A portmanteau agreement morpheme is one that encodes features from more than one argument. An example can be seen in (1) from Guarani where the portmanteau agreement morpheme roi spells out the first person feature from the subject and the second person feature from the object.

(1) Roi-su’ú-ta.                       [Guarani]
    1-2sg-bite-future
‘I will bite you.’ (Tonhauser 2006:133 (8a))

This portmanteau morpheme is distinct from the agreement morpheme that cross-references the first person subject, in (2), and from the morpheme that cross-references the second person object in (3).

(2) A-ha-ta.                        [Guarani]
    1sg-go-future
‘I will go.’ (Tonhuaser 2006:133 (9a))

(3) Petei jagua nde-su’u.           [Guarani]
    one dog 2sg-bite
‘A dog bit you.’ (Velázquez Castillo 1996:17 (14))

The goal of this paper is to answer the question of where and how portmanteau agreement is formed in the grammar. This is a matter of considerable debate in the current literature. Georgi 2011 argues that all portmanteau agreement is created in syntax, with Infl/T probing two arguments. Williams 2003 argues that what is crucial for portmanteau morphemes of any kind is

1 I would like to thank the participants in the November 2012 Advances in Optimality Theoretic-Syntax and Semantics Workshop at Johns Hopkins University and the anonymous reviewer for this volume for valuable comments on this paper. I would also like to thank the two University of Massachusetts undergraduate student interns who assisted me with the initial research on this project in fall 2011: Tyler Forni and Glynis MacMillan.
for the relevant heads to be adjacent. Radkevich 2010 proposes that portmanteau morphemes fill a non-terminal node, with readjustments prior to morpheme insertion to remove elements dominated by that node that are not part of the portmanteau morpheme. In Distributed Morphology, portmanteau agreement is formed in a module following syntax, but preceding morpheme insertion, where two syntactic nodes can be fused into one into which a portmanteau morpheme is then inserted (Noyer 1992, building on Halle and Marantz 1993). Trommer 2010 argues for a more restrictive version of the DM theory eliminating such fusion, proposing instead that what we call portmanteau agreement morphemes are actually just contextually restricted allomorphs of ordinary agreement morphemes inserted in one node at PF, while the other node remains empty.

The proposal in this paper is that, with respect to portmanteau agreement, there are two different correct answers to the question of where and how portmanteau forms are produced in the grammar, because there are two different types of portmanteau agreement, one syntactic and the other morphological:

(4) Two Types of Portmanteau Agreement:

*Syntactic Portmanteau Agreement:*
One head (Infl/T) probes two arguments in syntax, collecting features from both.

*Morphological/PF Portmanteau Agreement:*
An agreement affix also spells out features of an adjacent head/morpheme at PF.

Syntactic portmanteau agreement is created in syntax, as Georgi (2011) maintains, with Infl/T probing both the subject and the object and receiving phi features from both arguments. However, contra Georgi, I maintain that this is not possible unless the subject has nonstructural case (e.g. ergative). When the subject has nominative case, Infl/T is blocked from probing past that subject to reach any lower argument (Chomsky 2000). Thus syntactic portmanteau agreement is predicted not to occur in nominative-accusative case patterns.

Morphological portmanteau agreement, in contrast, can occur in nominative-accusative languages. If the subject agreement morpheme associated with Infl/T is/would be adjacent to the morpheme cross-referencing the object at PF, a portmanteau form of the agreement morpheme can be inserted, spelling out features from both, while the object form is not spelled out. As in Williams 2003, I take adjacency to be crucial for the PF type of portmanteau agreement, and like Trommer 2010, I maintain that portmanteau agreement does not involve any sort of fusing of syntactic nodes, nor filling two syntactic nodes with one morpheme: instead, as in Trommer’s approach, it involves filling one node while leaving the other node empty. Unlike Trommer, however, I argue that there is no need for a contextual restriction to be attached to the portmanteau agreement morpheme in the lexicon in order to account for when a portmanteau form will be used. Instead, a morphological portmanteau agreement morpheme is selected to
satisfy a requirement in the linearization process at PF, that all marked/local (1st and 2nd) person features must be placed (aligned) exactly at the left edge of the verb.  

The generalization noted by Heath (1991, 1998), that portmanteau agreement morphemes are typically used for local (first and second) person combinations, holds only for the morphological type of portmanteau agreement, because the pressure to form that type of portmanteau is only on elements with local features. Heath’s generalization does not hold of the syntactic type of portmanteau agreement (Inuit) because the collection of phi features from two arguments in syntax in a multiple agree relation is not limited to local features.

This paper is organized as follows. The morphological type of portmanteau agreement is the topic of section one, with discussion of four languages with portmanteau agreement: Lakota, Yimas, Guarani and De'kwana. Because first and second person play such a central role in this type of portmanteau agreement, this section begins with a characterization of the very restrictive view maintained here, that the role that the person hierarchy plays in grammar is indirect, limiting constraints to targeting either 1st person alone, or local persons as a group, but never second person alone nor third person (section 1.1) In Lakota and Yimas (sections 1.2 and 1.3), a portmanteau agreement morpheme is used in 1st-2nd combinations in order to get both a first and a second person feature perfectly aligned to the left edge of the verb. In Guarani (section 1.4), the morphemes that cross-reference the subject and object compete for one morphological ‘slot’; using a portmanteau agreement form in 1-2 combinations allows both local person features to be spelled out on one morpheme.

In section 1.5, we turn to a language that contrasts with those above in two interesting ways: Reyesano. Although this language has a ‘slot’ competition for the prefix position, just like Guarani does, it never uses portmanteau agreement, plus 2nd person wins the competition, not 1st. We will see that both of these properties follow if the same constraints used in the analyses of the languages above are in a different ranking. It is not necessary to postulate a language specific person hierarchy.

De'kwana (section 1.6) provides additional evidence that morphological portmanteau morphemes are not used simply because they happen to exist in the lexicon; they are used when they are needed to satisfy alignment and/or faithfulness constraints. Subject and object cross-referencing morphemes are spelled out separately in negative clauses in De'kwana, because the negative provides an additional morphological ‘slot’ that is not present in affirmative clauses. The portmanteau agreement morphemes in the De'kwana lexicon are only used in positive clauses, in order to spell out features from both arguments in the one available morphological ‘slot’.

---

2 Readers working within the Minimalist Program should view this alignment requirement as part of the linearization process that occurs at PF. If morphological portmanteau agreement is a PF process, it is not surprising that it is subject to phonological (like) constraints. Alignment is one of the basic types of constraints in Optimality Theory (Prince and Smolensky 1993, 2004, McCarthy and Prince 1993). Alignment constraints require an element to share an edge with (be adjacent to) another element. This paper assumes a very restrictive set of possible person alignment constraints, discussed in detail in section 1.1.
As for the types of portmanteau agreement morphemes that occur, three of the languages discussed in this paper obey a restriction prohibiting portmanteau agreement in 2-1 combinations, but this restriction is not universal: De’kwana has both 1-2 and 2-1 portmanteau agreement morphemes. The languages that obey this restriction use various other strategies in 2nd-1st constructions: Lakota spells out both morphemes, even though this means that one local person feature cannot be adjacent to the verb, while Yimas and Guaraní elect to spell out only one of the morphemes.

Section 2 turns to syntactic portmanteau agreement, illustrated with the ergative language Inuit. Inuit does not conform to the typological generalization that portmanteau morphemes are typically used only for first and second person combinations. Inuit has many portmanteau agreement forms involving third person arguments, including several for 3-3 combinations. I suggest that the reason that syntactic portmanteau agreement languages do not conform to this generalization is that the alignment of person features plays no role. All of the features are located on the Infl/T node in syntax and can be spelled out with one agreement morpheme at PF.

