Person, Number, and the Architecture of Grammar

PART TWO: The geometry of $\varphi$-features

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Lessons from phonology

Privative vs. multivalent features

- Let's start with phonology
  - and not for nothing: the ideas we're about to discuss originated in phonological theory

- OBSERVATION: While there are phonological processes that target only labial segments —
  - (and there are phonological processes that don't care about labiality)
  - there are no phonological processes that apply exclusively to non-labial segments.

  ➢ This is unexpected on a model where there's a feature [±labial]
    - since a rule could specify either [+labial] or [−labial] in its description

Privative vs. multivalent features

⇒ SOLUTION: assume that [labial] is a privative feature —
  - there's no such thing as [+labial] and [−labial];
  - only [labial] or absence thereof (∅)

- If we add the assumption that a rule cannot refer to the absence of a feature —
  - we get the correct typology: rules can either apply only to labials, or not care about labiality at all;
  - but there is no way for them to apply exclusively to non-labials.

Feature geometries

Alas, where one problem dissolves, another reveals itself . . .

- In this case: how can we model place assimilation in this kind of system?
  - assimilation of one labial to another labial is easy to model
    - as spreading of the [labial] feature
  - but what does (generalized) place assimilation amount to, in this system?
    - e.g. en-able vs. em-power (vs. en-close)
    - as it stands, all we would have is a collection of separate, disparate privative place features
      - e.g. [labial], [coronal], [dorsal]
  ⇒ what does it mean, in featural terms, for a [coronal] segment to undergo assimilation and become [labial]?
Feature geometries

⇒ SOLUTION: Features are organized in a hierarchy

- for example, [labial], [coronal], [dorsal] are all child nodes of a parent node named [PLACE]

(1)

- A particular segment will only have **one** child node under [PLACE] (unless there is co-articulation...)
- corresponding to its actual place-of-articulation

Feature geometries

⇒ So, for example, [n] and [p] will be represented as in (2):

(2)  

- Now, place-assimilation consists of simply overwriting one segment’s [PLACE] node with another’s (**en-able** → **em-power**)

Feature geometries

- A structure like (1), repeated below, is called a **feature geometry**:

(1)
And now back to $\varphi$-features...

Harley & Ritter (2002)

- Okay, after this brief excursion into phonology, let us fast-forward ~15 years
  - and return to our domain of interest, $\varphi$-features

- Harley & Ritter (2002), taking their explicit inspiration from the phonological work cited earlier, propose:
  - $\varphi$-features are also organized in a feature geometry

- They propose this for the representation of $\varphi$-features in the morphology
  - and they motivate their proposal on (mostly) morphological grounds

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Harley & Ritter (2002)

- The geometry proposed by Harley & Ritter is given in (3):

(3) Referring Expression (=RE)

    Participant
    
    Speaker  Address

    INDIVIDUATION
    
    Group

    Minimal
    
    Augmented  Animate  Inanimate/Neuter

    CLASS
    
    Feminine  Masculine
Harley & Ritter (2002)

• Let’s start by looking at the PERSON-related side of the geometry:

(4) Referring Expression (=RE)

```
  | Participant
  |   ...
  | Speaker
```

  | Addressee

• This geometry works just like the phonological geometry we saw earlier
  ◦ so, for example, [Participant] is what distinguishes 1st/2nd person expressions (=speech-act participants) from all others
  ⇒ 1st/2nd person expressions have a [Participant] feature; 3rd person ones lack it altogether
  ➢ **crucially**, there is no such thing (on this proposal) as “[–Participant]”

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Harley & Ritter (2002)

• Let’s start by looking at the PERSON-related side of the geometry:

(4) Referring Expression (=RE)

```
  | Participant
  |   ...
  | Speaker
```

  | Addressee

➢ What about [Speaker] and [Addressee]?
  ◦ on H&R’s proposal, these are what distinguish 1st and 2nd person expressions from one another
  ⇒ **QUESTION**: given the logic of privativity (cf. [labial] vs. the absence thereof) — why do we need both [Speaker] and [Addressee]?
    – couldn’t we just have **one** subfeature for [Participant], and its presence vs. absence would be the difference between 1st and 2nd person?
Harley & Ritter (2002)

