obey the same locality restrictions. In Section 3.3 I show that the following hypothesis holds (following Bobaljik 2012, Moskal 2015, Thornton 2017):

(17) CA (=PPA) is only possible when two heads are in the same X^0

What this means specifically for PPA is that the formation of portmanteaux is only possible when both agreement probes are in the same domain, e.g., the same complex head. This means that this account can distinguish between languages that never allow for PPA, but do have two agreement probes, and languages that allow PPA. The first type of languages should show evidence that the agreement probes are in different domains, whereas the second type of language has evidence for the probes ending up in the same domain. That is, we can take the existence of PPA as an indication of what constitutes a domain in a particular language. I provide evidence from both type of languages.

3.2 Directionality

Let us first return to the Chukotko-Kamchatkan languages to see the directionality restriction. Recall that in this language family there is a prefix and a suffix and that the languages discussed here have a PPA with 3π>3π, formed in the suffix. Next to these agreement markers, there are also allomorphs. Here I only focus on allomorphs formed via the interaction of both agreement markers, and not allomorphs via interaction of tense and mood (Bobaljik 2000, Bobaljik and Wurmbrand 2001). The allomorphs for subject and object agreement are given in (18) for Itelmen.

(18) VI rules Transitive Object Agreement (singular only)

a. [-PART]$\rightarrow$ /-čen/ / $[+SP]_{AgrS}$
b. [-PART]$\rightarrow$ /-sx / / $[+ADD, PL]_{AgrS}$
c. [-PART]$\rightarrow$ /-(i)n/ / $[+ADD]_{AgrS}$
d. [-PART]$\rightarrow$ /nen / $[-PART]_{AgrS}$

Observe that there are only allomorphs for object markers, and not for subject markers. Thus, all rules in (18) have features of the subject in the context of the CA rule. Recall that the object features are lower in the verbal structure than the subject features. Thus, this implies that higher features can influence the phonological form of the lower features. That is, there is a directionality restriction, as discussed in (15) and (16).

Now, in Chukchi there was a PPA marker for 3π>3π in the suffix and the prefix was not present. This could be seen as an instantiation of CA where the object features influence the phonological form of the subject marker. However, both in Chukchi and Itelmen, the prefix (and thus the subject marker) is never overtly spelled out different due to object features. The prefix spells out the subject

or it is zero. This is then an instantiation of (16b), which, as I have argued above, is not CA but impoverishment.

Thus, both Chukchi and Itelmen show the reasoning needed to find evidence for a directionality restriction with PPA and thus can provide evidence for the claim that PPA is CA. Before we move to the other restriction, let us discuss some data from other language families.

As shown in previous work (Fenger 2017), Carib languages such as De'Kwana (Hall 1988) and Surinam Carib (Gildea 1998) seem to go against an analysis where the verb has two slots for agreement and CA, but in fact provide evidence in favour such an analysis. That is, there is evidence for two markers where the subject agreement is higher than the object agreement, this can be seen in the following table for 2π>13π and 13π>2π.

π	EA	IA
1	w-	∅ (y-)
12	k-	k(ɨ)-
13	(nña:)n-	(nña:) ∅
2	m-	ə(d)-
3	n-	

(a) Intransitives

EA IA	1	12	13	2	3
1	–	–	–	mən	w-
12	–	–	–	–	k-
13	–	–	–	nña:mən	nña:n-
2	kə	–	nña:kə	–	kə/m-
3	∅	k-	nña:∅	ə(d)-	n-/∅

(b) Transitives

Table 1: De'Kwana (Hall 1984, 1988:151/287/327).

This paper provides additional evidence that it is only the object agreement that is influenced by features of the subject and not vice versa. The evidence comes from the status of 3π. At first sight it seems that CA rules in both directions are needed in case of agreement with two arguments, where one argument is 3π. That is, it seems that 1/2π are spelled out and the features of 3π are deleted, whether 3π is the subject or the object. However, note that 3π is always spelled out as /*n*/, regardless of the argument, as can be seen in Table 1a. That is, 1/2π are spelled out differently depending on which argument the features come from, but 3π not. This indicates that */n-/* is an elsewhere morpheme that is only inserted when there is no other morpheme present. As such, it does not spell out 3π features. I argue that 3π is not a feature in the syntax, but the verb still requires an affix on the verb, which is spelled out as /*n*/ in case no other features are present. However, in the case of for example 1π>3π and 3π>1π features of 1π are present and are spelled out. At this point /*n*/ is not needed anymore, since more specific features are spelled out. This then means that we do not need specific CA or impoverishment rules to account for the fact that 3π is never spelled out, which would go against the predictions made in Section 3.1.

To summarize, at this point I have shown that all languages with PPA can be derived with CA and that CA only applies in one direction. In the next section I show that the second correlation between PPA and CA holds: PPA has the same locality restriction as CA.

3.3 Locality in PPA

A second correlation between PPA and CA is found if we look at locality domains. As has been argued for CA, interaction can only take place if the heads are in the same domain, recall (17). I argue based on data in this section that agreement probes can only show allomorphy if they are in the same complex X^0. Section 3.3.1 shows evidence from languages that sometimes form PPA, but in other environments do not; Section 3.3.2 discusses languages that never exhibit PPA.