1. Morphological Portmanteau Agreement

In languages with morphological portmanteau agreement, two distinct cross-referencing elements are generated in syntax in transitive clauses. Infl/T probes only the nominative subject, and thus carries only the phi features from that argument. The object is cross-referenced by a different element, e.g. a pronominal clitic. At PF, if these two cross-referencing forms are adjacent, features from both can potentially be spelled out with one portmanteau agreement morpheme, if there is a reason to. Before getting into the analysis of this type of portmanteau language, I will lay out the restrictive assumptions that will govern this analysis.

One assumption I make involves what kinds of cross-referencing elements can be portmanteau:

(5) Only true agreement morphemes can be portmanteau; pronominal clitics cannot.

This assumption makes intuitive sense if pronominal clitics are like pronouns, which are never portmanteau to my knowledge. This assumption allows us to explain the lack of portmanteau agreement in Reyesano (section 1.6).

Additional assumptions concern the nature of the relationship between the person hierarchy and any constraints that make reference to person. These are laid out below:

1.1 The Role of the Person Hierarchy in Grammar

Contra the common assumption, the person hierarchy does not line up morphemes by person. The role of hierarchies in the formal grammar in Optimality Theory is indirect; that is, hierarchies can only restrict the range of possible constraints. Thus the person hierarchy can only restrict which person features constraints are allowed to refer to. Based on the literature cited below, constraints can only make reference to first person, or to first and second person taken as a group, i.e. local persons. The assumption that constraints cannot specifically target third person follows from the general claim in Gouskova 2003 that constraints can never make specific reference to the lowest element in a hierarchy. The assumption that constraints can never
specifically target second person alone (but only first and second together) follows from de Lacy’s 2002 claim that constraints can only make reference to a span in a hierarchy anchored at one edge, not to individual element in the middle of a hierarchy. Putting these restrictions together with the assumption that there is only one universal person hierarchy, \(1^{st} > 2^{nd} > 3^{rd}\), the result is that \(1^{st}\) person alone, or \(1^{st} \& 2^{nd}\) person as a group, (local), can be targeted by constraints, but not \(2^{nd}\) alone, nor \(3^{rd}\).3

Under these restrictive assumptions, the constraints that require person features to be spelled out can only refer to the features \([+1^{st}]\) or \([+\text{local}]\):

(6) Person Faithfulness Constraints:

\[
\text{MAX}(1^{st}) \quad \text{Spell out all first person features.}^4
\]

\[
\text{MAX(\text{LOCAL})} \quad \text{Spell out all 1\textsuperscript{st} and 2\textsuperscript{nd} person features.}
\]

Likewise, the markedness constraints that prohibit the spell out of person features are also reduced to just two:

(7) Person Markedness Constraints:

\[
*1^{st} \quad \text{Do not spell out 1\textsuperscript{st} person.}
\]

\[
*\text{LOCAL} \quad \text{Do not spell out any 1\textsuperscript{st} or 2\textsuperscript{nd} person features.}
\]

Finally, alignment constraints that require person features to be adjacent to some edge, e.g. the left edge of the verb, are limited to two:\(^5\)

---

3 Although third person cannot be targeted by constraints making reference to person, a third person element may have other, marked features that can be targeted by constraints, such as +human. Third person elements can also be targeted by constraints that target specific kinds of elements, such as pronominal clitics. For example, clitic alignment constraints appear in work such as Legendre 1996, 1998, 1999, 2000a, 2000b, Legendre et al 1995, van der Leeuw 1995.

4 More technically within OT, this faithfulness constraint, \(\text{MAX}(1^{st})\), requires any 1\textsuperscript{st} person feature from the previous level to be preserved. Thus when this faithfulness constraint applies at PF, it requires any 1\textsuperscript{st} person feature present in syntax be spelled out. Faithfulness constraints that require the preservation/spell-out of elements are called Parse constraints in earlier literature on OT syntax, e.g. Legendre et al. 1995.

5 These constraints are not in a universally fixed ranking (de Lacy 2002).
Person Alignment Constraints:

1\textsuperscript{st} → VERB Align every 1\textsuperscript{st} person feature to the left edge of the verb.

LOCAL → VERB Align every 1\textsuperscript{st} & 2\textsuperscript{nd} person feature to the left edge of the verb.

Let us now turn to the analysis of when and why portmanteau agreement morphemes are used in languages with the morphological type of portmanteau agreement.

1.2 Lakota

Lakota has one portmanteau agreement morpheme, which is used in 1\textsuperscript{st} subject-2\textsuperscript{nd} object combinations, as in (9):

(9) Čhi-kte.
  \textsuperscript{1\textsuperscript{st}}, \textsuperscript{2\textsuperscript{nd}} Agr-kill
  ‘I kill you.’ (Boas and Deloria 1941:76)

This portmanteau agreement form looks nothing like the normal 1sg agreement morpheme, \textit{wa}:

(10) Wa-psiča.
  \textsuperscript{1\textsuperscript{st}}sg Agr-jumped
  ‘I jumped.’ (Legenęre and Rood 1992:380)

In the Lakota verb, the subject agreement affix (spelling out features of Infl/T) is in a fixed position adjacent to the left edge of the verb stem.\textsuperscript{6} It is preceded by the (clitic) morpheme that cross-references the object:\textsuperscript{7}

(11) Wičha-wa-kte.
  \textsuperscript{3\textsuperscript{rd}}piCL-1\textsuperscript{st}sg Agr-kill
  ‘I kill them.’ (Boas and Deloria 1941:76)

I argue that a portmanteau morpheme is used in 1\textsuperscript{st} subject - 2\textsuperscript{nd} object combinations in order to allow both the first and the second person features to be perfectly aligned to the left edge of the verb. The relevant formal OT constraint requires every local (first and second) person feature to align to the left edge of the verb:

\textsuperscript{6} The agreement associated with Infl/T in Lakota is only spelled out when the nominative argument is an external argument, placing Lakota in the typological category of languages with an active-stative agreement pattern. See Woolford 2010 for a formal analysis.

\textsuperscript{7} I argue in Woolford 2010 that the object cross-referencing morphemes in Lakota are pronominal clitics, but that is not crucial here.
Local Person Alignment Constraint

**LOCAL→VERB**  
Align every local (1st & 2nd) person feature to the left edge of the verb.

Selecting the portmanteau agreement form čhi (1st-2nd) from the lexicon allows both the first and the second person features to be aligned exactly to the left edge of the verb, because both features are spelled out on a single portmanteau morpheme which can be perfectly aligned to the left edge of the verb. The object cross-referencing morpheme generated in syntax is then not spelled out at PF. I indicate forms from syntax that are not spelled out at PF with overstriking:

(13)  
\[ \text{2nd CL- \čhi- verb} \]  
\[ 1^{st}.2^{nd} \text{Agr} \]

If both morphemes were spelled out, the 2nd person feature would not be exactly adjacent to the left edge of the verb, but the alignment constraint requires that every first and second person feature be aligned exactly to the edge of the verb. The local alignment constraint is not satisfied if one local person is aligned to the edge of the verb and the other is as close as it can be. The alignment must be exact, not merely close:  

(14)  
\[ \text{2nd CL-1st Agr-verb} \]  
(2nd Clitic is not exactly aligned to the verb)

The fact that an example where two or more elements are ‘lined up by person’ actually incurs a violation of person alignment constraints is the key to the understanding why a portmanteau form is preferred in this situation, rather than spelling out both cross-referencing morphemes.

