Local person portmanteaux and hierarchy effects:
A unified approach

1 Introduction

Goals of this paper:
(i) to account for the crosslinguistic variation of exponence in local scenarios (1>2, 2>1) with the same syntactic agreement mechanism
(ii) to provide an account of person portmanteaux which solely relies on vocabulary insertion

Definition of Person Portmanteaux:
Person Portmanteaux are unsegmentable morphemes which encode person features of both arguments of a transitive verb simultaneously.

The analysis is based on the following two observations:

Observation I:
Based on a typological survey of Australian and native American languages, Heath (1991; 1998) describes four realization strategies found in the combination of two local person arguments (1>2 and 2>1)

1. portmanteau morpheme: unsegmentable morpheme expressing person features of both arguments simultaneously (‘?’ = /d/ in (2))
2. hierarchy effects: in both combinations (a) the 1st person exponent shows up (1 ≻ 2 ≻ 3) or (b) the 2nd person exponent shows up (2 ≻ 1 ≻ 3) (‘?’ = /a/ or /b/ in (2))
3. zero exponent: no exponent although the language has an overt 1st and 2nd person exponent in other combinations (‘?’ = /Ø/ in (2))
4. cooccurrence of 1st and 2nd person exponent: both the regular 1st and 2nd person exponent is realized (‘?’ = /a/+ /b/ in (2))

1. and 4. are particularly striking in light of the fact that most of the languages Heath has looked at exhibit person hierarchy effects. The abstract pattern of such a language with the marker inventory in (3) is shown in (2). In these languages, there is an asymmetry in the number of arguments cross-referenced on the verb: 1 argument in non-local and 2 arguments in local scenarios.

Marked inventory:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>sub/obj</td>
<td>?</td>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>1</td>
<td>?</td>
<td>a</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>? b</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>a</td>
<td>b</td>
<td>c</td>
</tr>
</tbody>
</table>

1. and 4. are particularly striking in light of the fact that most of the languages Heath has looked at exhibit person hierarchy effects. The abstract pattern of such a language with the marker inventory in (3) is shown in (2). In these languages, there is an asymmetry in the number of arguments cross-referenced on the verb: 1 argument in non-local and 2 arguments in local scenarios.

1. If Agree targets only positive values of a person feature, it follows that both arguments of a transitive verb (and) agree in local scenarios but only a single argument agrees in other scenarios.
2. The variation in local scenarios is a purely morphological phenomenon, it is the result of the specification of local person exponents.
3. The approach includes an analysis of portmanteaux (a) from which it follows why they only occur in local scenarios: portmanteaux are derived inclusive markers, and (b) which only relies on vocabulary insertion and dispenses with additional concepts like e.g. fusion.

Observation II:
Person portmanteaux are particularly prominent in local scenarios (1>2, 2>1), cf. Heath (1991; 1998); Cysouw (2003); Wunderlich (2006); Nevins (2007a); Handschuh (2011). These will be called Local Person Portmanteaux (LPPM) in what follows.

Questions:
- Is there agreement with one or two arguments of a transitive verb, i.e. does deletion of features apply in non-local scenarios or is there exceptional agreement with a second argument in local scenarios?
- How is the crosslinguistic variation in local scenarios accounted for?
- Why are portmanteaux prominent in local person combinations, that means, what differentiates these contexts from others?

Claims:
1. If Agree targets only positive values of a person feature, it follows that both arguments of a transitive verb (can) agree in local scenarios but only a single argument agrees in other scenarios.
2. The variation in local scenarios is a purely morphological phenomenon, it is the result of the specification of local person exponents.
3. The approach includes an analysis of portmanteaux (a) from which it follows why they only occur in local scenarios: portmanteaux are derived inclusive markers, and (b) which only relies on vocabulary insertion and dispenses with additional concepts like e.g. fusion.
2 Portmanteaux in DM

General problem:
In Distributed Morphology [Halle and Marantz 1993; 1994] vocabulary insertion can target only a single terminal node, but person portmanteaux seem to realize features of two terminals.

Solutions proposed in the literature:
(i) spell-out of non-terminals (Starke 2009; Caha 2008; 2009; Radkevich 2009; 2010)
(ii) fusion of terminals (Noyer 1992) - given that the features of both terminals are visible for vocabulary insertion after fusion, as proposed e.g. by Halle and Marantz (1993).

