# Limitations on concept formation in personal pronouns 

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## Introduction

Person in Indo-European languages: 3 atoms.


Other languages may add an inclusive pronoun,
e.g. Marquesan (Cablitz 2006):
(2)


## Questions \& Hypotheses

## What is the inclusive?



Why is only the combination of speaker and hearer lexicalised (INCL) and the other combinations of the atoms unlexicalised?
 The kite

## Analysis

## The inclusive

Morphology:
$80 \%$ of the languages: morphologically independent inclusive,
i.e. not related to first or second person (3) (Daniel 2005).

Otherwise: mostly related to $1^{\text {st }}$ (and sometimes also to $2^{\text {nd }}$ ) person (4).

## (3) Tümpisa Shoshone (Dayley 1989)


(4) Quechua
(Adelaar 1977)


Consider a Hasse diagram (Smessaert 2009, Jaspers 2012):

- with atoms represented by bitstrings (5)
for $1^{\text {st }}, 2^{\text {nd }}$ and $3^{\text {rd }}$ person (6):


The inclusive (Level 2 ) is semantically made up of the atoms $i$ and $u$ (Level 1):
(7) Tümpisa Shoshone


## Unlexicalised combinations

SP + NON-PART: $i+o$
HR + NON-PART: $u+o$
$\rightarrow$ Predicted by THE CONCEPT FORMATION CONSTRAINT in the kite framework (Jaspers 2012, Seuren \& Jaspers 2014)

The Kite Framework \& CONCEPT FORMATION CONSTRAINT The kite framework deals with (mereo)logical relations between concepts, represented in the geometrical figures (shown below):

- Entailment and proper parthood (arrows)
- Contradiction (full lines)
- (Sub)contrariety (dotted and dashed lines)

The concept formation constraint posits that:

- $O$ and $U$ in the logical hexagon ( 8 ) are never lexicalised - This results in a kite structure (9).

(9)

$\stackrel{Y}{\text { Y logic quantifiers }}$
This has been demonstrated for a.o. the natural logic quanifier predicate calculus operators and colour terms (Seuren \& Jaspers 2014, Jaspers 2012).

The same applies to person, corresponding exactly to the observations in the Hasse diagram:
(10) The person hexagon:



Person and number:
Two distinct features

- Belonging to two distinct categories

I therefore employ the following terminology:
THIRD PERSON non-participant
non-participant

+ associates
This distinction is confirmed by:
- Semantics: person is deictic vs. plural is never defined as such (a.o. Béjar 2003, Corbett 2004)

Ackema and Neeleman To Appear, p. 72: $3^{\text {rd }}$ person cannot be included in the reference of a plural pronoun "without first being turned into an associate in some way",
Morphology: no languages have the sane morpheme for pland $3^{r d}$

For number, I propose the following extension:


Bitstrings: to calculate further relations, such as the proper parthood relations between the singular and plural versions of the same person.
iu: Languages have no simplex lexicalisations for an extra number distinction in inclusive, which is why the $i u$ corner is shared by both kites.

## Conclusion

A kite analysis of person sheds light on person distinctions in personal pronouns:
Captures the complexity of the inclusive person.
Predicts other combinations to be unlexicalisable.
The system can be extended to add number in order to account for the basic personal pronoun distinctions.

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