3.3.1 PPA vs no PPA

The first piece of evidence for a locality requirement in forming PPA comes from looking at languages that usually allow PPA. Recall that in languages like De'Kwana and Itelmen in general all agreement is expressed on one verb, and thus the agreement heads are in on complex X^0. However, De'Kwana and Itelmen contrast when multiple verbs are present.

First, consider De'Kwana. Recall that De'Kwana has a portmanteaux for 1π>2π and vice versa. However, sentences including negation include an auxiliary verb. Thus, there are two verbs and both 1π and 2π are marked separately, as shown in (19). Due to a split-ergative agreement system person features are marked differently, depending on which argument the features come from. Compare the a. and b. examples.

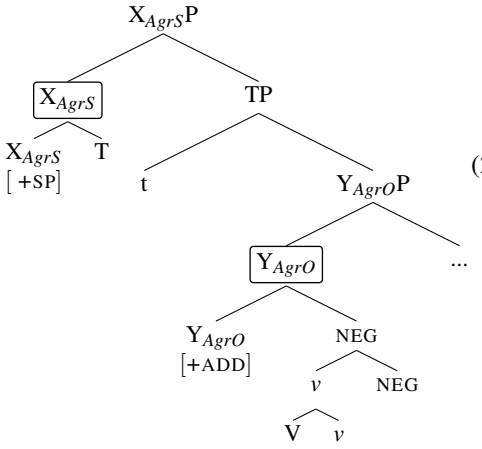
(19) a. **ad**-ayhuku-'da **w**-ö-a üwü
2.IA-hit-NEG 1.EA-be-PRES I
'I don't hit you'

b. **y**-ayhuku-'da **m**-ö-a ömödö
1.IA-hit-NEG 2.EA-be-PRES you
'You don't hit me'

(Hall 1988:338)

Thus, even though the language allows for PPA, it is not the case that there always is a PPA when 1π and 2π are present.[6] I argue that this is because of the requirement for CA to apply when the interacting heads are in the same complex head. In the case of (19), the heads end up in different domains, and therefore, even though the CA rules are still part of the grammar, these rules cannot apply. A derivation is given in (20), with the corresponding VI rules in (21) and (22).

(20) De'Kwana two verbs



(21) VI rules for X$_{AgrO}$
a. [+ADD] → /mən-/ / [+SP]$_{AgrS}$
b. [+ADD] → /əd-/
c. [+SP] → /kə-/ / [+ADD]$_{AgrS}$
d. [+SP] → /∅(y)-/

(22) VI rules for X$_{AgrS}$
a. [+ADD] → /m-/
b. [+SP] → /w-/

Due to negation, the verb cannot move into T. This means that in order for Tense and the subject features to be spelled out, a dummy element is inserted, resulting in two verbs: the main verb including negation and object features, and a dummy verb including tense and subject features. The two agreement probes end up in different heads, leading to the the interacting heads not in being in the same X^{o}. Therefore, for object agreement, (21), the most specific VI-rule is (21b) and not (21a). Thus, even though the CA rule is still present, it cannot apply.

We can contrast this with a language that also allows for PPA, and even has PPA when there are two verbs. Consider the following example from Itelmen:

(23) qa'm łem-aq **t'**-iɬ-**čen**
NEG kill-NEG 1.SG-AUX-1>3.SG
'I didn't kill it' Bobaljik, Field Notes [S3:10, ex. 23]

The difference between Itelmen and De'Kwana is that in Itelmen all agreement is expressed on the auxiliary verb, and not spread out, like in De'Kwana over the main and auxiliary verb. Moreover, in Itelmen, allomorphy is still allowed: the same affixes appear in clauses with and without negation. This means that the agreement probes end up in the same domain, which does not lead to the blocking of the CA rule. This contrasts with the De'Kwana two-verb constructions, where the agreement probes end up in different domains. Moreover, there is a difference between the locality of the forming of PPA and the locality of probing of arguments. In both De'Kwana and Itelmen, each of

[6] Woolford (2016) reaches the same conclusion in her approach and argues that these data favour a morphological rather than syntactic approach.

the arguments can be agreed with in both single verb clauses and clauses where there are multiple verbs. However, there is a difference with regard to the forming of PPA only when all the agreement is expressed in one complex head, can the agreement markers form PPA.

3.3.2 Languages without PPA

At this point we have seen that PPA is allowed in languages as long as the agreement probes are in one complex X^0. This then predicts that as long as the probes are not in the same domain, PPA is disallowed. This prediction is borne out in languages where PPA is sometimes allowed, but not when the agreement markers are spread out over different verbs and thus end up in different domains.We also find evidence in languages that never allow PPA; thus the agreement probes always end up in different domains. Languages that fall under this type of syntax are Bantu languages, since they have both subject and object markers (Bresnan and Mchombo 1987).