We turn now to a surface form in Lakota that appears to violate the standard person hierarchy, in that the elements appear to be lined up ‘wrong’, along with an account of why it is nevertheless the best candidate. Later in the paper, in the discussion of languages with morphological slot competition, we will see how a particular ranking of the above constraints already predicts that in some languages, 2nd person wins a morphological ‘slot’ instead of 1st.

Lakota has only one portmanteau agreement morpheme, used when the subject is 1st person singular and the object is second person, as in (9) above, repeated below:

(15) Čhi- ktele.  
\[ 1^{st}.2^{nd}-\text{kill} \]  
‘I kill you.’  
(Boas and Deloria 1941:76)

---

8 The idea that features can be aligned to an edge appears has been used in previous work, e.g. Grimshaw 2001. I will be intentionally vague in this paper at to whether this alignment is to the edge of the verb or the edge of the prosodic word of the verb.

9 In formal OT terms, these constraints are not gradient. See McCarthy 2003 for a discussion of the status of gradient alignment in OT.
No portmanteau agreement form is used in the opposite, 2nd subject-1st object combination. Instead, both cross-referencing forms are spelled out, maintaining the fixed order of clitic-agreement-verb stem, as in (16): 10

(16) Ma-ya-kte.
   1st CL-2nd Agr-kill

(17) Ya-čhey’e.
   2nd Agr-cry
   ‘You cry.’   (Williamson 1979: 353)

Why is no portmanteau morpheme used in 2-1 combinations in Lakota? The same pressure to align both local persons to the left edge of the verb should be present, in the form of the local alignment constraint in (12), and yet no portmanteau morpheme is used. Instead, both cross-referencing forms from syntax are spelled out as individual morphemes, violating both the local and 1st person alignment constraints. Why does this occur?

Answering this question by saying that there simply are no 2-1 portmanteau morphemes in the lexicon of Lakota treats this as an accidental lexical gap; but this same ‘accidental’ gap occurs in three of the four unrelated languages discussed in this section: Lakota, Yimas, and Guarani. Clearly something blocks 2-1 portmanteau agreement forms in some languages, but not others. One possibility discussed in Woolford 2010 is a constraint or constraints enforcing the following descriptive generalization:

(18) Portmanteau Person Constraint (Descriptive Generalization)

The person of the subject must be higher than the person of the object in order to use a portmanteau agreement morpheme.

Under the assumption stated above that only agreement morphemes can be portmanteau, we can rephrase the above generalization in a way that does not make reference to grammatical relations. This version will apply to any language where subjects/nominatives are cross-referenced with true agreement, while objects are cross-referenced with some kind of clitic.

(19) Revised Portmanteau Person Restriction

The person of the agreement morpheme must be as high or higher than the person of the adjacent pronominal clitic before the features of these two elements can be spelled out with one portmanteau agreement morpheme.

10 This claim is consistent with the conclusion of Boas and Deloria 1941:76 that the principle that orders the cross-referencing forms in example (16) is not person, but rather that the object (affix) precedes the subject (affix). There is clear evidence from clitic ordering in Lakota for the universal 1>2>3> person hierarchy, see Woolford 2010.
This restriction could follow from an approach that treats portmanteau agreement formation somewhat like vowel coalescence, by regulating what features can be combined, and what features the surface element will have. For example, one might imagine that if the agreement is [-local], it cannot form a morphological portmanteau with a clitic that is [+local]. That is, the descriptive constraint in (19) could be the result of a restriction such the following:

(20) Agreement - Pronominal Clitic Coalescence Restriction on Portmanteau Formation

An agreement morpheme can be spelled out as a portmanteau that includes features from an adjacent pronominal clitic only if that clitic has no marked feature that the agreement lacks.

This restriction would not prevent a portmanteau of first person agreement and a second person pronominal clitic, because the agreement would be [+1\text{st}], while the clitic is [-1\text{st}], and both would be [+local], so that the clitic would not have any more marked person feature than the agreement has. In contrast, this restriction would block portmanteau formation when the agreement is second person but the adjacent clitic is first person. Here the clitic would have the more marked version of the 1\text{st} feature, [+1\text{st}] while the agreement would have the less marked [-1\text{st}] feature, violating the above portmanteau restriction.

Although we would still want to derive the above restriction from some (combination of) constraints that would enforce it, I will treat this restriction as a constraint for the purposes of illustrating how its ranking among the other constraints discussed here would affect the outcome. If this ‘portmanteau constraint’ is ranked above the local alignment constraint that favors using a portmanteau morpheme in Lakota, as in Tableau 1 below, it would rule out portmanteau agreement in 2\text{nd}-1\text{st} combinations. The (a) candidate with a 2-1 portmanteau morpheme is rejected by the above ‘portmanteau constraint’, leaving the (b) candidate the winner, even though the 1\text{st} clitic in the (b) candidate violates both the 1\text{st} and local alignment constraints: 11

Tableau 1: Blocking Portmanteau Agreement

<table>
<thead>
<tr>
<th>input from syntax: 1\text{st}CL-2\text{nd} Agr-verb</th>
<th>‘Portmanteau Constraint’</th>
<th>1\text{ST}→VERB</th>
<th>LOCAL→VERB</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 2\text{nd}1\text{st} Agr-verb (portmanteau)</td>
<td>*! 2-1 PORT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>→b. 1\text{st}CL-2\text{nd} Agr-verb</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11 An additional (c) candidate where one of the forms is not spelled out at all will be discussed in the next section, where Lakota is contrasted with Yimas with respect to the treatment of 2-1 combinations.
(21) Ma-ya-kte.
   1\textsuperscript{st} CL-2\textsuperscript{nd} Agr-kill

In the next section, we turn to Yimas, another language with morphological portmanteau agreement which shares with Lakota the property of having very few portmanteau agreement morphemes, and limiting those to 1-2 local person combinations. However, there is a contrast between Yimas and Lakota with respect how they deal with 2-1 combinations.

1.3 Yimas

Yimas is a language from Papua New Guinea documented in detail in Foley 1991. The analysis of the Yimas agreement pattern presented here is an updated version of the analysis in Woolford 2003a, which builds on Foley 1991. Yimas has three series of cross-referencing morphemes, which I identify as a series of clitics (phrasal or peripheral clitics, pcl), followed by the agreement associated with Infl/T, followed by a series of head clitics (clitics that adjoin to a head, hcl). This morpheme order is shown in (22) and illustrated with the example in (23).

