Local person portmanteaux and hierarchy effects: A unified approach

1 Introduction

Goals of this paper:

(i) to account for the cross-linguistic variation of exponence in local scenarios (1>2, 2>1) with the same syntactic agreement mechanism

(ii) to derive the asymmetry in the number of arguments encoded on the verb that arises in some languages with hierarchy effects

(iii) to provide an account of person portmanteaux which solely relies on vocabulary insertion

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

Claims wrt. Agree:

(i) The asymmetry in the number of arguments a verb cross-references is derived if Agree targets only positive values of a feature on a goal.

(ii) The cross-linguistic variation in local scenarios is a purely morphological phenomenon that results from the specificity of local person exponents and the specification of features on T after Agree.

Outline:

1. Generalizations about the encoding of local person combinations
2. Portmanteaux in DM
3. Analysis (deriving the asymmetry and portmanteaux)
4. Deriving the cross-linguistic variation in local scenarios

2 Generalizations

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, ‘?’ in (2))

1. portmanteau morpheme: unsegmentable morpheme expressing person features of both arguments simultaneously (‘?’ = /d/ in (2))

2. zero exponence: no exponent although the language has an overt 1st and 2nd person exponent in other combinations; this might also be an instance of a zero portmanteau (‘?’ = /Ø/ in (2))

3. hierarchy effects: in both combinations we find either only (a) the 1st person exponent (1 > 2 > 3) or (‘?’ = /a/ in (2))
   (b) the 2nd person exponent (2 > 1 > 3) (‘?’ = /b/ in (2))

4. cooccurrence of 1st and 2nd person exponent: both the regular 1st and 2nd person exponent is realized (‘?’ = /a+/b/ in (2))

Strategies 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: one argument is cross-referenced in non-local scenarios and two arguments are cross-referenced in local scenarios.

Observation II:
Person portmanteaux are particularly prominent in local scenarios (1>2, 2>1), cf. Heath (1991; 1998); Cysouw (2003); Wunderlich (2006); Nevins (2007d); 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 cross-linguistic 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 (because at least one argument is 3rd person the representation of which does not include positive person values).

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 inclusive markers in a derived inclusive context, and (b) which only relies on vocabulary insertion and dispenses with additional concepts like e.g. fusion.

3 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 (Stark 2009; Caha 2008; 2009; Radkevich 2009; 2010)

(ii) fusion of terminals (Novet 1992) - given that the features of both terminals are visible for vocabulary insertion after fusion, as proposed e.g. by Halle and Marantz (1993).

\[
\text{(4) } T [A], v [B] \xrightarrow{\text{fusion}} v+T [[A], [B]] /X/ \leftrightarrow [A, B]
\]

(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.
4 Analysis

4.1 Assumptions

- Person features:

  (5) \[\text{Decomposition:}\]
  
  \begin{align*}
  1^\text{st excl} &: [+1 \ -2] \\
  2^\text{nd} &: [-1 \ +2] \\
  1^\text{st incl} &: [+1 \ +2] \\
  3^\text{rd} &: [-1 \ -2] 
  \end{align*}

- Two ordered person probes on a single head, T: \[u_\pi: \_ \succ u_\pi: \_]\]

- 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 (cf. Calabrese 1993; Nevins 2007b; 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, i.e. it cannot be a goal for another Agree operation.

- 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).
  Example: (a) syntax: T \([+1]\) \(\Rightarrow\) (b) morphology: T \([+1 \ -2]\)

- 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

4.2 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]</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>[+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]</td>
<td>[+1 \ -2]</td>
</tr>
<tr>
<td>3 &gt; 2</td>
<td>[-1 \ -2]</td>
<td>[+2 \ -1]</td>
<td>[+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>[ ]</td>
<td>[-1 \ -2]</td>
</tr>
</tbody>
</table>

Consequences:

