Defaults and the Canonical Ideal

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Motivation

- Canonical Typology
  - what the possibilities are
  - determined by analysis of the evidence

- Network Morphology
  - the relationship between inflectional classes and default classes
  - the extent to which default classes correspond to recognizable parts of speech

Structure

- PART ONE: Introduction to Network Morphology
- PART TWO: Defaults and canonical inflectional classes
- PART THREE: Shape of the Paradigm
- PART FOUR: Further issues
- PART FIVE: Conclusion

PART ONE

- Network Morphology

Network Morphology

- Uses DATR (Evans & Gazdar 1996) to implement analyses

Network Morphology

- Lexeme-based

```
Stol:
    <> = NOUN
    <declensional_class> == N_I:<mor>
    <gloss> == table
    <root> == stol
    <stress_index> == 2.
```

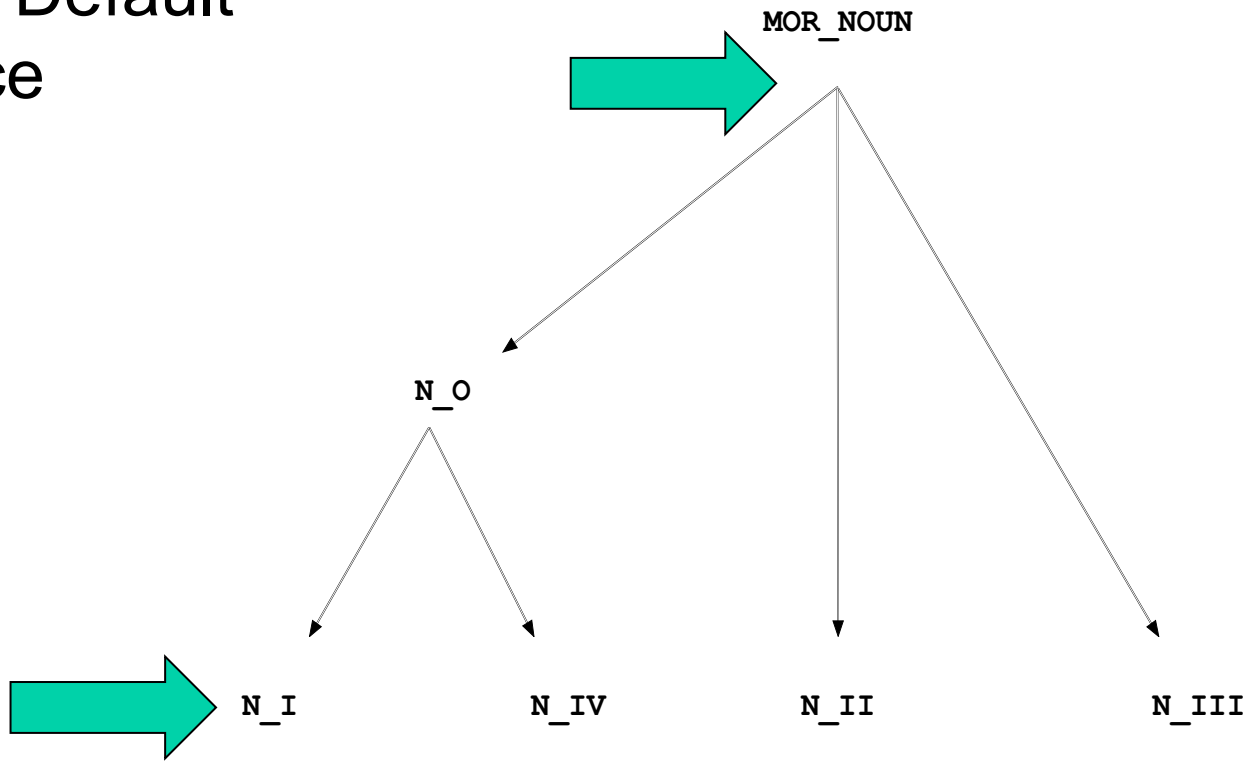
Network Morphology

- Inferential-Realizational

```
<mor sg dat> == "<stem sg>" ^ u "<stress sg>"
```