(22) Yimas morpheme order   pcl=Agr-(hcl-)verb stem(-hcl)
(23) uraŋ k=mpu-ŋa-tkam-t.
    coconut 3sg.pcl=3pl.Agr-1sg.hcl-show-perf
    ‘They showed me the coconut.’ (Foley 1991:208)

The phrasal/peripheral clitics (pcl) are limited to one per clause; they encode the person, number, and noun class of any one argument. The agreement morpheme always cross-references the nominative/subject, because it is the spell-out of Infl/T in syntax. The third series is identified as a head clitic (using the terminology in Marantz 1988) because it behaves as an element adjoined to the verb in syntax, in that it can be linearized at PF either preceding or following the verb.\footnote{I incorrectly identified this series as object agreement in Woolford 2003a.}

The head clitic (hcl) has a local person feature and is linearized as a prefix on the verb in the example above in (23) by the same local alignment constraint that we saw operating in Lakota, repeated below in (24):

(24) Local Person Alignment Constraint:

\[
\text{LOCAL} \rightarrow \text{VERB} \quad \text{Align every local (1\textsuperscript{st} and 2\textsuperscript{nd}) feature to the left edge of the verb.}
\]

In contrast, when the head clitic is third person and is thus not targeted by local alignment, it is linearized as a suffix, as in the example in (25) below.\footnote{I argue in Woolford 2013 that the reason that the third person head clitic is suffixed to the verb, rather than prefixed, is because that allows the left edge of the verb to align to the left edge of its prosodic word.}

(25) uraŋ k=mpu-ŋa-tkam-t.
    coconut 3sg.pcl=3pl.Agr-1sg.hcl-show-perf
    ‘They showed me the coconut.’ (Foley 1991:208)
(25) uraŋ k=mpu-tkam-r-mpn.
coconut 3sg.pcl=3pl.Agr-show-prf-3dual.pcl
‘They showed them(dual) the coconut.’ (Foley 1991:208)

That local alignment is why a portmanteau agreement morpheme is used when the subject is first person and the object is second person in Yimas. The reason is the same as in Lakota: using a portmanteau form allows both local persons to be aligned exactly at the left edge of the verb stem.

(26) Portmanteau Agreement Morpheme: mpan 1st person subject–2nd person object:

(27) irpm mu=mpan-tkam-t.
coconut palm 3sg.pcl=1st.2ndAgr-show-perf
‘I showed you a coconut palm.’ (Foley 1991:214)

The situation is different when the subject is second person and the object is first person. As in Lakota, there is no portmanteau 2-1 agreement morpheme. However, what Yimas does instead in 2-1 configurations is different than what we saw in Lakota. In order to avoid violating the local person alignment constraint in 2-1 combinations, Yimas simply does not spell out the second person morpheme at all. Instead of the three cross-referencing morphemes that we saw in examples (23) and (25) above, only the phrasal clitic and the head clitic are spelled out. The expected second person agreement morpheme is simply not pronounced:

(28) 3rdpcl-2nd Agr-1st.hcl-verb

(29) uraŋ k=ŋa-tkam-t.
coconut 3sg.pcl=1sg.hcl-show-perf
‘You showed me the coconut.’ (Foley 1991:214)

Yimas maintains perfect person alignment, but at the cost of failing to spelling out one of the local features, violating the faithfulness constraint MAX(LOCAL). This contrasts with Lakota above which faithfully spells out all local features at the expense of violating person alignment. This difference in the two languages follows from a difference in the relative ranking of the local faithfulness and local alignment constraints in the two languages. In Yimas, LOCAL→VERB is ranked above MAX(LOCAL), and thus takes precedence over it, as in Tableau 2:

Tableau 2: Yimas Constraint Ranking

<table>
<thead>
<tr>
<th>Input from syntax: 3sg.pcl-2ndAgr-1st.hcl-verb</th>
<th>LOCAL→VERB</th>
<th>MAX(LOCAL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 3sg.pcl-2ndAgr-1st.hcl-verb</td>
<td>*</td>
<td>!</td>
</tr>
<tr>
<td>b. 3sg.pcl-2ndAgr-1st.hcl-verb</td>
<td>*</td>
<td>!</td>
</tr>
</tbody>
</table>
Under the Yimas constraint ranking, it is better not to spell out the second person morpheme at all, than it would be to spell it out in a position where it is not aligned exactly at the left edge of the verb.

The reverse is true in Lakota. In Lakota, it is better to spell out the second person agreement morpheme, obeying \textit{MAX(LOCAL)}, even if that means that the first person clitic cannot be aligned exactly to the left edge of the verb, violating \textit{LOCAL} $\rightarrow$ \textit{VERB}, as in example (30). Tableau 3 shows how this choice follows from ranking these two constraints so that \textit{MAX(LOCAL)} takes precedence over \textit{LOCAL} $\rightarrow$ \textit{VERB}: \footnote{As noted above, the agreement morpheme occupies a fixed position in Lakota at the left edge of the verb stem, with any clitics in a more peripheral position. Thus a (c) candidate in Tableau 3 with a 2\textsuperscript{nd} Agr-1\textsuperscript{st} Cl-verb order is not possible.}

\begin{table}[ht]
\centering
\begin{tabular}{|c|c|c|}
\hline
input from syntax: & \textbf{MAX(LOCAL)} & \textbf{LOCAL} $\rightarrow$ \textbf{VERB} \\
\hline
1\textsuperscript{st} CL-2\textsuperscript{nd} Agr-verb & & \\
\hline
\hline
a. 1\textsuperscript{st} CL-2\textsuperscript{nd} Agr-verb & *! & \\
\hline
\hline
$\rightarrow$ b. 1\textsuperscript{st} CL-2\textsuperscript{nd} Agr-verb & * & \\
\hline
\end{tabular}
\caption{Lakota Constraint Ranking}
\end{table}

(30) \textit{Ma-ya-kte.} \hfill \textit{[Lakota]}
\begin{flushleft}
1\textsuperscript{st} CL-2\textsuperscript{nd} Agr-kill
\end{flushleft}
\begin{flushright}
‘You kill me.’ \hfill (Shaw 1980:35, Legendre and Rood 1992:380)
\end{flushright}

We have now seen that two unrelated languages, Lakota and Yimas, both use a portmanteau morpheme in 1-2 combinations, but obey a restriction blocking 2-1 portmanteau forms. We have also seen how the two languages have different strategies to deal with the constraint violations that using a portmanteau form in 2-1 constructions would have prevented. We now turn to a third language, Guarani, which shows the effects of these same constraints with the additional complication of morpheme ‘slot’ competition.

1.4 Guarani

Guarani differs from Lakota and Yimas in limiting the number of cross-referencing morphemes that are spelled out to one per clause. This type of agreement system, often called hierarchical agreement (e.g. Nichols 1992, Siewierska 1996), involves morphological slot competition (Zwicky 1987) wherein the subject and object cross-referencing morphemes compete for one morphological ‘slot’. The winner of this competition is the form with the higher person (Velázquez-Castillo 1991:331). I postulate here, as above, that both cross-referencing forms are generated in syntax: true agreement with the nominative subject, and some kind of
clitic/ incorporated pronominal cross-referencing the object. The competition for which will be spelled out occurs at PF.

In competitions between a local (1st or 2nd) person and a third person, only the cross-referencing form with the local person feature is spelled out in Guarani. We see this in the 1-3 combination in (31), where only the first person subject agreement form is spelled out, and also in the 3-1 combination in (32) where only the first person object clitic is spelled out: 15

(31) A-hecha Juan-pe.
   1sgAgr-see Juan-PE
   ‘I see/saw Juan.’ (Tonhauser 2006 (5))

(32) Che-hecha Juan.
    1sgCL-see Juan
    ‘Juan sees/saw me.’ (Tonhauser 2006 (6))

The same pattern occurs in 2-3 and 3-2 combinations: only the local person cross-referencing morpheme is spelled out.

(33) (Nde) rei-nupâ la-jagua.
    you 2sgAgr-beat the-dog
    ‘You beat the dog.’ (Velázquez-Castillo 1991 (28))

(34) Petei jagua nde-su?u.
    one dog 2sgCL-bite
    ‘A dog bit you.’ (Velázquez-Castillo 1991 (30))

A portmanteau morpheme is used in 1-2 combinations in Guarani, just as in Lakota and Yimas:

(35) Roi-su’ú-ta.
    1st.2nd sgAgr-bite-TA
    ‘I will bite you.sg.’ (Tonhauser 2006 (8a))

Using a portmanteau agreement morpheme in this 1-2 combination allows Guarani to spell out both local features with one morpheme, obeying MAX(LOCAL), while still conforming to the limit of one cross-referencing morpheme in the available ‘slot’.