(iii) vocabulary items are context-sensitive for the features on another head (Trommer 2006; 2007)

Problem for (i):
A large subtree must be spelled out, probably TP including other verbal and nominal projections (assumption: only constituents can be spelled out).

Problems for (ii):
The context for fusion must be stipulated (cf. Radkevich 2009).

Problem for (iii):
This mechanism presupposes that vocabulary insertion can inspect the whole tree with all its terminals, it is thus potentially a non-local operation.

Problem for all approaches:
It does not follow why PPMs are prominent in local person contexts.

Proposal:
- The presence of two feature sets on one head is a natural consequence of Agree if two probes on a head target two different goals (cf. the literature on PCC effects, e.g. Anagnostopoulou 2005; Richards 2008; Heck and Richards 2010). This is possible since Agree targets the closest matching goal, which is not necessarily the closest goal in the c-command domain of a probe.
- Vocabulary insertion then targets only a single head which may contain features of two DPs.
- In this way, portmanteaux can be accounted for without the problematic solutions summarized above. The only operation needed is vocabulary insertion.

3 Analysis
3.1 Assumptions

- Person features:
  (5) Decomposition:
  1st excl [+1 -2]  
  2nd [-1 +2]  
  1st incl [+1 +2]  
  3rd [-1 -2]

- two ordered person probes on a single head, T: [uπ: _ > uπ: _ ]

- Agree (cf. Chomsky 2000; 2001) between a probe P and a goal G applies if:
  a. P c-commands G
  b. P has an uninterpretable feature and G has a matching interpretable feature
  c. G is the closest matching goal for P

- Agree is relativized to marked values of a feature (cf. Calabrese 1993; Nevins 2007a; 2010), these are the positive values [+1] and [+2] in (5). This means that only the positive person value of a goal is copied onto T.

- default checking of the probe(s) if the goal does not provide a matching value (if at least one argument is 3rd person)
• Deactivation: A feature on a goal is deactivated after taking part in Agree

• postsyntactic redundancy rule: a well-formed representation of person on a head consists of $[\pm 1, \pm 2]$; default insertion of the unmarked value if a value is missing (before vocabulary insertion)

• postsyntactic realization of features on terminals (DM, Halle and Marantz (1993, 1994)) according to the Subset Principle and Specificity: the vocabulary item with the highest number of matching features is inserted into a terminal node

\[(6) \text{ Example: 1st person } DP_{ext} > 2\text{nd person } DP_{int}\]

\[
\text{TP} \quad \rightarrow \quad \text{vP} \\
\quad \rightarrow \quad \text{v'} \\
\quad \rightarrow \quad \text{v} \\
\quad \rightarrow \quad \text{DP_{int}} \\
\quad \rightarrow \quad \text{vP} \\
\quad \rightarrow \quad \text{v} \\
\quad \rightarrow \quad \text{DP_{ext}} \\
\quad \rightarrow \quad \text{v} \\
\quad \rightarrow \quad \text{TP}
\]

### 3.2 Result

<table>
<thead>
<tr>
<th>scenario</th>
<th>person on DP_{ext}</th>
<th>person on DP_{int}</th>
<th>person on T after Agree</th>
<th>default feature insertion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1excl&gt;2</td>
<td>[+1 -2]</td>
<td>[-1 +2]</td>
<td>[+1 +2]</td>
<td>[+1 +2]</td>
</tr>
<tr>
<td>1excl&gt;3</td>
<td>[+1 -2]</td>
<td>[-1 -2]</td>
<td>[+1 -2]</td>
<td>[+1 -2]</td>
</tr>
<tr>
<td>2&gt;1excl</td>
<td>[-1 +2]</td>
<td>[-1 -2]</td>
<td>[-1 +2]</td>
<td>[-1 +2]</td>
</tr>
<tr>
<td>2&gt;3</td>
<td>[-1 +2]</td>
<td>[-1 -2]</td>
<td>[-1 +2]</td>
<td>[-1 +2]</td>
</tr>
<tr>
<td>1incl&gt;3</td>
<td>[+1 +2]</td>
<td>[-1 -2]</td>
<td>[+1 +2]</td>
<td>[+1 +2]</td>
</tr>
<tr>
<td>3&gt;1excl</td>
<td>[-1 -2]</td>
<td>[+1 -2]</td>
<td>[+1 -2]</td>
<td>[+1 -2]</td>
</tr>
<tr>
<td>3&gt;2</td>
<td>[-1 +2]</td>
<td>[+1 -2]</td>
<td>[+1 +2]</td>
<td>[+1 +2]</td>
</tr>
<tr>
<td>3&gt;1incl</td>
<td>[-1 +2]</td>
<td>[+1 -2]</td>
<td>[+1 +2]</td>
<td>[+1 +2]</td>
</tr>
<tr>
<td>3&gt;3</td>
<td>[-1 +2]</td>
<td>[+1 -2]</td>
<td>[+1 +2]</td>
<td>[+1 +2]</td>
</tr>
</tbody>
</table>