(24) Njuchi **zi**-na-**wa**-lum-a alenje
bee SUB-PAST-OBJ-sting-FV hunter
'Bees stung hunters' Chichewa, based on Monich 2015:155

As can be seen, the tense marker intervenes between the subject and object marker, and both markers only spell out one set of phi-features. At this point it could be an accident that PPA does not occur in this language family, but there is additional evidence that verbs in Bantu languages consists of multiple domains. Several authors have shown that there are phonological processes, such as tone assignment, that behave differently in different parts of the verb (Barret-Keach 1986, Monich 2015, a.o). Thus, in general, the domains for phonological application are below, where the verb stem and the object marker from the first domain, and the higher functional heads are in a separate domain.

(25) [Su-T] [Obj - V]

If we believe that phonological domains are derived from morphological domains, it is no surprise that PPA is disallowed. That is, the phonology gives evidence for there being two domains inside the verb. If that is the case, CA between subject and agreement markers is blocked, since both markers end up in different domains.

In conclusion, I have presented two predictions about CA and have shown that these predictions are borne out in case of PPA as well. That is, PPA, just as CA, is only allowed when two agreement heads are in the same m-word and PPA only occurs in the lower agreement heads and not the higher heads. The next section discusses two recent alternatives that argue for PPA as multiple probing and I will point out some problems.

4 PPA as Multiple Probing

So far I have argued that languages with PPA have multiple probes that can interact via CA; PPA is a special case of CA. This means that the burden of proof shifts to proponents of theories that argue that PPA is not just morphologically but also syntactically a distinct mechanism, with, for example, a special type of probing. An example would be multiple probing (MP) where one head collects multiple features that can be spelled out as one marker. Recent proposals of this type are made by Georgi (2013), Woolford (2016). For both of them MP and PPA should correlate in different ways.[7]

First, in essence, as Woolford argues, multiple probing is a syntactic mechanism and as such, a language that allows for this should have an agreement paradigm with many PPA markers, e.g., a paradigm should not include a lot of separate object and subject markers. This is compared to languages that only allow PPA in a subset of their paradigm and thus do not allow MP, but have a morphological solution. However, this prediction is not borne out. Looking at Table 2, languages only have PPA in discreet slots of the paradigm. For example the combination of [+1, +3] in Chukchi only leads to a PPA in case of 1SGπ>3 and not vice versa (– refers to separate markers). This means

[7] I focus here only on a subset of issues and languages, see Fenger (2017) for a more elaborate discussion.

that the correlation between MP and PPA-persuasiveness does not seem to hold up, since PPA only occurs in a small part of the paradigm.

Language	π	'SG'		'PL'	
Chukchi	1	1SG>3	–	1PL>3	–
	2	–	–	2PL>3	–
	3	3SG>3(PL)	–	–	–
De'Kwana	1	1>2	2>1		
Itelmen	1	1SG>3	–	1PL>3	–
	2	2SG>3	–	2PL>3	–
	3	3>3	–	–	–

Table 2: PPA-patterns.

A second correlation is made by Georgi's account. Her main argument for MP comes from languages like Surinam Carib (Gildea 1998), which has a syncretic marker (*k*-) for all [+1, +2] contexts (e.g 12π (in)transitive, 1π>2π, 2π>1π). This marker always spells out [+1, +2] when the probe agrees with those features, making the 'PPA' a derived inclusive marker. Moreover, she argues that PPA usually occurs in contexts of 1/2π, and not in 3π.[8] She accounts for this by relativizing the probe for certain features. Thus, in Surinam Carib, the probe only searches for [+1] and [+2]. This not only accounts for PPA with 1/2π, but also for person-markedness. Thus, languages that allow for PPA, also show in their verbal paradigm a preference for expressing 1/2π. This shows up for example in transitive contexts such as 1π>3π and 3π>1π where only [+1] is expressed. Recall these facts from another Carib language, De'Kwana in Table 1. Thus, MP looks for [+1, +2] and thus only expresses those features, and can only combine those features into PPA: there is a correlation between PPA and person-markedness.

The prediction is that, due to relativized probing, languages with person-markedness effects only have PPA for 1/2π. This prediction is not borne out. For example, as discussed in Section 3, Itelmen allows PPA for 3π, but there is also person markedness visible in that CA in general is only allowed if 3π is the object and not when 1/2π are. This then means that these languages have similar person-markedness effects in the verbal paradigm as the languages discussed by Georgi, but they allow PPA with 3π. This is unexpected if both person-markedness and PPA follow from relativized MP. In case of Itelmen, the person-markedness needs to be stated elsewhere for Georgi, to allow these type of effects.

In sum, I have shown in this section two arguments against a MP approach to PPA. The MP approaches predict correlations between MP and PPA which are not borne out; e.g PPA is not persuasive throughout the verbal paradigm and PPA and person-markedness are not correlated.

5 Conclusion

I have shown that not only can PPA be modeled as CA, it also correlates with CA in multiple properties. This means that languages with PPA do not need additional mechanisms to form these type of markers. That is, PPA are not syntactically special; there is no special probe syntax for PPA distinct from regular subject and object agreement, nevertheless it tells us something important about the syntax of languages with PPA. PPA can be used to understand the crosslinguistic variation in complex agreement systems and the operation of CA and domains inside words.

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[8] Woolford has a similar reasoning as Georgi, but a different solution.

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