Why there are exactly five types of morphosyntactic feature

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Problem

Four indisputable morphosyntactic features:

phi features {
    NUMBER
    GENDER
    PERSON
}
CASE
DEFINITENESS }
RESPECT } rarely morphosyntactic features

Problem

Each feature has a different purpose/function/remit:

NUMBER   quantification
GENDER   categorisation
PERSON   deixis
CASE   role
DEFINITENESS   identification
RESPECT   social hierarchy

Why should this be?

No current theory predicts the number of morphosyntactic features that there are. We start to tackle this question by asking:

How can we compare features?

Are all morphosyntactic features really alike?

How many types of morphosyntactic feature are there?

Canonical features and the lexicon

To demonstrate possible types of features, it is necessary to examine the ways in which features differ from the lexicon.

The more fully *orthogonal* a feature is, both to lexical meaning (i.e. semantic predicates) and to other features, the clearer the argument for it being a feature.
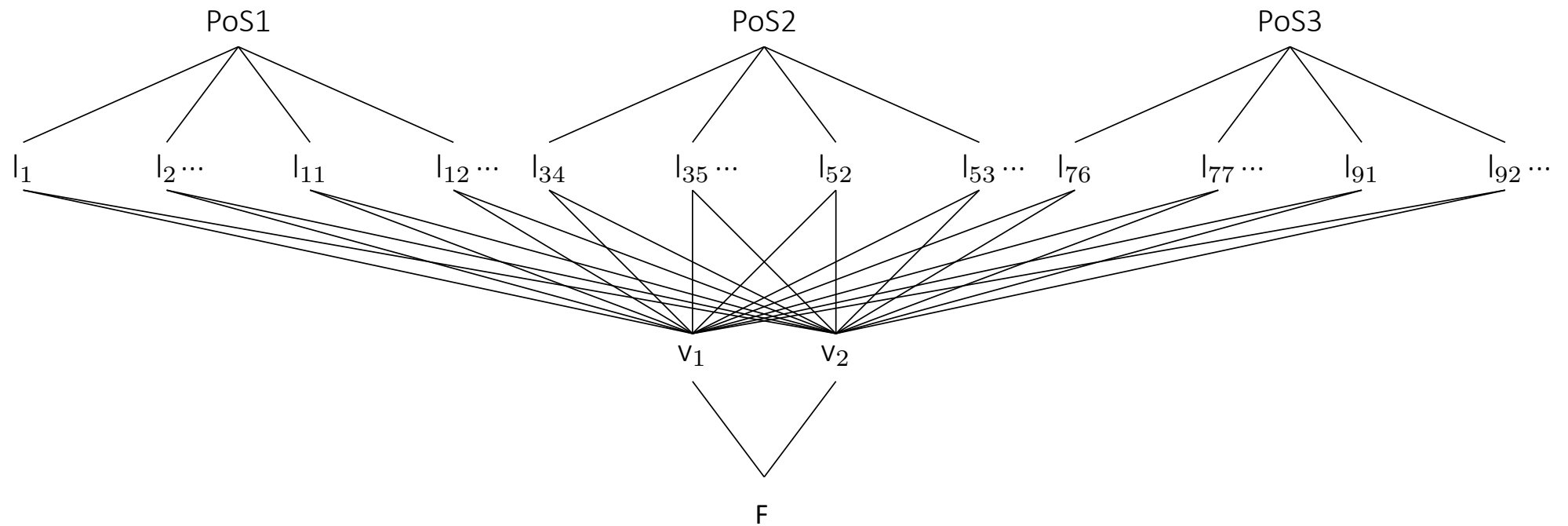
Orthogonality principle

	L1	L2	L3	L4	L5	L6...
Feature 1 ➡	√	√	√	√	√	√
Feature 2 ➡	√	√	√	√	√	√
Feature 3 ➡	√	√	√	√	√	√
Feature 4 ➡	√	√	√	√	√	√
Feature 5 ➡	√	√	√	√	√	√
Feature 6...➡	√	√	√	√	√	√

Orthogonality within the model

part of speech —— PoS

lexemes —— l_1 l_2 ... l_{11} l_{12} ...