**Consequences:**

- Only 1st and 2nd person arguments can enter Agree: in local scenarios both DPs Agree, in other scenarios at most one DP agrees.
- Hierarchy effects: in scenarios where one argument is 3rd person only the local person argument agrees: $1/2 > 3$
- Local scenarios: A new combination arises that was not present on any of the DPs: $[+1 +2]$; it is thus expected that a VI which is different from the VI for 1st and 2nd person can be inserted - a portmanteau. Portmanteaus are inclusive markers in a derived inclusive context.
- The mechanism derives the fact that portmanteaux are found in local scenarios.

**Prediction:**
The same marker should be found in (some of) the following contexts because their final representation is identical, namely $[+1 +2]$: 1>2, 2>1, 1incl>3, 3>1incl, intransitives where the single argument is 1incl.

**Empirical evidence: ambiguous exponents**

\[\text{Trommer (2006): ambiguous exponents}\]

\[\text{Surinam Carib (Carib, Gildea (1998: 16))}\]:

\[\text{a. Intransitives:}\]

<table>
<thead>
<tr>
<th>scenario</th>
<th>DP_{ext}</th>
<th>DP_{int}</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ø-j</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>m-aj</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>k-it k-</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>n-</td>
<td></td>
</tr>
</tbody>
</table>

\[\text{b. Transitives:}\]

<table>
<thead>
<tr>
<th>scenario</th>
<th>DP_{int}</th>
<th>1</th>
<th>2</th>
<th>12</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>k-</td>
<td>s-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>k-</td>
<td>m-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>k-aj k-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>j-aj k- n-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$\leftrightarrow k$ is an ambiguous exponent
• Other Catib languages that exhibit ambiguous exponents: Tiriyó (Meira 1999), Wayana (Tavares 2005), Ikpeng (Pacheco 2001)

• This pattern is also found in languages outside of Carib: e.g. in the Kiranti language Belhare (Bickel 2003), in the Australian languages Jawony, Nunggubuyu, Anindilyakwa and Alawa (Heath 1991), and in the Algonquian language Blackfoot (Uhlenbeck 1938; Taylor 1968; Frantz 1991).

(8) Blackfoot (Algonquian):

a. animate intransitive, independent order, sikstaki “to bite”

<table>
<thead>
<tr>
<th>Case</th>
<th>1sg</th>
<th>1pl excl</th>
<th>1pl incl</th>
<th>2sg</th>
<th>2pl</th>
<th>3sg</th>
<th>3pl</th>
</tr>
</thead>
<tbody>
<tr>
<td>/a/</td>
<td>nit-sikstaki</td>
<td></td>
<td></td>
<td>sikstaki-o-hp</td>
<td>kit-sikstaki-hp</td>
<td>sikstaki-wa</td>
<td>sikstaki-yi</td>
</tr>
<tr>
<td>/b/</td>
<td>kit-sikstaki-hp-innaan</td>
<td></td>
<td></td>
<td>kit-sikstaki-o-aa</td>
<td>kit-sikstaki-oki</td>
<td></td>
<td></td>
</tr>
<tr>
<td>/c/</td>
<td></td>
<td></td>
<td></td>
<td>sikstaki-o-aa</td>
<td>kit-sikstaki-oki</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. animate transitive, independent order, siksip “to bite” (extract)

<table>
<thead>
<tr>
<th>Case</th>
<th>1sg</th>
<th>1pl excl</th>
<th>2sg</th>
<th>2pl</th>
</tr>
</thead>
<tbody>
<tr>
<td>/a/</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/b/</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>/c/</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$\Rightarrow o$ is an ambiguous exponent: it occurs in the intransitive paradigm in the 1st inclusive and solely in the local scenarios (1>2 and 2>1) in (8-b).