- Asymmetry in the number of arguments: Only local person arguments can enter Agree (they have positive person values): 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: \(1/2 \succ 3\) is derived
- Portmanteaux: Only in the local scenarios a new combination arises that was not present on any of the DPs: \([+1 \ +2]\) - a derived inclusive context; it is thus expected that a VI which is different from the VI for 1st and 2nd person can be inserted, a portmanteau (=incl. marker).
- LPPM: It follows that portmanteaux are found in local scenarios.
**Prediction 1:**
The same marker should be found in (some of) the following contexts because their final representation is identical, namely $[+1 +2]$: $1 > 2$, $2 > 1$, $1\text{incl} > 3$, $3 > 1\text{incl}$, intransitives where the single argument is 1st inclusive.

**Empirical evidence:** ambiguous exponents

Trommer (2006): ambiguous exponents are markers which seem to be a portmanteau in some contexts, but a simplex marker elsewhere, e.g. a marker /a/ is used for $1 > 2$ and for $[1 \text{incl}]$ argument of an intransitive.

(8) **Surinam Carib** (Carib, Gilded (1998:16)):

a. **Intransitives:**

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

$\leftarrow k$ is an ambiguous exponent. It is used in all combinations that are represented by $[+1 +2]$ in the present approach.

(9) **Wayana** (Tavares 2003: 206-7):

a. **Intransitive paradigm:**

<table>
<thead>
<tr>
<th>DP_{ext}</th>
<th>DP_{int}</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>w- i- j-</td>
</tr>
<tr>
<td>lincl</td>
<td>h-, k-, ku- h-, k-, ku</td>
</tr>
<tr>
<td>2</td>
<td>m- ê-, ëw</td>
</tr>
<tr>
<td>3</td>
<td>n-, mën-, kun-</td>
</tr>
</tbody>
</table>

b. **Transitive, local scenarios:**

1$>2$ k-, ku-
2$>1$ k-, ku-

$\leftarrow k / ku$ is an ambiguous exponent.

Other Carib languages that exhibit ambiguous exponents: Tiriyó (Meira 1999), Ikpeng (Pacheco 2001), De’kwana (Hall 1988).

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 (Frantz 1991).

**Prediction 2:**

Since T agrees with both arguments of a transitive verb and T is defective in embedded infinitives, not even the internal argument of the infinite verb should be cross-referenced on the infinitival verb.

This prediction is borne out in De’kwana.

(10) a. ad-awo-a

2-swell-PRES

‘You swell’ [Hall (1988: 154)]

b. n-awo-a

3-swell-PRES

‘You swell’ [Hall (1988: 154)]

c. motto ti’kac-di kin-anant-a’-to yawa worms dig-INF 3-begin-TAM-PL VERIF ‘They began to dig worms’ [Hall (1988: 341)]

(11) **Person prefixes in De’kwana** (Hall 1988: 151):

<table>
<thead>
<tr>
<th>DP_{ext}</th>
<th>DP_{int}</th>
</tr>
</thead>
<tbody>
<tr>
<td>1sg</td>
<td>w- Ø (y-)</td>
</tr>
<tr>
<td>2</td>
<td>m- s-</td>
</tr>
<tr>
<td>1incl</td>
<td>k- (k1)-</td>
</tr>
<tr>
<td>1excl</td>
<td>nña: n- nña: Ø-</td>
</tr>
<tr>
<td>2</td>
<td>m- s(d)-</td>
</tr>
<tr>
<td>3</td>
<td>n- k(k1)n (past)</td>
</tr>
</tbody>
</table>

Local scenarios:

1$>2$ man-
2$>1$ ko-
1excl$>2$ nña:man-
2$>1$excl nña:ko-

$^2$For an account of languages like De’kwana, Ikpeng and Tiriyó where the ambiguous exponent occurs only in a subpart of the combinations where Surinam Carib has the same exponent see the Appendix. Basic idea: If person Agree takes place, the probe also copies the case value of the goal. In this way, it is possible to distinguish which argument the person value comes from. Vocabulary items realizing person features are then sensitive to case features. Inclusive markers underspecified for case are the default markers that can be inserted in every context represented by $[+1 +2]$ on T. Inclusive markers with case specifications are more specific and block the default inclusive marker in some contexts.
5 Deriving the cross-linguistic variation in local scenarios

Recall: In local scenarios, the features on T after Agree are [+1 +2], a derived inclusive context.