Like Lakota and Yimas, Guarani obeys the above discussed ‘portmanteau constraint’ prohibiting a portmanteau agreement morpheme in 2-1 combinations. The strategy that Guarani uses in 2-1 combinations is the same as in Yimas: spell out only the first person form, obeying MAX(1st). Given the one ‘slot’ limit, Guarani cannot use the strategy that Lakota uses of spelling out both morphemes.

15 I use the terms ‘subject agreement’ and ‘object agreement’ here descriptively. The ‘subject’ agreement morpheme spells the features of Infl/T, just as in English and many other languages.
(36) Che-su’u-ta.
   1sgCL-bite-TA
   ‘You will bite me.’ or ‘She/he/it will bite me.’   (Tonhauser 2006 (8c))

I argue that this slot competition/‘one slot’ limit is result of the operation of alignment
constraints, under the restrictive assumption that only one element can actually be perfectly
aligned to any particular edge, while anything other than perfect alignment violates alignment
constraints. In the competition between local elements shown in Tableau 4 below, the same local
alignment constraint discussed above will do the job if it is ranked above the constraints
requiring local features to be spelled out. The input from syntax contains both the subject
agreement and the object clitic, and the candidates in Tableau 4 differ as to which of these are
spelled out at PF. The first person form beats the second person form in such ‘slot competition’
situations as long as MAX(1ST) is ranked above *1ST and *LOCAL, as described in detail below
Tableau 4. (Since both the subject and object cross-referencing forms are never spelled out
together, we cannot see what linear order they would take if they did, so both possible orders are
shown in the candidate set below.) The restriction that blocks portmanteau agreement in 2-1
combinations is abbreviated here as *2-1 PORT.

Tableau 4: Guarani Slot Competition

<table>
<thead>
<tr>
<th>input from syntax</th>
<th>*2-1 PORT</th>
<th>LOCAL→VERB</th>
<th>MAX(LOCAL)</th>
<th>MAX(1ST)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2ndAgr, 1CL’, verb</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. 2nd-1st-verb</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>or 1st-2nd-verb</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>→b. 2nd-1st-verb</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>or 1st-2nd-verb</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. 2nd-1st-verb</td>
<td>*</td>
<td></td>
<td></td>
<td>*!</td>
</tr>
<tr>
<td>or 4th-2nd-verb</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. 2nd-1st-verb</td>
<td>**!</td>
<td></td>
<td></td>
<td>*</td>
</tr>
<tr>
<td>or 1st-2nd-verb</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. 2nd,1stAgr-verb (portmanteau)</td>
<td>*!</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The possibility of inserting a portmanteau 2-1 agreement morpheme in candidate (e) is ruled out
by the highly ranked constraint against a portmanteau when the object person features are more
marked than the subject person features. Candidate (a) where both local elements are spelled out
is ruled out because the local feature on one of the two forms is not exactly aligned to the left
edge of the verb, thus violating the highest ranked constraint, LOCAL→VERB. Candidates (b) and
(c) beat candidate (d) because they spell out one of the local features, whereas (d) spells out none
Candidate (b) emerges as the winner because it spells out the 1st feature that candidate (c) does not, violating \( \text{MAX}(1^\text{st}) \).

In the Guarani slot competition, first person beats second person; however, in a language ranking these same constraints somewhat differently, second person can beat first person in such a ‘slot’ completion, as we will see below in Reyesano (section 1.5).

Like the other languages with morphological portmanteau agreement discussed in this paper, Guarani has no 3rd-3rd portmanteau morpheme. What surfaces in 3-3 combinations in Guarani is just the 3rd subject agreement morpheme, as in example (37):

\[
\text{(37) O-hecha} \quad \text{Juan-pe.} \\
\text{3rd Agr-see} \quad \text{Juan-PE} \\
\text{‘He/she/it sees/saw Juan.’} \\
\text{(Tonhauser 2006:132 (7))}
\]

Third person object cross-referencing forms (clitics) never win the ‘slot’ competition in Guarani, and are never spelled out in Guarani; thus, there are no third person object clitic forms in the lists of Guarani cross-referencing morphemes in Tonhauser 2006:132 or Velázquez Castillo 2008:382. One possible account of why the subject agreement morpheme wins the slot in the above example is as follows: Assuming that the ‘subject’ agreement form is true agreement (spelling out the phi features of Infl/T), while the object cross-referencing forms in Guarani (which Tonhauser 2006 labels neutrally as B forms) are some sort of pronominal clitic, then the markedness constraint \( \text{*CLITIC} \) (Bresnan 2001) would block the spell out of these forms unless that is required by a higher ranking constraint.\(^{16}\) If the \( \text{MAX} \) (LOCAL) constraint is ranked higher than \( \text{*clitic} \), that will require the object cross-referencing form to be spelled out if it is 1st or 2nd person. Thus the ranking \( \text{MAX} \) (LOCAL) \( \gg \) \( \text{*CLITIC} \) \( \gg \) \( \text{MAX} \) (CLITIC) would prevent the spell out of object clitics unless the clitic carries a local person feature.\(^{17}\)

---

\(^{16}\) Bresnan 2001 establishes a hierarchy of cross-referencing forms wherein pronominal clitics are more marked than agreement affixes; thus under the assumptions above in section 1.1), constraints can target clitics.

\(^{17}\) A complete account would require an answer to the question of why the third subject agreement morpheme is spelled out in Guarani, in the absence of a faithfulness (MAX) constraint targeting third person. Third person arguments often carry other features such as [+human] or [+animate] that can be targeted by faithfulness constraints. I put this question aside here.
1.5 Reyesano: How 2nd Can Beat 1st Without a Language Specific Person Hierarchy

Under a different ranking of the constraints discussed above, 2nd person is predicted to beat 1st in such a slot competition, even though a strict universal person hierarchy of 1>2>3 is assumed. Second person will beat first person if the above constraints are ranked so that \(^*_{1^{st}} \gg \text{MAX}(1^{st})\), as shown in Tableau 5:

<table>
<thead>
<tr>
<th>input from syntax</th>
<th>LOCAL→VERB</th>
<th>MAX(LOCAL)</th>
<th>(^*_{1^{st}})</th>
<th>(^*_{LOCAL})</th>
<th>MAX(1^{st})</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. 2nd 1st verb</td>
<td>*!</td>
<td></td>
<td>*</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>b. 2nd 1st verb</td>
<td>*</td>
<td>*!</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. 2nd 4th verb</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. 2nd 4th verb</td>
<td>**!</td>
<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

Under this ranking, spelling out both local persons as in candidate (a) is ruled out because one or the other cannot be aligned exactly at the left edge of the verb. However, spelling out as many local features as possible (i.e. one here) better satisfies \text{MAX}(\text{LOCAL})\), as in candidates (b) and (c), than spelling out none does, as in candidate (d). Thus the competition comes down to whether to spell out the 1st or the 2nd person form. Here, spelling out the first person feature in candidate (b) violates \(^*_{1^{st}}\), leaving candidate (c) where the 2nd person form is spelled out as the winner.\(^{18}\)

This predicted pattern of data is realized in Reyesano, as shown in the examples below. In transitives involving one local person and one third person, the local person is cross-referenced with a prefix (obeying the \text{MAX}(\text{LOCAL})\) constraint requiring local features to be spelled out):