NOTE: For an account of languages like Blackfoot where the ambiguous exponent occurs only in a subpart of the combinations where Surinam Carib has the same exponent see the Appendix.

Basic idea: The case of an argument is copied under person Agree as well. Vocabulary items are sensitive to case features.

4 Deriving the cross-linguistic variation in local scenarios

4.1 Languages without transitive inclusive markers

Let /a/ be the exponent for 1st person and /b/ the exponent for 2nd person then the cross-linguistic variation in local scenarios arises as a consequence of the (under)specification of these vocabulary items:

1. portmanteaux:

   (9) Portmanteau morpheme /d/:
   a. /a/ ↔ [+1 –2]
   b. /b/ ↔ [–1 +2]
   c. /d/ ↔ [+1 +2]

   ⇒ /d/ is the most specific marker in local scenarios (1>2, 2>1) represented by [+1 +2]; in e.g. 1>3 or 2>3 /d/ is not a subset of the features of the terminal [+1 –2] or [–1 +2], hence only /a/ or /b/ can be realized

2. hierarchy effects:

   (10) 1 ≻ 2 ≻ 3 (/a/ is underspecified):
   a. /a/ ↔ [+1]
   b. /b/ ↔ [–1 +2]

   ⇒ only the 1st person marker /a/ fits in the local scenarios (1>2, 2>1) represented by [+1 +2]

   (11) 2 ≻ 1 ≻ 3 (/b/ is underspecified):
   a. /a/ ↔ [+1 –2]
   b. /b/ ↔ [+2]

   ⇒ only the 2nd person marker /b/ fits in the local scenarios (1>2, 2>1) represented by [+1 +2]
Proclitics in the intransitive animate paradigm, independent order, dagoshin ‘to arrive’:

<table>
<thead>
<tr>
<th>1sg</th>
<th>1pl excl</th>
<th>1pl incl</th>
<th>2sg</th>
<th>2pl</th>
</tr>
</thead>
<tbody>
<tr>
<td>n-dagoshin</td>
<td>n-dagoshin-min</td>
<td>g-dagoshin-min</td>
<td>g-dagoshin</td>
<td>g-dagoshin-m</td>
</tr>
<tr>
<td>g-dagoshin</td>
<td>g-dagoshin</td>
<td>3sg</td>
<td>3pl</td>
<td></td>
</tr>
<tr>
<td>dagoshin</td>
<td>dagoshin-w-ag</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Person proclitics:

a. /n/ ↔ [+1 –2]
b. /g/ ↔ [+2]
c. /Ø/ ↔ [–1 –2]

Given the representation of person in (5), the 2nd person exponent /g/ must be underspecified and the 1st person exponent /n/ must be fully specified in order to account for the fact that /g/ is used in 1incl, represented as [+1 +2], but /n/ is not.

Proclitics in the transitive animate paradigm, independent order, miiN ‘to give’:

<table>
<thead>
<tr>
<th>A O</th>
<th>1sg</th>
<th>1pl excl</th>
<th>1pl incl</th>
<th>2sg</th>
<th>2pl</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>g-miiN</td>
<td>g-miiN</td>
<td>g-miiN</td>
<td>g-miiN</td>
<td>g-miiN</td>
</tr>
<tr>
<td>1sg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1pl excl</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1pl incl</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2sg</td>
<td>g-miiN</td>
<td>g-miiN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2pl</td>
<td>g-miiN</td>
<td>g-miiN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3sg</td>
<td>n-miiN</td>
<td>n-miiN</td>
<td>g-miiN</td>
<td>g-miiN</td>
<td>g-miiN</td>
</tr>
<tr>
<td>3pl</td>
<td>n-miiN</td>
<td>n-miiN</td>
<td>g-miiN</td>
<td>g-miiN</td>
<td>g-miiN</td>
</tr>
</tbody>
</table>

In the transitive paradigm the less specific 2nd person marker shows up in the local scenarios 1>2 and 2>1. No hierarchy is necessary to determine which VI is chosen.

3. cooccurrence of 1st and 2nd person exponent

(15) /a/ and /b/ are both underspecified:

a. /a/ ↔ [+1]
b. /b/ ↔ [+2]

⇒ Both /a/ and /b/ are a subset of the feature set [+1 +2] on T in local scenarios, hence both vocabulary items are inserted.