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

1. **portmanteaux**:

   (13) Portmanteau morpheme /d/: both /a/ and /b/ can be fully specified or underspecified
   
   a. /a/ ← [+1 (–2)]
   b. /b/ ← [–1 +2]
   c. /d/ ← [+1 +2]

   ⇒ If /a/ and/or /b/ are underspecified ([+1] and [+2], respectively), /d/ is the most specific marker in local scenarios (1>2, 2>1) and blocks /a/ and /b/. If /a/ and/or /b/ are fully specified, /d/ is the only exponent that has a subset of the features on T [+1 +2]. In non-local scenarios, where one argument is local person and the other one is 3rd person, only /a/ or /b/ can be inserted, /d/ is not a subset of [+1 –2] and [+1 +2], respectively.

2. **zero exponentence**

   (14) /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.

**Ambiguity**: The zero morpheme could also be a portmanteau morpheme without phonological content. In that case, the markers are specified as in (13), the only difference is that /d/ is zero. The following example form Kunwinyku seem to be a zero portmanteau.

Kunwinyku (Evans 2003: 399ff): In the local scenario 1>2 there is no overt morpheme although there are overt 1st and 2nd person markers in the intransitive paradigm.

(15) **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>kaben-bene-</td>
</tr>
<tr>
<td>Ø (past)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(16) **Transitives, minimal**

<table>
<thead>
<tr>
<th></th>
<th>DP&lt;sub&gt;ext&lt;/sub&gt;</th>
<th>DP&lt;sub&gt;int&lt;/sub&gt;</th>
<th>1min</th>
<th>2min</th>
<th>3min</th>
</tr>
</thead>
<tbody>
<tr>
<td>1excl</td>
<td></td>
<td>Ø</td>
<td>nga-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1incl</td>
<td></td>
<td>Ø</td>
<td>ngarr-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Ø</td>
<td>yi-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Ø</td>
<td>ngun-</td>
<td>ka-/Ø-</td>
<td></td>
</tr>
</tbody>
</table>

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.

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 fully specified local person exponents is still to be found, but the analysis predicts its existence.

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 two singular arguments results in plural exponent see Trommel (2006). This approach presupposes that number features are copied under Agree as well, but this complication in Kunwinyku morphology does not affect the main point of person marking in local scenarios argued for in this paper.
3. hierarchy effects:

(17) $1 \succ 2 \succ 3$  
\[ /a/ \leftrightarrow [+1] \]
\[ /b/ \leftrightarrow [-1 +2] \]

$\Rightarrow$ Only the 1st person exponent /a/ is compatible with the local scenarios $(1 \succ 2, 2 \succ 1)$ represented as $[+1 +2]$ on T.

(18) $2 \succ 1 \succ 3$  
\[ /a/ \leftrightarrow [+1 -2] \]
\[ /b/ \leftrightarrow [+2] \]

$\Rightarrow$ Only the 2nd person exponent /b/ is a subset of $[+1 +2]$ on T in the local scenarios and hence, /b/ shows up in both $1 \succ 2$ and $2 \succ 1$.

Evidence for the claim that the local person VI realized in local scenarios is less specific than the other local person VI comes e.g. from Nishnabemwin: $2 \succ 1 \succ 3$ (Valentine 2001: 269-274)

(19) Proclitics in the intransitive animate paradigm, independent order, dagoshin 'to arrive':

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

(20) Person proclitics:

a. /n/ $\leftrightarrow [+1 -2]$

b. /g/ $\leftrightarrow [+2]$

c. /Ø/ $\leftrightarrow [-1 -2]$

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

4. cooccurrence of 1st and 2nd person exponent

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

a. /a/ $\leftrightarrow [+1]$

b. /b/ $\leftrightarrow [+2]$

$\Rightarrow$ Both /a/ and /b/ are a subset of the feature set $[+1 +2]$ on T in local scenarios, hence both vocabulary items are inserted (given the definition of Fission in Noyer (1992)).