(38) **M-a-ba(-a)** **1sg-pst-see-pst** empathy bm sloth (bm stands for boundary marker) ‘I saw a sloth.’ (Guillaume 2009 (10a))

(39) **Lasha** te **m-a-kachi-ta(-a)** te **wabu kwana.**
almost bm **1sg-pst-bite-3rd-pst** bm peccary pl ‘The peccaries almost bit me.’ (Guillaume 2009 (13))

\(^{18}\) An analogy with what happened when the Titanic was sinking may give readers an intuitive feel for the idea that the highest element in the hierarchy can lose out only if it ‘bows out’. At the time when the Titanic sailed, there was a strict hierarchy in society of men>women>children. The fact that it was the women and children who got the lifeboats was not because they staged a coup and beat up the men; rather the men were still in control and ‘bowed out’.
In transitives where both the subject and object are local persons, the second person always wins the prefix ‘slot’, regardless of whether the second person argument is the subject or the object of the clause:

(40) **Mi**-a-ba(-a).  
2sg-pst-see-past  
‘I saw you’ or ‘you saw me’ (or ‘you saw him/her/it/them’) (Guillaume 2009 (22))

As shown above in Tableau 5, second person wins only because first person is pulled from the competition by the markedness constraint *1st, which prohibits first person from being spelled out.

Since the constraints used here are based on the universal person hierarchy 1>2>3 (see section 1.1), it is not necessary for the theory to allow a language specific person hierarchy with 2nd above 1st in order to account for languages where second person wins a slot competition, contra the assumption for Reyesano in Guillaume 2009, and the standard assumption for the prefix slot competition in Algonquian languages (e.g. Wolfart 1973, Rhodes 1976, Croft 1990, Siewierska 2004).

A remaining question regarding Reyesano, one which is very relevant to the topic of this paper, is why Reyesano does not use a portmanteau morpheme in order to spell out both local persons in the one ‘slot’ like Guarani does, at least in 1-2 combinations. Rather than merely attributing this to a lack of portmanteau agreement morphemes in the Reyesano lexicon, it would be better if we could explain this ‘lexical gap’. One possible reason for the lack of a portmanteau prefix in Reyesano is related to the assumption stated above that portmanteau forms are always true agreement morphemes, and portmanteau pronominal clitics/incorporated pronouns do not exist. In Reyesano, there is reason to think that both of the cross-referencing forms that fight for the prefix slot are pronominal clitics of some sort. There is an agreement affix in Reyesano, spelled out only when the subject is third person, and this agreement affix is suffixed to the verb:

(41) A-manu-ta(-a) te tuna.  
pst-die-3rd-pst bm 3pl pronoun  
‘They died.’ (Guillaume 2009 (7b))

(42) Lasha te m-a-kachi-ta(-a) te wabu kwana.  
almost bm 1sg-pst-bite-3rd-pst bm peccary pl  
‘The peccaries almost bit me.’ (Guillaume 2009 (13))

---

19 A similar reason for why second person can win a slot competition even with a universal person hierarchy of 1>2>3 is proposed in Nevins and Sandalo’s 2011 analysis of Kadiwéu. They argue that first person is subject to a rule of morphological deletion due to the greater markedness of first person, and not because 2nd person “trumps” first person.

20 In grammars which are purely descriptive, however, it is nonetheless descriptively accurate to say that the relative priority list for access to a particular ‘slot’ can be expressed as a hierarchy, e.g. 2>1>3; the claim here is only that such language specific person hierarchies play no role in the formal grammar.
If the prefix slot in Reyesano is only occupied by pronominal clitics, then we do not expect to see a portmanteau prefix if portmanteau pronominal clitics are impossible in principle.

In the next section we look at a Carib language that provides evidence in support of the idea that ranked constraints determine whether a portmanteau morpheme will be used, rather than the mere presence or absence of a suitable morpheme in the lexicon.

1.6 De'kwana

De'kwana is a Carib language described in Hall (1984, 1988). Like Guarani, De'kwana has morphological ‘slot’ competition based on person so that in any subject-object combination involving one local (first or second) person and one third person argument, it is always the local person cross-referencing morpheme that is spelled out:21

(43) \textit{W-eka-a.}  
\textit{1st Agr}–bite-present.  
‘I bite it/him.’

(44) \textit{"Od-edant(ö)-a.}  
\textit{2nd CL}–meet-present  
‘He meets you.’ (Hall 1984:155)

Also like Guarani, De'kwana uses a portmanteau agreement form in 1-2 combinations, so that both local persons can be spelled out in one morpheme prefixed to the verb, satisfying both MAX(LOCAL) and LOCAL→VERB:

(45) \textit{Mön-edant(ö)-a.}  
\textit{1st.2nd Agr}–meet-present  
‘I meet you.’ (Hall 1984:155)

In contrast, something different happens in negative clauses in De'kwana. Negative clauses in De'kwana have an auxiliary verb in addition to the main verb, providing two places where a local person can be aligned to the left edge of a verb, as Hall 1984 notes: “In negative forms, two prefix positions are available by virtue of the presence of an auxiliary verb with negative forms (Hall 1984:156).” We see this in the example in (46) below:

(46) \textit{"On-eka-'da w-(ö)-a.}  
\textit{3rd CL}–bite-neg \textit{1st Agr}–be-present  
‘I don’t bite it/him.’ (Hall 1984:157)

Since there are two verbs in negative clauses, there is no need to use a portmanteau morpheme in 1-2 and 2-1 combinations in order to obey LOCAL→VERB,. Instead it is possible to fully satisfy

\footnote{The reason is the same as described above for Guarani: the MAX(LOCAL) constraint requires that first and second person features be spelled out.}
MAX(LOCAL) by spelling out both local person morphemes, the subject agreement attached to the auxiliary verb and the clitic to the main verb:

(47) Ad-ayhuku-‘da  w-(ö)-a üwu.
    2ndCL-hit-neg  1stAgr-be-present  I
‘I don’t hit you.’

(48) Y-ayhuku-‘da  m-(ö)-a omödö.
    1stCL-hit-neg  2ndAgr-be-present  you
‘You don’t hit me.’ (Hall 1988: 338)

The fact that no portmanteau morpheme is used in such examples despite the fact that a portmanteau morpheme is available in the lexicon for the 1-2 combination shows us something important: the mere existence of a portmanteau form in the lexicon does not cause its use. 22

Another difference between De'kwana and the three languages discussed above is that De'kwana also uses a portmanteau agreement form for 2-1 combinations, in positive clauses.

(49) Kö-(e)dant(ö)-a.
    1st.2nd-met-present
‘You met me.’ (Hall 1984:155)

Thus De'kwana does not obey the ‘portmanteau restriction’ discussed above that rules out morphological portmanteau forms in 2nd subject-1st object configurations, showing us that this restriction is not universal. In the formal grammar of De'kwana, MAX(LOCAL) is ranked above the portmanteau constraint, unlike the situation in the above three languages, and thus spelling out all local features is a higher priority than obeying the portmanteau restriction barring 2-1 portmanteau forms.

In the next section we turn to syntactic portmanteau agreement, illustrated by Inuit. The large number of portmanteau agreement forms that we will see in Inuit, as well as the diverse person combinations they encode, is strikingly different from what we have seen in the languages with morphological portmanteau languages, where none of the languages discussed have any portmanteau forms involving third person. 23

2. Syntactic Portmanteau Agreement

Languages can potentially have syntactic portmanteau agreement if Infl/T can enter into a

\[ \text{---------------------} \]

22 The idea that a word in the lexicon that could be inserted is not necessarily inserted unless the constraints require/allow it to appear in Grimshaw’s 1977 analysis of do insertion.