Network Morphology

- Based on Default Inheritance



Network Morphology

- attribute ordering

a. <mor sg dat>
b. <mor sg>
c. <mor>
d. <>

Network Morphology

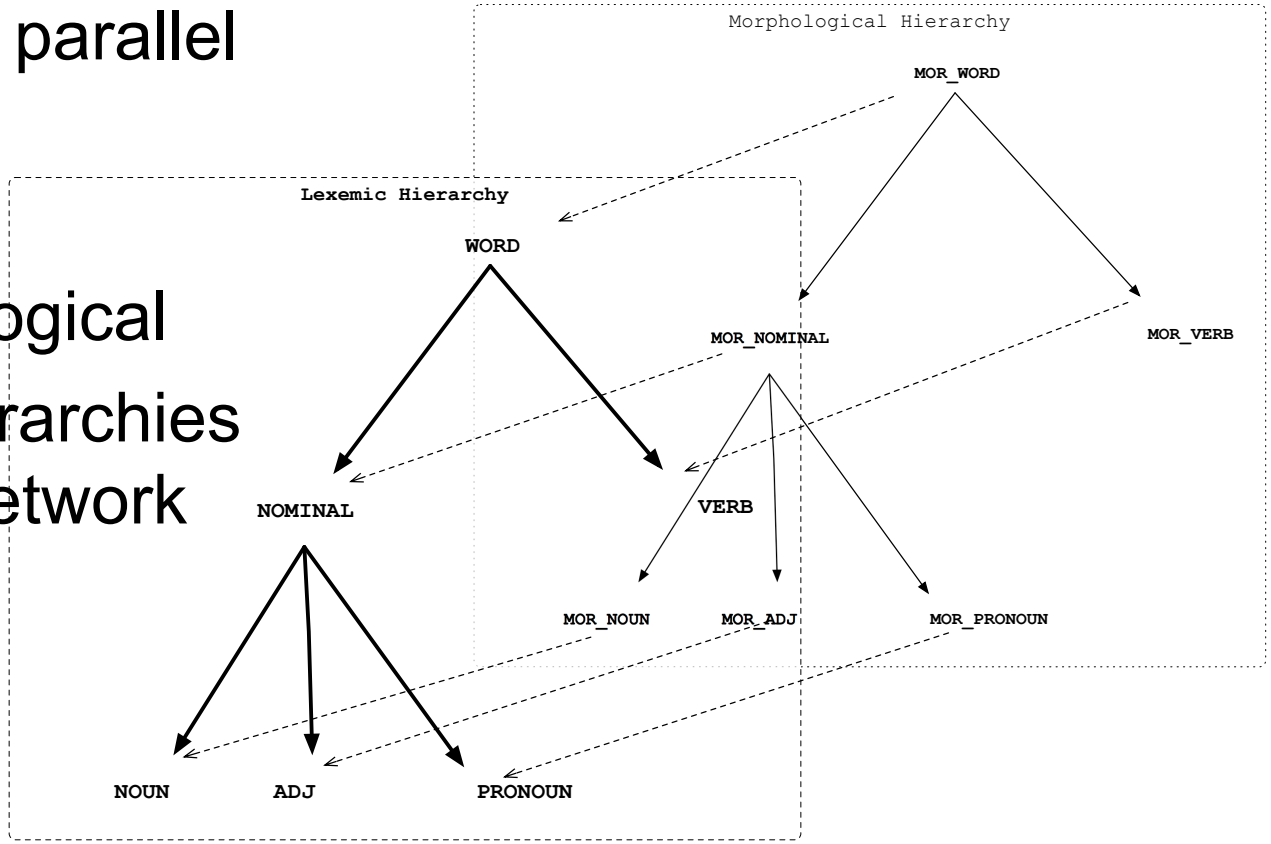
- Implicit typing based on attribute ordering

```
<mor sg dat> = stol-ú
```

```
{MODULE:MOR, NUM:SG, CASE:DAT} = stol-ú
```

Network Morphology

- Orthogonal parallel hierarchies
  - Lexemic
  - Morphological
- Parallel hierarchies form one network



Principle of Morphological Projection

Morphological classes reflect parts of speech: by default we expect parts of speech to have a corresponding morphological class.