v_1 v_2 —— values
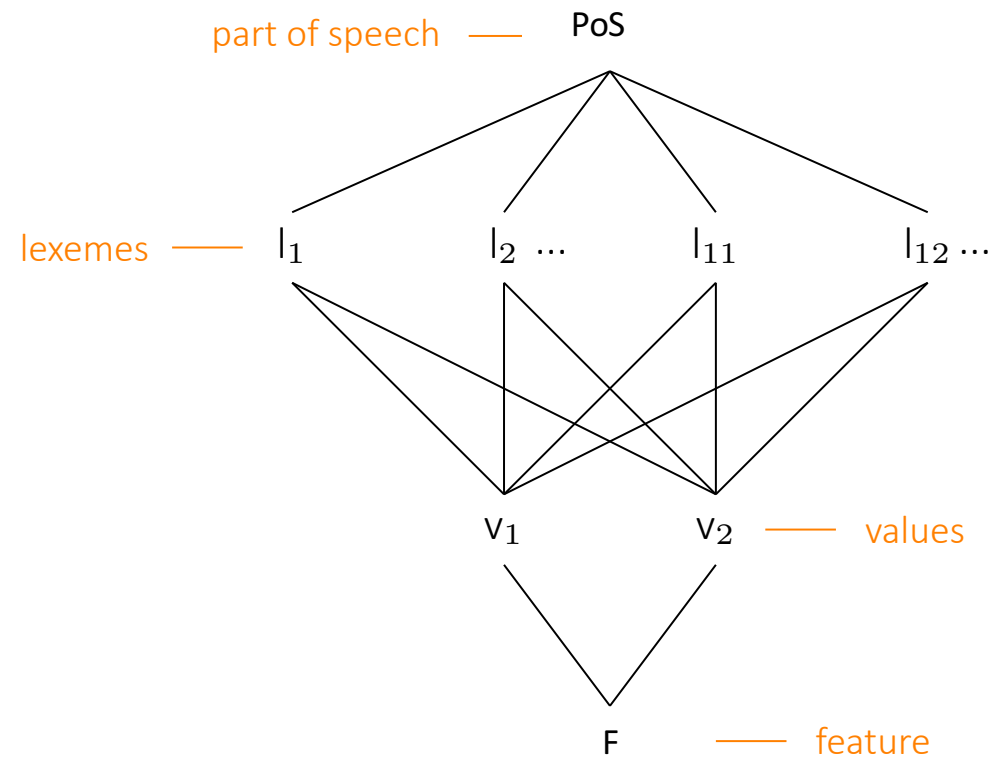
F —— feature

Orthogonality across multiple parts-of-speech

Best candidates for orthogonal features

The best candidates for orthogonal features are morphosyntactic: these features are part of the featural specification of the controller AND the target.

(1)   Archi (Bond, Corbett and Chumakina 2016: 3)

nena‹b›u   doːʕzu-b   χʕon

1PL.INCL.ERG‹III.SG›   be.big.ATTR-III.SG   cow(III)[SG.ABS]

b-ela‹b›u   ditːa‹b›u   χir   a‹b›u

III.SG-1PL.INCL.DAT‹III.SG› quickly‹III.SG›   behind   ‹III.SG›make.PFV

'We quickly drove the big cow home (lit. to us).'

Number: Availability to parts-of-speech

For a feature to be truly orthogonal, it must be in feature specification of every lexical item. Number comes closest to this. It can appear in the specification of the largest selection of controllers and targets.

PART OF SPEECH	ARCHI	RUSSIAN	ENGLISH	GURUNG
NOUN	√	√	√	√
PRONOUN	√	√	√	√
VERB	√	√	√	X
ADJECTIVE	√	√	X	X
ADVERB	√	X	X	X
ADPOSITION	√	X	X	X

Tense: Availability to parts-of-speech

Tense is usually less orthogonal because it is typically morphosemantic, and only participates in the featural specifications of a more limited set of parts-of-speech (usually verbs).

PART OF SPEECH	ARCHI	RUSSIAN	ENGLISH	GURUNG
NOUN	X	X	X	X
PRONOUN	X	X	X	X
VERB	√	√	√	√
ADJECTIVE	X	X	X	X
ADVERB	X	X	X	X
ADPOSITION	X	X	X	X

Exhaustive orthogonality

Canonically, a feature is maximally *exhaustive*.

The feature and all its values can appear in the feature specification of every lexical item within every part-of-speech.

PoS 1	V1	V2
I1	√	√
I2	√	√
I3	√	√
I4	√	√
I5…	√	√

+

PoS 2	V1	V2
I11	√	√
I12	√	√
I13	√	√
I14	√	√
I15…	√	√

+

PoS 3	V1	V2
I21	√	√
I22	√	√
I23	√	√
I24	√	√
I25…	√	√

Restrictions on orthogonality

If canonical features are orthogonal to the lexicon, restrictions on exhaustivity of this orthogonality may give rise to various types of non-canonical feature.