23 This lack of morphological portmanteau agreement forms involving third person is partially explained by the fact that the neither person alignment constraints nor person faithfulness constraints that favor using a portmanteau form specifically target third person (as discussed above in section 1.1). However, given that there are features carried by third person arguments that constraints could target, such as marked gender or number features, we cannot rule out the possibility of 3-3 portmanteaus in morphological portmanteau languages altogether.
multiple agree relation and receive features from more than one argument. In all languages, Infl/T has a nominative case feature and probes down (under c-command) to value this case on the closest DP whose case is not already valued (Chomsky 2000). In many languages, if the subject has inherent/lexical case, e.g. ergative (valued during theta licensing), Infl/T can probe to and past the inherently cased subject to value nominative case on the object. This is known as a multiple agree relation (Chomsky 2000).  

(50) \[ \text{Infl/T} \rightarrow \text{DP-erg/dat} \rightarrow \text{DP-nom} \]  

In a multiple agree relation, Infl/T can receive phi features from each argument it probes. In many languages with ergative and dative subject constructions, however, only the phi features from the nominative argument are spelled out at PF. An exception is Inuit, an ergative language with a large set of portmanteau agreement morphemes in its lexicon.

It is not easy to determine exactly how many portmanteau agreement forms there are in Inuit. The reason for this is the difficulty of distinguishing between two adjacent morphemes with phonological changes at their boundary, and a single portmanteau agreement morpheme which shows historical traces of having been reanalyzed at some point from previously separate adjacent morphemes. In fact, this difficulty suggests a historical path by which Inuit might have acquired large numbers of portmanteau agreement morphemes in its lexicon. Inuit gives the appearance of having once had separate mood, agreement, ergative clitic, and nominative clitic morphemes suffixed to the verb as shown in (51):

(51) Possible Historical Morpheme Order in the Inuit Verb:

verb-mood-agr-ergative clitic-nominative clitic

This pattern of morphemes (with both agreement and a nominative clitic in the same clause) is known to occur in natural languages, e.g. in Kashmiri, as in the examples below. Note that nominative arguments are doubly cross-referenced by both the agreement affix associated with Infl/T and by a nominative clitic:

(52) Tse vuch-u-th-as bl. [Kashmiri]  
you.ERG saw-Agr(masc.sg)-CL(2\textsuperscript{nd} sg.erg)-CL(1\textsuperscript{st} sg.nom) 1\textsuperscript{st} nom.masc  
‘You saw me(masculine).’ (Wali and Koul 1994a (4))

(53) BI ch-u-s gatsha:n. [Kashmiri]  
I(1\textsuperscript{st} nom.masc) be-Agr(masc.sg)-CL(1\textsuperscript{st} sg.nom) go.present participle  
‘I am going.’ (Wali and Koul 1997:152)

In Inuit, there are observable regularities that initially tempt one to try to segment the verb into the underlying morphemes shown in (51), with various phonological changes to produce the

---

24 In some ergative languages, Infl is blocked from probing past an ergative subject due to a stronger locality restriction and the resulting case pattern is ergative accusative instead of ergative-nominative (Legate 2006, Woolford 2003b,c, 2007, Broekhuis and Woolford 2013).
actual surface forms. These regularities are discussed in work such as Fortescue 1984 and Bok-Bennema 1991, but both authors also note many irregularities that weigh against postulating all of these separate morphemes in the synchronic grammar. Neither author comes to a definitive conclusion as to the exact morphological boundaries in the synchronic grammar, but it appears probable from their discussion and the pattern of the data shown below that the mood, agreement, and ergative clitic morphemes have all been reanalyzed (via morpheme boundary loss) into one portmanteau agreement morpheme in the synchronic grammar. The nominative clitic remains as a separate morpheme, although it is not always spelled out when its features are expressed by the portmanteau agreement morpheme:

(54) Hypothesized arrangement of morphemes in the synchronic grammar of Inuit:

\[ \text{verb+portmanteau agreement(+nominative clitic)} \]

However, readers should bear in mind that the purpose here is to give readers an idea of what a syntactic portmanteau agreement system looks like, in terms of the large number and diverse features of portmanteau agreement morphemes it uses, so that it can be contrasted with the languages discussed above with morphological agreement. I do not claim that this is a definitive analysis of Inuit morphology.

Let us begin by looking at the agreement pattern in intransitive constructions in Inuit. Fortescue 1984 analyzes these as single portmanteau morphemes: “The indicative mood is marked by a set of fused person/number inflections (Fortescue 1984:288)”:

(55) Fused Agreement/Indicative Mood Morphemes (Fortescue 1984:288):

<table>
<thead>
<tr>
<th>Number</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>1sg</td>
<td>vunga</td>
</tr>
<tr>
<td>1pl</td>
<td>vugut</td>
</tr>
<tr>
<td>2sg</td>
<td>vutit</td>
</tr>
<tr>
<td>2pl</td>
<td>vushi</td>
</tr>
<tr>
<td>3sg</td>
<td>vuq</td>
</tr>
<tr>
<td>3pl</td>
<td>pput</td>
</tr>
</tbody>
</table>

However, I follow Bok-Bennema 1991 in separating out first and second person nominative clitics in some of these forms, as in (56), based on their occurrence in transitive constructions, as shown below in (57):

25 Morpheme boundary loss is a well documented type of reanalysis in language change. *The Dictionary of Historical and Comparative Linguistics* defines boundary loss as “The disappearance of a morpheme boundary which has become opaque as a consequence of other changes (Trask 2000:45).”

26 A comparison of these forms with the interrogative forms below from (Bok-Bennema 1991) provides additional evidence for viewing these as fused forms combining mood and agreement: 1sg vuq, 2sg vi, 3sg va.
(56) Revised morpheme divisions in intransitive indicatives

<table>
<thead>
<tr>
<th>mood/agreement</th>
<th>nominative clitic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1sg</td>
<td>vu</td>
</tr>
<tr>
<td>1pl</td>
<td>vu</td>
</tr>
<tr>
<td>2sg</td>
<td>vu</td>
</tr>
<tr>
<td>2pl</td>
<td>vu</td>
</tr>
</tbody>
</table>

We see these first and second person nominative clitics again in transitive constructions with a third person subject, as shown below (data from Fortescue 1984 and Bok-Bennema 1991:198).

(57) Transitive forms with a third person subject:

<table>
<thead>
<tr>
<th>portmanteau agreement</th>
<th>nominative clitic</th>
<th>complete surface form</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-1sg vaa</td>
<td>nga</td>
<td>vaanga</td>
</tr>
<tr>
<td>3-1pl vaati</td>
<td>gut</td>
<td>vaatigut</td>
</tr>
<tr>
<td>3sg-2sg vaa</td>
<td>tit</td>
<td>vaatit</td>
</tr>
<tr>
<td>3-2pl vaa</td>
<td>si</td>
<td>vaasi</td>
</tr>
<tr>
<td>3pl-2sg vaatsit</td>
<td></td>
<td>vaatsit</td>
</tr>
</tbody>
</table>

The agreement forms in (57), which presumably spell out features of Infl/T, look different from the intransitive agreement forms above and thus appear to be portmanteau, encoding some features from both the ergative subject and nominative object, as indicated in my glosses.