(Brown and Hippisley 2012: 107)

(see Spencer 2005: 101)

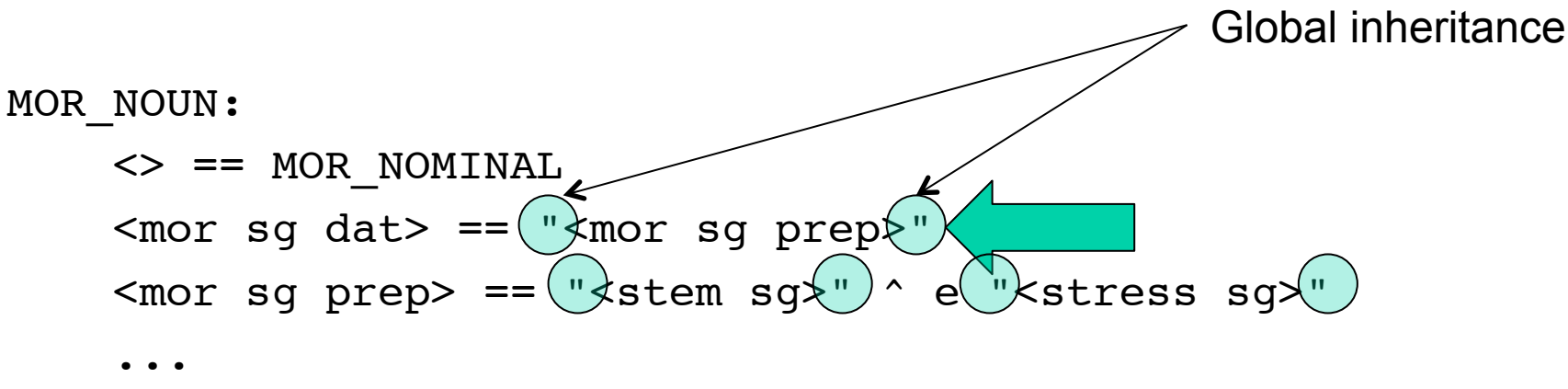
Network Morphology

- Different degrees of autonomy
  - Type 1: Direct relationship between morphology and syntax
  - Type 2: Feature slippage
  - Type 3: Separate orthogonal hierarchies

Network Morphology

	I	II	III	IV
NOM SG	zakón	kárt-a	rúkop´is´	bolót-o
ACC SG	zakón	kárt-u	rúkop´is´	bolót-o
GEN SG	zakón-a	kárt-i	rúkop´is´-i	bolót-a
DAT SG	zakón-u	kárt-e	rúkop´is´-i	bolót-u
INS SG	zakón-om	kárt-oj	rúkop´is´-ju	bolót-om
PREP SG	zakón-e	kárt-e	rúkop´is´-i	bolót-e

Network Morphology



Network Morphology

- Global and local inheritance

Network Morphology

	I	II	III	IV
NOM SG	zakón	kárt-a	rúkop´is´	bolót-o
ACC SG	zakón	kárt-u	rúkop´is´	bolót-o
GEN SG	zakón-a	kárt-i	rúkop´is´-i	bolót-a
DAT SG	zakón-u	kárt-e	rúkop´is´-i	bolót-u
INS SG	zakón-om	kárt-oj	rúkop´is´-ju	bolót-om
PREP SG	zakón-e	kárt-e	rúkop´is´-i	bolót-e

Network Morphology

evaluable path

```
NOUN:
    <> == NOMINAL
    <declensional_class> == DECLENSION:< "<sem sex>" >
    <syn cat> == n
    …
```

```
Muzhik:
    <> == NOUN
    <gloss> == peasant
    <root all> == muzhik
    <sem sex> == male
    …
```

```
Mama:
    <> == NOUN
    <gloss> == mum
    <root all> == mam
    <sem sex> == female
    …
```