**ANSWER:**

(5)  

<table>
<thead>
<tr>
<th></th>
<th>SINGULAR</th>
<th>DUAL</th>
<th>PLURAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st ex</td>
<td>naika</td>
<td>ntaika</td>
<td>ncaika</td>
</tr>
<tr>
<td>1st in</td>
<td>tχaika</td>
<td>lχaika</td>
<td></td>
</tr>
<tr>
<td>2nd</td>
<td>maika</td>
<td>mtaika</td>
<td>mcaika</td>
</tr>
<tr>
<td>3rd</td>
<td>áχka (f.)</td>
<td>ctάχka</td>
<td>tάska</td>
</tr>
</tbody>
</table>

(Chinook [Pacific NW])

[Boas 1911:626, via Harley & Ritter 2002:493]

➢ we need both [Speaker] and [Addressee] to model 1st person inclusive expressions
  – like tχaika ("1du.INCL") and lχaika ("1pl.INCL")
  ○ this is known as a ‘clusivity’ distinction

McGinnis (2005)

• McGinnis (2005) observes a “bug” in Harley & Ritter’s (2002) geometry
  ○ if [Speaker] and [Addressee] are both universally available features;
  ○ and this is, after all, a theory of morphology;
  ⇒ then there can be a language where the morphology only pays attention to [Addressee]
    – ignoring [Speaker]
    (just like there are languages where the morphology does not pay attention to, say, [ACCUSATIVE])
  ➢ what would such a language look like?
McGinnis (2005)

- Here’s a way to think about it:
  - let’s use (as we have implicitly already been doing) the labels ‘1.EXCL’, ‘1.INCL’, and ‘2’ as descriptive categories
    - carving out particular sets of speech-act participants

⇒ Then English morphologizes these categories as follows:

(7) \[ '1.EXCL' \quad '1.INCL' \quad '2' \]
we \quad we
\[ '1.EXCL' \quad '1.INCL' \quad '2' \]
\[ '1.EXCL' \quad '1.INCL' \quad '2' \]
\[ '1.EXCL' \quad '1.INCL' \quad '2' \]
\[ '1.EXCL' \quad '1.INCL' \quad '2' \]

- this can be thought of as a language choosing to morphologize [Speaker] (using the form we)
  - and ignoring [Addressee] — instead using y’all as the ELSEWHERE spellout for [Participant] in the absence of [Speaker]

(9) \[ '1.EXCL' \quad '1.INCL' \quad '2' \]
ntcaika \quad lχaika \quad mcaika

(Chinook, pl. paradigm)
McGinnis (2005)

➢ But here’s what we never see:

(10) \* ‘1.EXCL’ \parallel ‘1.INCL’ \parallel ‘2’

\[\text{shwe} \parallel \text{shy’all}\]

• Crucially, however, Harley & Ritter’s system can generate this language
  ○ as the mirror image of English:
    – \text{shy’all} is the spellout of [Participant] in the context of [Addressee]
    – and \text{shwe} is the ELSEWHERE spellout of [Participant]

(8) ‘1.EXCL’ ‘1.INCL’ ‘2’

\[\text{RE} \ldots \text{Participant} \ldots \text{Speaker} \ldots \text{RE} \ldots \text{Participant} \ldots \text{Addressee} \ldots \text{RE} \ldots \text{Addressee}\]

McGinnis (2005)

⇒ This leads McGinnis to propose that there are certain features in the \(\phi\)-feature

geometry that are initially unavailable

○ and which the learner only activates in the face of positive evidence

• On the PERSON side of the \(\phi\)-geometry:

(11) Referring Expression (=RE)

\[\text{Participant} \ldots \text{Speaker} \ldots \text{(Addressee)}\]

○ the feature [Addressee] is unavailable unless the language exhibits a clusivity

\text{distinction}

McGinnis (2005)

⇒ So a language without a clusivity distinction (e.g. English) would look like this:

(12) ‘1’ ‘2’ ‘3’

\[\text{RE} \ldots \text{Participant} \ldots \text{RE} \ldots \text{Participant} \ldots \text{RE} \ldots \text{Addressee} \ldots \text{Addressee} \ldots \text{Addressee}\]
Harley & Ritter (2002)

- The **NUMBER** side of Harley & Ritter’s geometry looks like this:

(13) Referring Expression (=RE)

```
   ..
   
   INDIVIDUATION
   
   Group  Minimal  CLASS
   
   Augmented  ..
```

**NB:** The node [CLASS] corresponds to what I have been calling GENDER/NOUN-CLASS and, consequently, falls outside the scope of this course. H&R place this as a dependent of their NUMBER node (=[INDIVIDUATION]) for reasons that have more recently come into question.

Harley & Ritter (2002)

- I won’t spend much time on the finer details of H&R’s analysis of **NUMBER** —
  - in part because work since then has revealed various inadequacies, and made superseding proposals
    - see, in particular, Harbour (2007, *et seq.*)

Harley & Ritter (2002)

- Instead, I will only discuss what an H&R-style representation of a simple, two-number system (‘sg.’ vs. ‘pl.’; without ‘dual’, ‘trial’, or ‘paucal’) would look like:

(14) ‘sg.’ ‘pl.’

```
   RE
   
   ..  INDIV.
   
   GROUP
```

```
   RE
   
   ..  INDIV.
   
   GROUP
```
Some properties of these feature structures, and how to evaluate them

- Feature structures like (14) (and its counterparts in the domain of PERSON, surveyed earlier) embody several claims:

(14) 'sg.' \[\text{RE} \quad \text{INDIV.} \quad \text{RE} \quad \text{INDIV.} \quad \text{Group}\] 'pl.'

(i) each $\varphi$-category (PERSON, NUMBER, etc.) consists of privative features
   - rather than bivalent or multivalent ones

(ii) in the domain of NUMBER in particular, 'pl.' (or more accurately, [Group]) is the marked member of two-number oppositions
   - and is thus analogous to [Participant] in the domain of PERSON

➢ These claims would be considered controversial by scholars working on $\varphi$-features these days
   - esp. those working in the emerging ‘morphosemantics’ tradition
Some properties of these feature structures, and how to evaluate them

• So, for example:
  ◦ Nevins (2007, 2011) argues that, while NUMBER is indeed composed of privative features, PERSON is composed of bivalent ones
  ◦ Harbour (2011) argues that even NUMBER must be bivalent, as well
  ◦ Sauerland 2003 and related work argues that ‘sg.’, not ‘pl.’, is the marked member of two-number oppositions

• But:
  ◦ Nevins’ arguments are based in morphology;
  ◦ Harbour’s arguments (for the most part) and Sauerland’s arguments (entirely) are based in semantics;

  ➢ Notice something missing…?

Some properties of these feature structures, and how to evaluate them

➢ In the remainder of the course, I plan to defend the following position:
  ◦ the feature structures just given for PERSON and NUMBER are the correct ones for syntax;
  ◦ the assumption that morphology and semantics use the same representations as syntax—for any given domain (e.g. φ-features)—is fine as a methodological heuristic;
    – but as a substantive hypothesis, it is somewhere between suspect and preposterous.

Some properties of these feature structures, and how to evaluate them

  ◦ that said, since the system in its entirety (morphology + syntax + semantics + whatever else) has to be acquirable —
    – the contours of the syntactic representation will often “shine through” to the morphology and the semantics
      · see also Zeijlstra (2014)
  ◦ hence, e.g., Harley & Ritter’s (2002) morphologically-based investigation —
    · because it was typological in nature
    — ended up reflecting the properties of the (underlying & invariant) syntactic representations.
Some properties of these feature structures, and how to evaluate them

- Finally, it could still be the case —
  (even if we are correct, and the features structures surveyed here are the right ones for syntax)
  — that these feature structures are in turn derivable from some deeper, more fundamental set of primitives (cf. Harbour 2016).

- In that sense, what is being presented here can be viewed as an ‘effective theory’ of the syntax of φ-features:
  ○ as the term is used in, e.g., physics
# References


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