Exhaustivity and non-canonical features

Features differ in terms of how exhaustive they are in different ways.

Sometimes, only a single value of a feature is available to a particular lexeme, or the feature may not be available at all.

FEATURE 1	V1	V2
l1	√	√
l2	√	√
l3	√	√
l4	√	√
l5…	√	√

FEATURE 2	V1	V2
l11	√	√
l12	√	√
l13	√	X
l14	X	√
l15…	√	√

FEATURE 3	V1	V2
l21	√	√
l22	√	√
l33	√	X
l24	X	√
l25…	X	X

Properties of controllers and targets

Since the features which have the widest distribution across parts of speech are nearly always morphosyntactic, it is sensible to examine the properties of controllers/governors and targets/governees separately, as they are (in theory) logically independent.

Possible targets

PART OF SPEECH	NUMBER	GENDER	PERSON	DEFINITENESS	CASE
DETERMINER	√	√	X		√
QUANTIFIER	√	√	X	√	√
PRONOUN	√	√	√	X	√
NOUN	√		√	√	√
ADJECTIVE	√	√	√	√	√
VERB	√	√	√	X	
ADPOSITION	√	√	√	X	
ADVERB	√	√	√	X	?

Possible targets

PART OF SPEECH	NUMBER	GENDER	PERSON	DEFINITENESS	CASE
DETERMINER	FRENCH	FRENCH	X		GERMAN
QUANTIFIER	O. C. SLAVONIC	RUSSIAN	X	O. H. GERMAN	RUSSIAN
PRONOUN	ARCHI	ARCHI	ARCHI	X	RUSSIAN
NOUN	NENETS		NENETS	NORWEGIAN	RUSSIAN
ADJECTIVE	ARCHI	ARCHI	NENETS	NORWEGIAN	RUSSIAN
VERB	ARCHI	ARCHI	NENETS	X	
ADPOSITION	ARCHI	ARCHI	ABKHAZ	X	
ADVERB	ARCHI	ARCHI	ARCHI	X	?

Non-exhaustive targets

When possible targets are nonexhaustive, we can characterise their deviation from exhaustivity, by looking at which items within a class do not participate, or which values of the feature are unavailable.

- Unavailable agreement targets are non-agreeing (for various reasons).
- Unavailable governees show semantically determined variation or other conditions on the properties of the target.
- Defective targets lack a form for a particular value (principally for historical reasons).

Restrictions on controllers/governors

For the purposes of determining the ways in which features can be non-canonical, the properties of controllers and the relation they have with their target is most telling.

Restriction to classes with small number of members
- Person
- Definiteness

Restriction on the pervasiveness of the values
- Number vs. gender vs. case
- Pervasive person

Possible controller/governor classes

| PART OF SPEECH	NUMBER	GENDER	PERSON	DEFINITENESS	CASE
DETERMINER	X	X	X	√	X
NUMERAL	√	X	X	X	X
PRONOUN	√	√	√	X	X
NOUN	√	√	X	X	X
VERB	X	X	X	X	√
ADPOSITION	X	X	X	X	√

Orthogonality and controllers in open classes

Non-canonical features are restricted to closed classes of controllers/governors with limited membership, possibly aligning with a lexical vs. functional head distinction.

CANONICAL   >>   NON-CANONCIAL

Number (nouns)   Person (pronouns)
Gender (noun)   Respect (pronouns)
Case (verbs)   Definiteness (determiners)