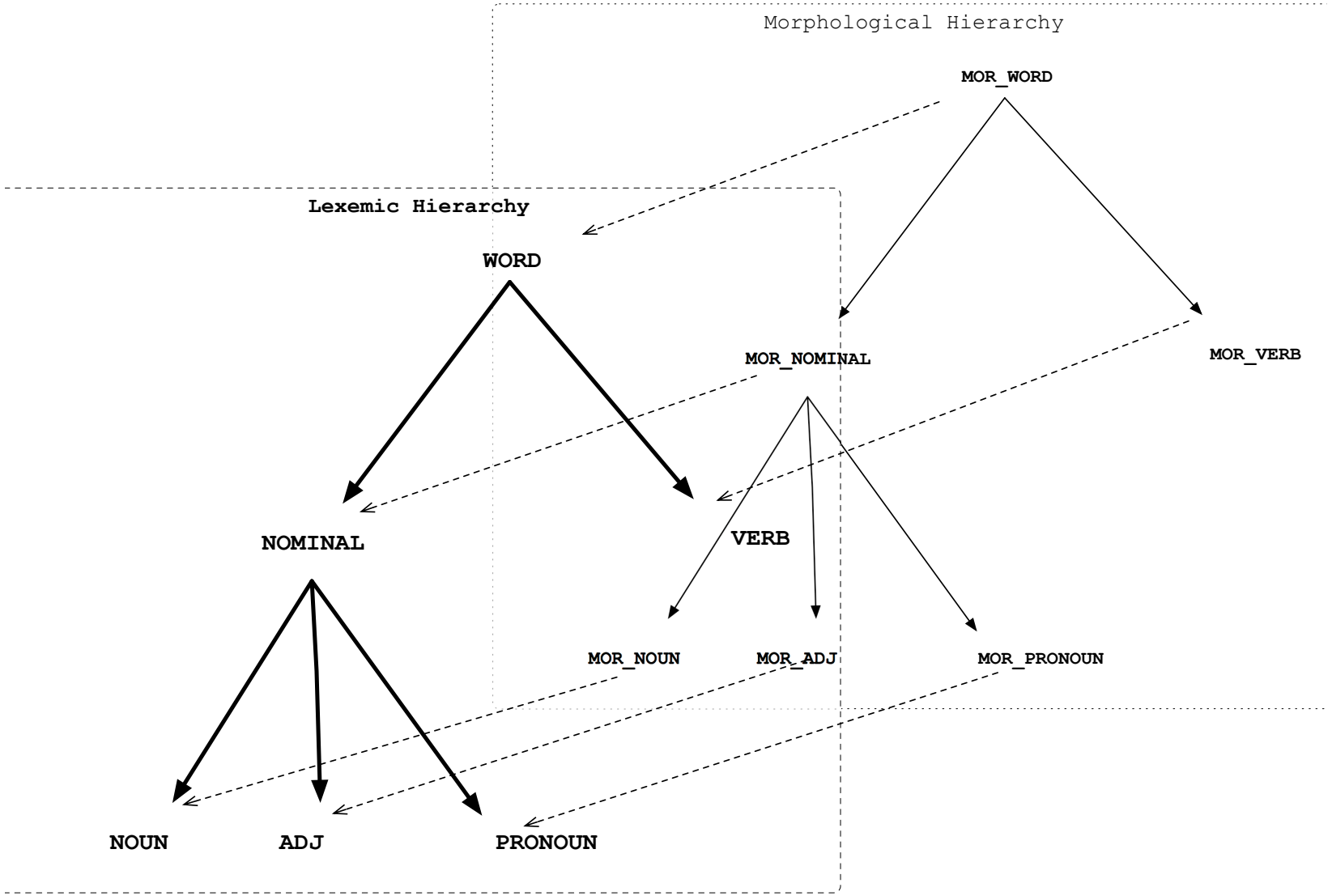
Network Morphology

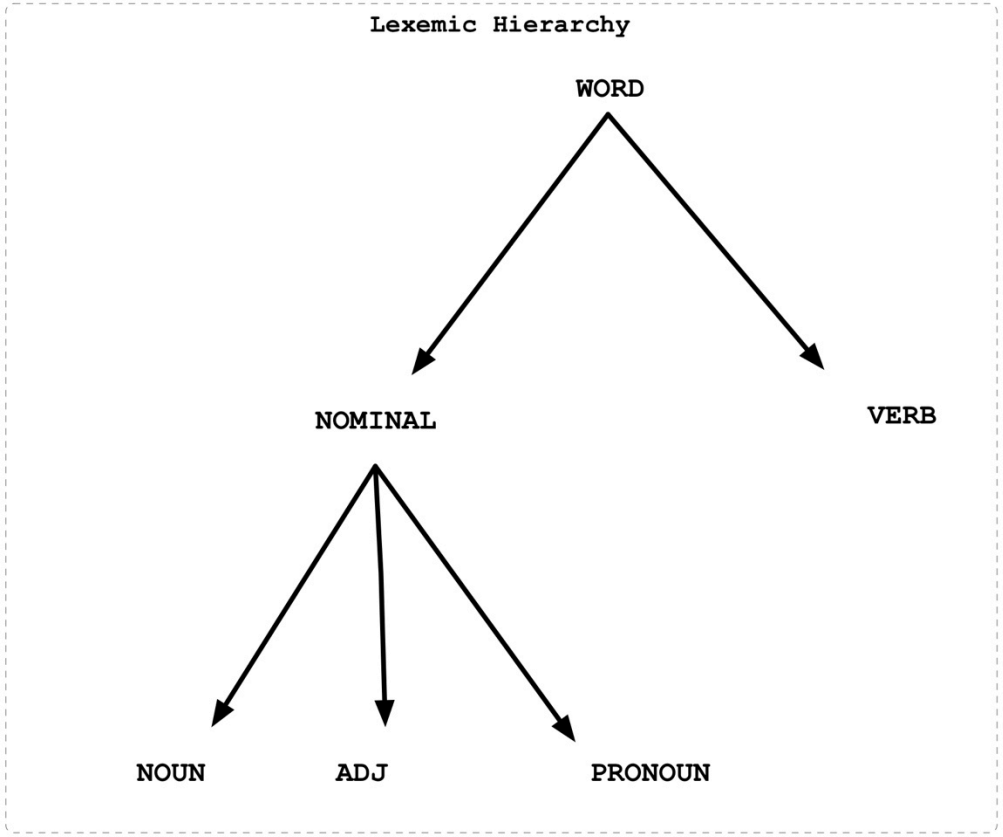
- How do we move to type 3 autonomy, and away from type 3 autonomy?
- *Morphological Projection* creates default morphological classes corresponding to parts of speech.
- *Node Elimination* does away with unnecessary classes.

Node Elimination

If a node *N1* inherits from another node *N2* (where *N1* ≠ *N2*) via a non-evaluable* inheritance relation, and there is no other node which inherits from *N2*, then *N2* is eliminable and the associated information can be stated at *N1*.

*Non-evaluable = not involving evaluable paths


Morphological Hierarchy
MOR_WORD
Lexemic Hierarchy
WORD
MOR_NOMINAL
MOR_VERB
NOMINAL
VERB
MOR_NOUN
MOR_ADJ
MOR_PRONOUN
NOUN
ADJ
PRONOUN


Lexemic Hierarchy
WORD
NOMINAL
VERB
NOUN
ADJ
PRONOUN

EXAMPLE 1: No Morphological Hierarchy Required

- Kokota (Santa Isabel subgroup of Northwest Solomonic)
- Demonstratives at the right edge of a left-headed noun phrase
- Person and number marking on nouns (possession) and verbs

No Morphological Hierarchy Required (marking of right-edge of phrase)

a. *(ira)* *mane* *tove=ro*
ART.PL man old=DEM
'those old men'

b. *(ira)* *mane* *dou=ro*
ART.PL man be.big=DEM
'those big men'

c. *(ira)* *mane* *vave=ro*
ART.PL man in.law=DEM
'those men [who are] in-laws'

(Examples from Palmer and Brown (2007: 201))

No Morphological Hierarchy Required (marking of syntactic head)

a. *(ia)* *nene-gu* *(ara)*
ART.SG leg-1SG 1SG
'my leg'