Yavapai Kendall (1976), see also Diegueño Langdon (1970)

(23) Intransitive and transitive paradigm of person prefixes:

<table>
<thead>
<tr>
<th>DP_ext</th>
<th>DP_int</th>
<th>intr.</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>?-/Ø-</td>
<td></td>
<td>nØ-</td>
<td>/Ø-</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>m-</td>
<td>?-nØ-m-</td>
<td>m-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Ø-</td>
<td>nØ-</td>
<td>m-</td>
<td>Ø-</td>
<td></td>
</tr>
</tbody>
</table>
Summary:
All variation in local scenarios is located in the lexicon, i.e. in the specification of exponents. The 1st and 2nd person exponent can both be underspecified, fully specified or only one of them is underspecified. These logical possibilities result in four different realization strategies, given the Agree mechanism proposed in section 4.1.

5.1 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 4.1 derives this asymmetry.

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

Lakota (Siouan, Buechel 1939)

(24) 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>un(k)-</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>ya-</td>
<td>ni-</td>
</tr>
<tr>
<td>3sg</td>
<td></td>
<td>O-</td>
</tr>
<tr>
<td>3pl</td>
<td></td>
<td>wica-</td>
</tr>
</tbody>
</table>

(25) Transitives:

<table>
<thead>
<tr>
<th></th>
<th>1sg</th>
<th>1pl</th>
<th>2</th>
<th>3pl</th>
</tr>
</thead>
<tbody>
<tr>
<td>1sg</td>
<td></td>
<td>ci-</td>
<td>wica-wi-</td>
<td></td>
</tr>
<tr>
<td>1pl</td>
<td>unj-ni-</td>
<td>wica-unj</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>ma-ya</td>
<td>unj-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 Lakota:

• full Agree in ±α with both arguments;
  e.g. in local scenarios: T \{ [+1 –2] [+1 +2] \}
  /ci/ ↔ [+1 +2]
  /wa, ma, unk/ ↔ [+1]
  /ya, ni/ ↔ [+2]

6 Conclusion

• 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 ⇒ hierarchy effects arise
  (ii) local scenarios: Both arguments can Agree with the probe given that each has positive person values. ⇒ 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. The cross-linguistic variation of person exponence 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.

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 underlingly 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 early, i.e. within vP (Sigurðsson 2000). It is thus separated from Agree initiated by T.
- Every person probe on T is associated with a case probe:

\[
T \left[ \begin{array}{c}
\uCase : \\
\uA : \\
\end{array} \right] \Rightarrow \left[ \begin{array}{c}
\uCase : \\
\uA : \\
\end{array} \right]
\]

The case probe is valued with the case value of the argument which the corresponding π-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 (27).

**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 Erg]</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.
Inclusive markers in Ikpeng:

a. /X/ ↔ [+1 +2]
b. /Y/ ↔ { [+1 Erg] [+2 Abs] }

Inclusive markers in De’kwana:

a. /X/ ↔ [+1 +2]
b. /Y/ ↔ { [+1 Erg] [+2 Erg] }

• 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)

/X/ is the VI for 1>2, /Y/ is the VI for 2>1:

a. /X/ ↔ { [+1 Erg] [+2 Abs] }
b. /Y/ ↔ { [+2 Erg] [+2 Abs] }

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

Inclusive markers in Tiriyó:

a. /X/ ↔ [+1 +2]
b. /Y/ ↔ { [+1 Erg] [+2 Abs] }
c. /Z/ ↔ { [+1 Abs] [+2 Erg] }

References


Hamann, Jakob (2011): Argument Encoding in Direction Systems and Specificity-
Driven Agree. Ms., University of Leipzig.


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.