Yavapai [Kendall 1976], see also Diegueño [Langdon 1970]

4. zero exponent

(17) /a/ and /b/ are fully specified:

a. /a/ ↔ [+1 –2]
b. /b/ ↔ [+1 +2]

⇒ Neither /a/ nor /b/ is a subset of the feature set [+1 +2] on T in local scenarios, hence no vocabulary item is inserted.

Kunwinyku [Evans 2003: 399ff] seems to be a language that exhibits this pattern, in the scenario 1>2 there is no overt morpheme although there are overt 1st and 2nd person markers in the intransitive paradigm.

Note that in the transitive paradigm the augmented forms from the intransitive paradigm are used if the object is local person, although both arguments are minimal. For an account of such patterns where the combination of singular arguments results in plural exponents see [Trommer 2006]. This approach presupposes that number features are copied under Agree as well, but this complication in Kunwinyku morphology does not affect my main point of person marking in local scenarios.

Person X outranks person Y on a hierarchy because the vocabulary item for X is less specific than the vocabulary item for Y.
Intransitives:

<table>
<thead>
<tr>
<th></th>
<th>minimal</th>
<th>augmented</th>
</tr>
</thead>
<tbody>
<tr>
<td>1excl</td>
<td>nga-</td>
<td>ngani-</td>
</tr>
<tr>
<td>1incl</td>
<td>ngarr-</td>
<td>kane-</td>
</tr>
<tr>
<td>2</td>
<td>yi-</td>
<td>ngune-</td>
</tr>
<tr>
<td>3</td>
<td>ka- (non-past)</td>
<td>kabene-</td>
</tr>
<tr>
<td>Ø (past)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Transitives, minimal

<table>
<thead>
<tr>
<th>DP_{ext}</th>
<th>DP_{int}</th>
<th>1min</th>
<th>2min</th>
<th>3min</th>
</tr>
</thead>
<tbody>
<tr>
<td>1excl min</td>
<td>Ø</td>
<td>nga-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1incl min</td>
<td></td>
<td></td>
<td>ngarr-</td>
<td></td>
</tr>
<tr>
<td>2min</td>
<td>kan-</td>
<td></td>
<td>yi-</td>
<td></td>
</tr>
<tr>
<td>3min</td>
<td>ngan-</td>
<td>ngun-</td>
<td>ka- / Ø-</td>
<td></td>
</tr>
</tbody>
</table>

However, in this case the zero morpheme is better analysed as an instantiation of a zero portmanteau. The reason is that in 2>1 and [12] (intransitive 1incl) the same marker kan(e) occurs. To resolve this syncretism, kan(e) must be underspecified for case, i.e. it is the default inclusive marker. To block it from occurring in 1>2, the zero morpheme must be more specific, it must be be sensitive for case. Thus, the zero morpheme is not the result of the fact that the fully specified 1st and 2nd person exponents cannot be inserted into the terminal with [+1 +2] specification, because then kan(e) should be realized in 1>2.

Other data that Heath (1991) and Evans (2003) provide are of the same type, a clear example for zero morphemes that arise as a consequence of incompatible local person exponents is still to be found, but the analysis predicts its existence.

4.2 Languages with LPPMs but without hierarchy effects

Background:
The analysis is designed to derive the connection between LPPMs and hierarchy effects, i.e. the fact that in local scenarios two arguments are encoded in the exponent whereas in all other scenarios only a single argument is cross-referenced (a hierarchy effect). The Agree mechanism proposed in section 3.1 derives this asymmetry.

However, there are also a number of languages which do not exhibit hierarchy effects but still show LPPMs.

Lakhota (Siouan, Buechel 1939)

(20) Intransitives:

<table>
<thead>
<tr>
<th></th>
<th>DP_{ext}</th>
<th>DP_{int}</th>
</tr>
</thead>
<tbody>
<tr>
<td>1sg</td>
<td>wa-</td>
<td>ma-</td>
</tr>
<tr>
<td>1pl</td>
<td>uŋ(k)-</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>ya- ni-</td>
<td></td>
</tr>
<tr>
<td>3sg</td>
<td>Ø-</td>
<td>wica-</td>
</tr>
<tr>
<td>3pl</td>
<td></td>
<td></td>
</tr>
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(21) Transitives:

<table>
<thead>
<tr>
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<th>1pl</th>
<th>2</th>
<th>3pl</th>
</tr>
</thead>
<tbody>
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<td>1sg</td>
<td></td>
<td>ci-</td>
<td>wica-wa-</td>
<td></td>
</tr>
<tr>
<td>1pl</td>
<td>ma-ya</td>
<td>uŋ-ya</td>
<td>wica-uŋ</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>ma-ya</td>
<td>uŋ-ya</td>
<td>wica-ya</td>
<td></td>
</tr>
</tbody>
</table>

Question:
How can the analysis account for such languages?