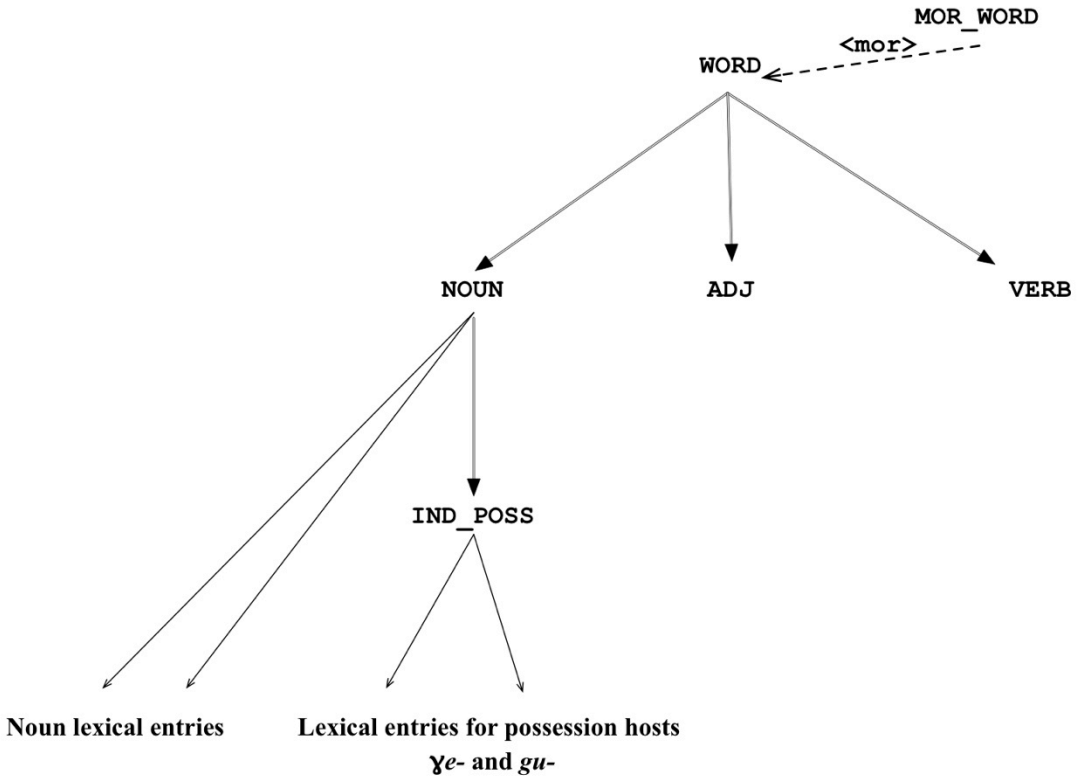
b. *(ia)* *no-gu* *suga* *(ara)*
ART.SG GENPOSS-1SG house 1SG
'my house'

c. *(ia)* *ɣe-gu* *kaku* *(ara)*
ART.SG CONSPOSS-1SG banana 1SG
'my banana (which I intend to eat)'