Pervasiveness

Canonical exhaustive features have pervasive values: their values structure the paradigms of targets and controllers.
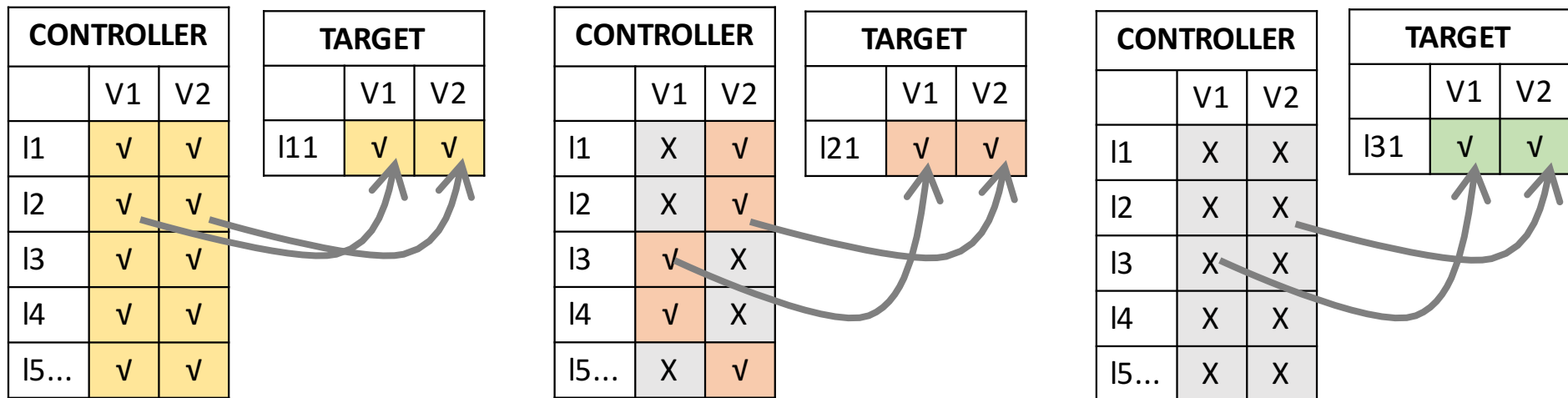
Number as a pervasive feature

Number can be a pervasive feature because both the paradigm of the controller and paradigm of the target may include forms which manifest that feature.

(2)   Tundra Nenets number agreement (Nikolaeva 2014: 158)

    a. s'id'a xasawa-xᵒh   xəya-xᵒh   b. *s'id'a   xasawa xəya-xᵒh

        two   man-DU   go-3DU   two   man   go-3DU

        'Two men left.'   Intended: 'Two men left.'

Gender as a less pervasive feature

Gender is a less pervasive because controllers belong to one mutually exclusive gender. The gender of a controller does not vary according to context.

(3)   Archi gender agreement (Bond & Chumakina 2016: 49)

a.	mu-tːu	bošor	'handsome man'	GENDER I
b.	mu-tːu-r	ɬːonnol	'beautiful woman'	GENDER II
c.	mu-tːu-b	noʕš	'beautiful horse'	GENDER III
d.	mu-tːu-t	nokɬ'	'beautiful house'	GENDER IV

Case as a non-pervasive feature

Case is non-pervasive. The values controlled by case is in some way not part of the specification of the controller itself.

(4) Case government in Archi (Chumakina, Bond & Corbett 2016: 27-28)

    a. uɬmu   os   ħawan   b-uq'u-li

          shepherd(I).SG.ERG one   animal(III)[SG.ABS]   III.SG-slaughter.PFV-EVID

          'The shepherd slaughtered one animal.'

    b. to-w-mi-s   Ajša   d-akːu

          that-I.SG-SG.OBL-DAT Aisha(II)[SG.ABS]   II.SG-see.PFV

          'He has seen Aisha.'

Person as a pervasive feature in Nenets

Whether person is pervasive or not is a matter of analysis for individual languages.

Nominative pronouns in Tundra Nenets (Nikolaeva 2014: 47)

	SG	DU	PL
1	mən'°	mən'ih	mən'aq
2	pidər°	pid°r'ih	pid°raq
3	pida	pid'ih	pidoh

	SG	DU	PL
1	mən'°	mən'ih	mən'aq

	SG	DU	PL
2	pidər°	pid°r'ih	pid°raq

	SG	DU	PL
3	pida	pid'ih	pidoh

Definiteness as a morphosyntactic feature

Determiners (rather than nouns) can govern the properties of phrase level elements.

(5)   Norwegian (Corbett 2012: 135)

   a. det   ny-e   hus-et   mitt

       DEF.N.SG   new-DEF.SG   house(N)-DEF.N.SG   my.N.SG

       'my new house'

   b. mitt   ny-e   hus

       my.N.SG   new-DEF.SG   house(N)[INDEF]

       'my new house'

Typology of morphosyntactic feature types

feature type	controller			nearest actual feature
	pervasive values	controller class open	agreement	
I	√	√	√	NUMBER
II	X	√	√	GENDER
III	√	X	√	PERSON
IV	X	X	√	PERSON
V	X	√	X	CASE
VI	√	X	X	DEFINITENESS
VII	X	X	X	DEFINITENESS
VIII	√	√	X	UNATTESTED

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