Answer:

(i) Hierarchy effect in non-local scenarios: Language variation is due to the relativization of the probe. In languages with hierarchy effects it only targets the positive values of a probe, in languages where both arguments of a transitive verb are cross-referenced, the probe is not restricted to positive values, it can copy all features of a goal, positive and negative values. This accounts for the absence of hierarchy effects in non-local scenarios.
(ii) Local scenarios: Since the choice of an exponent only depends on the specification of vocabulary items, the realization of a portmanteau is derived exactly as before: The 1st and 2nd person marker must be underspecified otherwise they would have the same specificity as the portmanteaux marker and a hierarchy would be needed to determine which marker is inserted.

Analysis of Lakhota:

- full Agree in $\pm\alpha$ with both arguments; e.g. in local scenarios: $T_{+1-2}\;[-1\;+2]$
- /ci/ $\leftrightarrow [+1\;+2]$
- /wa, ma, unk/ $\leftrightarrow [+1]$
- /ya, ni/ $\leftrightarrow [+2]$

5 Conclusion

- The cross-linguistic variation of person exponece in local scenarios is a morphological phenomenon, the exponent is determined by the specificity of local person exponents. The underlying Agree mechanism is identical in these languages.
- If Agree is relativized to target only positive person values of a goal the asymmetry in the number of arguments encoded in an exponent follows:
  (i) non-local scenarios (at least one argument is 3rd person): only one argument can Agree, namely the one with a local person feature $\Rightarrow$ hierarchy effects arise
  (ii) local scenarios: Both arguments can Agree with the probe given that each has positive person values. $\Rightarrow$ portmanteaux may arise
- It follows from the relativized Agree operation why person portmanteaux arise in local scenarios: it is only in these contexts that two different arguments can value the probes on T and that as a result a feature representation arises on T which was not present on any of the DPs that took part in Agree.
- Portmanteaux are analyzed as inclusive markers which realize the features $[+1\;+2]$.

Either this context arises on T because a single DP carries these features (if the argument targeted by Agree is 1st person inclusive) or the combination is derived by the proposed Agree mechanism if one argument is 1st and the other 2nd person (derived inclusive context).

- This analysis is supported by the existence of ambiguous exponents, in particular if the single 1st person inclusive argument of an intransitive verb is encoded by the same marker as the combinations 1>2 and/or 2>1 in transitive contexts.

Appendix

In some languages, ambiguous exponents do not show up in all contexts where $[+1\;+2]$ arises on T after Agree (as in Surinam Carib), but only in a subset:

Ikpeng: the same exponent for 2>1 and [12] (1incl argument of an intransitive verb), but a different exponent for 1>2
Tiriyó: 1>2, 2>1 and [12] are each marked by a different exponent
De’kwana: 1>2 and 2>1 are encoded identically, but [12] is different

Factors that play a role:
(i) Is the probe valued by DP$_{ext}$ or DP$_{int}$?
(ii) Is the inclusive representation $[+1\;+2]$ present underlyingly or is it derived, i.e. the result of Agree in a transitive context with two local person arguments?

Proposal:

- The relevant factors can be differentiated by the case a DP bears.
- Case is assigned to the arguments within vP \cite{Sigurðsson2000}, i.e. it is separated from Agree initiated by T
- Every person probe on T is associated with a case probe:

\begin{equation}
T \left[\begin{array}{c}
  u\pi : \_
  \hline
  u\text{Case}: \_
\end{array}\right] \Rightarrow \left[\begin{array}{c}
  u\pi : \_
  \hline
  u\text{Case}: \_
\end{array}\right]
\end{equation}
• The case probe is valued with the case value of the argument which the corresponding \pi-probe agrees with (for Agree in Case cf. Rackowski (2002); Richards (2011); Hamann (2011)).

• The result for a language like Surinam Carib with active alignment is shown in (23).