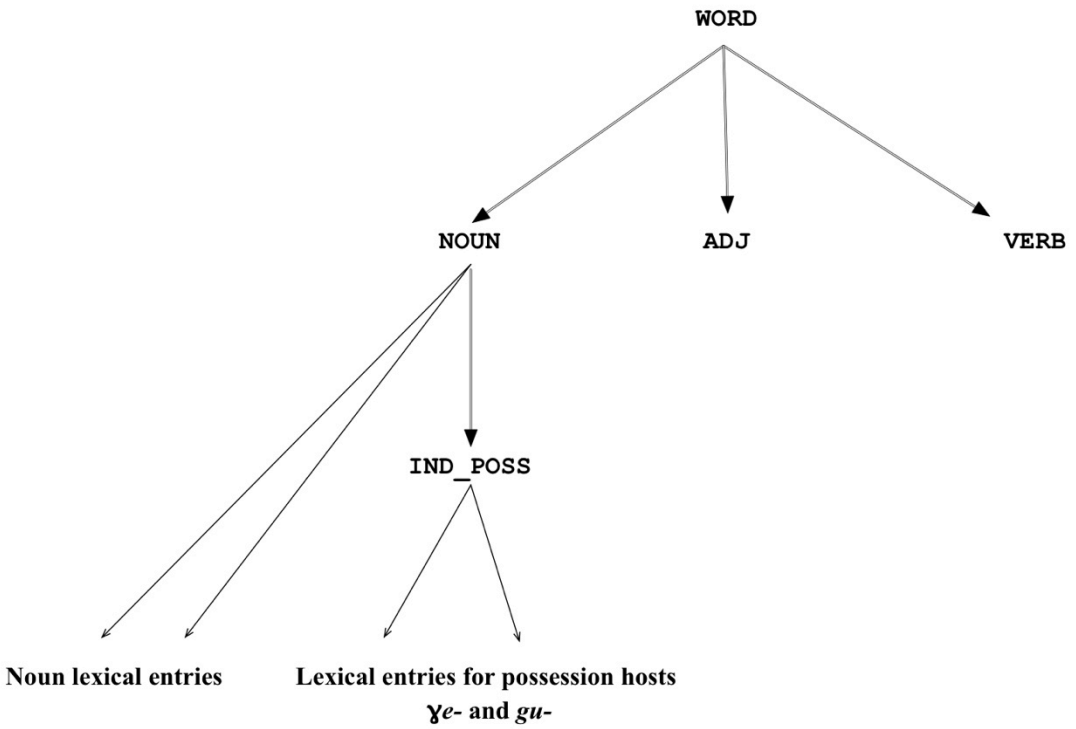
No Morphological Hierarchy Required

```
MOR_WORD:
    <mor> ==
    <mor dem pl not_visible> ==  -ro
    <mor dem sg not_visible> ==  -no
    <mor dem sg within_reach> == -ine
    <mor poss first sg> == -gu "<mor>"
    <mor poss first pl> == -mai "<mor>".
```