Inuit also has three different portmanteau morphemes for 3-3 combinations:

(58) 3sg-3sg vaa  
3sg-3pl vai  
3pl-3 vaat

Thus Inuit is unlike the languages discussed above with morphological portmanteau agreement, which have no portmanteau forms involving third person.

In clauses where the ergative subject is first or second person, one is sometimes tempted to separate out an ergative clitic from the agreement morpheme. Bok-Bennema 1991:197-199 hypothesizes that the ergative clitics should look like the genitive clitics in Inuit, listed in (59) below, but that given the amount of irregularity in the surface forms shown below in (60), the agreement in clauses with first and second person arguments is probably portmanteau.

(59) Genitive clitics in Inuit (Bok Bennema 1991:197):

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1sg</td>
<td>ga</td>
<td></td>
</tr>
<tr>
<td>2sg</td>
<td>t</td>
<td></td>
</tr>
<tr>
<td>1pl</td>
<td>vut</td>
<td></td>
</tr>
<tr>
<td>2pl</td>
<td>si</td>
<td></td>
</tr>
</tbody>
</table>
The agreement forms listed below are shown assuming no separate ergative clitic, however a possibly separate ergative clitic that might be separated out from the portmanteau agreement form in the synchronic grammar is shown in parentheses.\(^{27}\)

(60) Transitive forms with first and second person subjects:

<table>
<thead>
<tr>
<th>portmanteau agr</th>
<th>(ergative clitic)</th>
<th>nominative clitic</th>
<th>surface form</th>
</tr>
</thead>
<tbody>
<tr>
<td>1sg-2sg</td>
<td>vakkit</td>
<td>si</td>
<td>vakkit</td>
</tr>
<tr>
<td>1sg-2pl</td>
<td>vas</td>
<td>si</td>
<td>vassi</td>
</tr>
<tr>
<td>1pl-2sg</td>
<td>vatsigit</td>
<td></td>
<td>vatsigit</td>
</tr>
<tr>
<td>1pl-2pl</td>
<td>vas</td>
<td>si</td>
<td>vassi</td>
</tr>
<tr>
<td>2sg-1sg</td>
<td>varma</td>
<td>gut</td>
<td>varma</td>
</tr>
<tr>
<td>2sg-1pl</td>
<td>vatsi</td>
<td></td>
<td>vatsigut</td>
</tr>
<tr>
<td>2pl-1sg</td>
<td>vassi</td>
<td>(si)</td>
<td>vasssinga</td>
</tr>
<tr>
<td>2pl-1pl</td>
<td>vassi</td>
<td>(si)</td>
<td>vassigut</td>
</tr>
<tr>
<td>1sg-3sg</td>
<td>vara</td>
<td></td>
<td>vara</td>
</tr>
<tr>
<td>1sg-3pl</td>
<td>vakka</td>
<td></td>
<td>vakka</td>
</tr>
<tr>
<td>1pl-3sg</td>
<td>varput</td>
<td>(vut)</td>
<td>varput</td>
</tr>
<tr>
<td>1pl-3pl</td>
<td>vavut</td>
<td>(vut)</td>
<td>vavut</td>
</tr>
<tr>
<td>2sg-3sg</td>
<td>vat</td>
<td></td>
<td>vat</td>
</tr>
<tr>
<td>2sg-3pl</td>
<td>vatit</td>
<td>(t)</td>
<td>vatit</td>
</tr>
<tr>
<td>2pl-3sg</td>
<td>varsi</td>
<td>(si)</td>
<td>varsi</td>
</tr>
<tr>
<td>2pl-3pl</td>
<td>vasi</td>
<td>(si)</td>
<td>vasi</td>
</tr>
</tbody>
</table>

Although not overtly stated in the previous work on the language, one has the impression that the authors assume that it must be an all or nothing situation, in that if the synchronic grammar has a separate ergative cross-referencing morpheme in some person combinations, it will have a separate ergative form in every person combination. However, within Optimality Theory, there is no reason to think that a form such as an ergative clitic cannot sometimes be spelled out at PF and sometimes not, depending on what features are spelled out by the portmanteau agreement, and the effect of other constraints.

Given that the exact morphological divisions in the verbal complex in the synchronic grammar of Inuit are still uncertain, it is premature to try to give the constraints and constraint ranking that would determine what morphemes and features are spelled out at PF in Inuit, along with any phonological changes that alter their surface appearance. If past language learners had trouble distinguishing portmanteau forms from adjacent forms with phonological changes at their juncture, it is no surprise that the stage was set for a reanalysis of previously separate forms as portmanteau forms. I hypothesize that such wholesale reanalysis (of the boundary loss type) creating a large set of diverse portmanteau agreement forms would not be possible in a nominative-accusative language; the potential for such reanalysis is present in an ergative language because Infl/T potentially probes both arguments in syntax, collects phi features from

\(^{27}\) Additional ergative clitics might be posited in this data depending on the phonology of the synchronic grammar; for example, the 1sg-3pl form *vakka* might be/have been *var+ga*, undergoing phonological alterations to *vakka*. See Fortescue 1984 for more discussion of possible underlying/historical forms and phonological changes.
both arguments, and potentially spells out features from both arguments. Thus there is an alternate grammar available that the data can be reanalyzed to fit. No such alternate grammatical pattern is available in nominative-accusative languages because Infl/T cannot probe past the nominative to establish a multiple agree relation with the object. Portmanteau agreement in nominative-accusative languages is thus limited to the morphological/PF type, as described above.

3. Conclusion

This paper argues that there are two different answers to the question of how and where portmanteau agreement is formed in the grammar, because there are two rather different types of portmanteau agreement. One type, morphological portmanteau agreement, is formed at PF, combining features from two different nodes in syntax. In this type, a portmanteau agreement morpheme is inserted at PF spelling out not only the phi features from Infl/T, but also features from what would otherwise be an adjacent cross-referencing form also generated in syntax. That adjacent morphological ‘slot’ is then left empty. This type matches Trommer’s 2010 view of how portmanteau agreement is generated; however, the reason for using a portmanteau forms is quite different in the two approaches. In Trommer’s modified Distributed Morphology approach, portmanteau morphemes are listed in the lexicon with attached subcategorization/selection information indicating the context in which they are used. In the Optimality Theory approach proposed here, no lexical selection information is needed. Instead, what determines when this type of portmanteau morpheme is used is the need to obey local (1\textsuperscript{st} and 2\textsuperscript{nd} person) alignment and faithfulness constraints. That is, using a portmanteau agreement morpheme allows a 1\textsuperscript{st} person feature from one argument and a 2\textsuperscript{nd} person feature from another argument to both be spelled out and yet both be perfectly aligned to the same edge. Because constraints do not target third person, this type of portmanteau agreement conforms to the generalization noted by Heath (1991, 1998) that portmanteau morphemes tend to be used for 1\textsuperscript{st}-2\textsuperscript{nd} and 2\textsuperscript{nd}-1\textsuperscript{st} combinations.

The other type of portmanteau agreement, syntactic portmanteau agreement, involves only one node in syntax, not two. In this type, Infl/T establishes a multiple agree relation with an ergative (or dative) subject and a nominative object, and then spells out features from both arguments on a portmanteau agreement morpheme inserted at PF. This type is much like what Georgi 2010 describes, except that Georgi postulates that all portmanteau agreement is generated with one head probing two arguments in syntax, whereas I argue that this syntactic type is restricted to clauses where Infl/T establishes a multiple agree relation with a subject with inherent case (e.g. ergative) and a nominative object. Languages with syntactic portmanteau agreement do not conform to Heath’s generalization; instead they can have many portmanteau forms involving third person, as in Inuit.
References


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