(23) Results (ergative active system as in Surinam Carib):

<table>
<thead>
<tr>
<th>combination</th>
<th>features on T</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&gt;2</td>
<td>[+1 Erg] [+2 Abs]</td>
</tr>
<tr>
<td>1&gt;3</td>
<td>[+1 Erg]</td>
</tr>
<tr>
<td>2&gt;1</td>
<td>[+2 Erg] [+1 Abs]</td>
</tr>
<tr>
<td>2&gt;3</td>
<td>[+2 Erg]</td>
</tr>
<tr>
<td>1incl&gt;3</td>
<td>[+1 Erg] [+2 Erg]</td>
</tr>
<tr>
<td>3&gt;1</td>
<td>[+1 Abs]</td>
</tr>
<tr>
<td>3&gt;1incl</td>
<td>[+1 Abs] [+2 Abs]</td>
</tr>
<tr>
<td>3&gt;2</td>
<td>[+2 Abs]</td>
</tr>
<tr>
<td>3&gt;3</td>
<td></td>
</tr>
<tr>
<td>1ext</td>
<td>[+1 Erg]</td>
</tr>
<tr>
<td>1incl_ext</td>
<td>[+1 Erg] [+2 Abs]</td>
</tr>
<tr>
<td>2ext</td>
<td>[+2 Erg]</td>
</tr>
<tr>
<td>3ext</td>
<td></td>
</tr>
<tr>
<td>1int</td>
<td>[+1 Abs]</td>
</tr>
<tr>
<td>1incl_int</td>
<td>[+1 Abs] [+2 Abs]</td>
</tr>
<tr>
<td>2int</td>
<td>[+2 Abs]</td>
</tr>
<tr>
<td>3int</td>
<td></td>
</tr>
</tbody>
</table>

• VIs can be specified for person and Case.

• Syncretism is resolved by underspecification for Case. In Ikpeng and De’kwana (Carib), for example, there is a default inclusive marker /X/ and another inclusive marker /Y/ specified for case in addition to person (Carib exhibits active alignment, cf. Surinam Carib). In Ikpeng /Y/ blocks /X/ in the scenario 1>2. In De’kwana /Y/ block /X/ in [12], the 1st person inclusive of an intransitive.

\[
\text{(24) Inclusive markers in Ikpeng:} \\
\begin{align*}
\text{a. } & \text{/X/ } \leftrightarrow [+1 +2] \\
\text{b. } & \text{/Y/ } \leftrightarrow \{ [+1 \text{ Erg}] [+2 \text{ Abs}] \}
\end{align*}
\]

\[
\text{(25) Inclusive markers in De’kwana:} \\
\begin{align*}
\text{a. } & \text{/X/ } \leftrightarrow [+1 +2] \\
\text{b. } & \text{/Y/ } \leftrightarrow \{ [+1 \text{ Erg}] [+2 \text{ Erg}] \}
\end{align*}
\]

• potential problem: 1>2 vs. 2>1 have the same representation on T: T [+1 +2 Erg, Abs]

• This could be solved if the features on T and vocabulary items are structured (a discrete set for the person and case feature of each goal)

\[
\text{(26) /X/ is the VI for 1>2, /Y/ is the VI for 2>1:} \\
\begin{align*}
\text{a. } & \text{/X/ } \leftrightarrow \{ [+1 \text{ Erg}] [+2 \text{ Abs}] \} \\
\text{b. } & \text{/Y/ } \leftrightarrow \{ [+2 \text{ Erg}] [+2 \text{ Abs}] \}
\end{align*}
\]

This representation is needed in Tiriyó where 1>2, 2>1 and [12] are expressed by different inclusive markers.

\[
\text{(27) Inclusive markers in Tiriyó:} \\
\begin{align*}
\text{a. } & \text{/X/ } \leftrightarrow [+1 +2] \\
\text{b. } & \text{/Y/ } \leftrightarrow \{ [+1 \text{ Erg}] [+2 \text{ Abs}] \} \\
\text{c. } & \text{/Z/ } \leftrightarrow \{ [+1 \text{ Abs}] [+2 \text{ Erg}] \}
\end{align*}
\]
References


Nevins, Andrew (2010): Multiple Agree with Clitics: Person Complementarity vs. Omnivorous Number. Ms., UCL.


This research was carried out in the projects (i) [The internal Structure of Person Portmanteaus](#) as part of the DFG research group [742 Grammar and Processing of Verbal Arguments](#) and (ii) [Local modeling of non-local dependencies in syntax](#) at the University of Leipzig.