No Morphological Hierarchy Required



No Morphological Hierarchy Required



EXAMPLE 2: Morphological Hierarchy Required

Syntax of Russian nominals

a. NOMINAL
b. ADJ
c. NOUN
d. PRONOUN

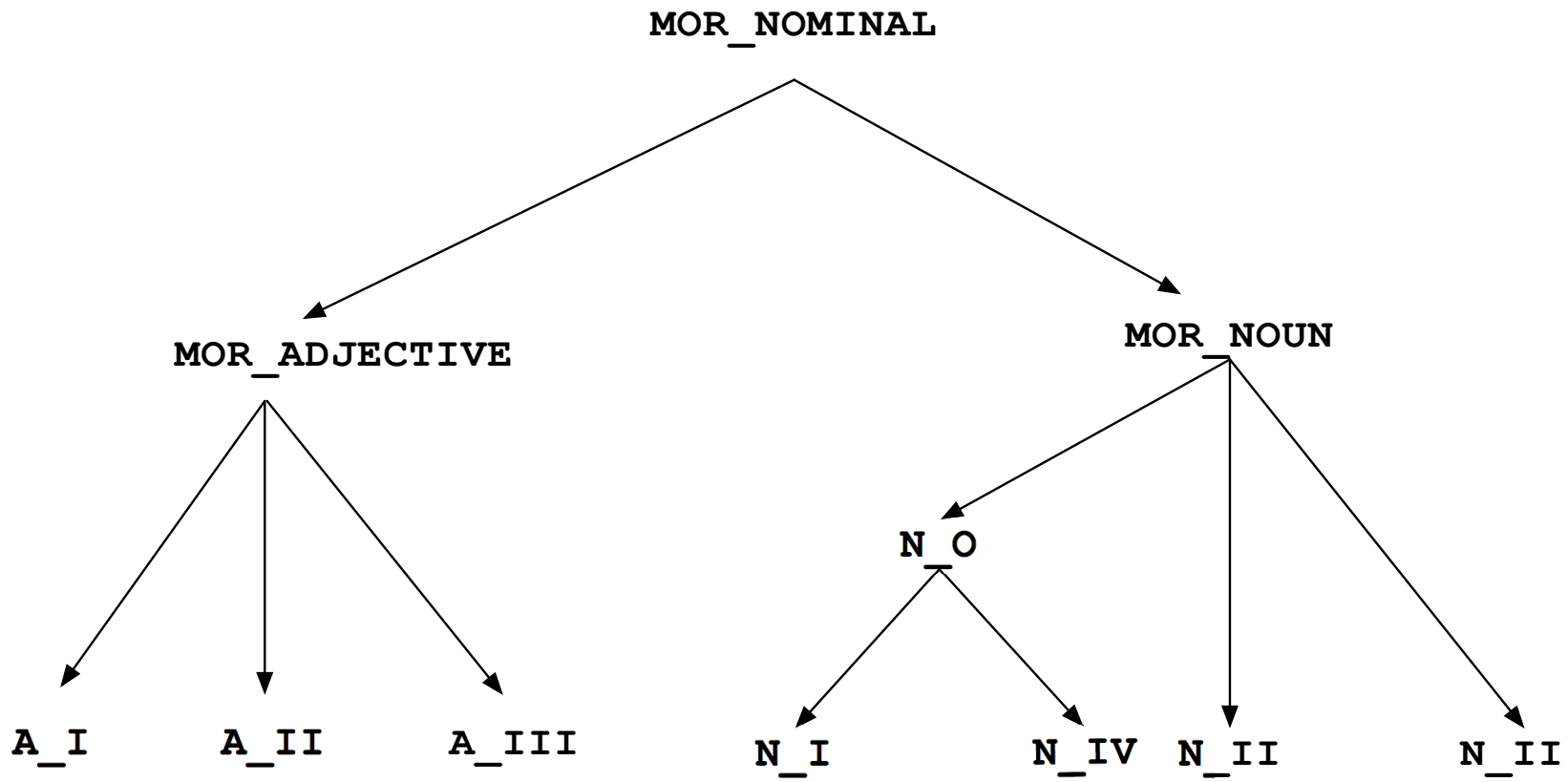
Morphology of Russian nominals

a. MOR_NOMINAL
b. MOR_ADJ
c. MOR_NOUN

Morphological Hierarchy Required

	Adjectives **novij** **'new'**	**Third person pronoun**	**Non-third pronouns**	**Nouns**
SG DAT	*nov-omu* (M/N)	*j-omu* (M/N)	*mn′-e* ('me')	*zavod-e* 'factory' (Class I)
	nov-oj (F)	*j-(e)j* (F)	*teb′-e* ('you')	*komnat-e* 'room' (Class II)
				tel-e 'body' (Class IV)

Morphological Hierarchy Required



Morphological Hierarchy Required

Lexemic Hierarchy

- NOUN
- ADJECTIVE
- PRONOUN

Morphological Hierarchy

- N_I, N_II, N_III, N_IV
- A_I, A_II, A_III
- A_II (third person)
- N_II, N_I

Summary

- Network Morphology allows for varying degrees of morphological autonomy
  - Type 1: Direct relationship between morphology and syntax
  - Type 2: Feature slippage
  - Type 3: Separate orthogonal hierarchies
- Under type 3 default classes still reflect parts of speech

PART TWO

- Defaults and canonical inflectional classes

Inflectional Classes

- Relevant properties
  - Form: rules of exponence
  - Paradigms: morphological signature
  - Paradigms: rules of referral
  - Stump's content and form paradigm

Canonical Inflectional Classes

- Criterion 1:

  "In the canonical situation, forms differ as consistently as possible across inflectional classes, cell by cell …

  the existence of shared or default forms for some cells gives reduced canonicity"

  Corbett (2009)

Canonical Inflectional Classes

- Criterion 2:

  “Canonical inflectional classes realize the same morphosyntactic or morphosemantic distinctions (they are of the same structure). ”

  Corbett (2009)

A Non-canonical Example (Rules of Exponence are Defaults)

```
DEFAULT_CLASS:
     <mor sg nom> == stem
     <mor sg acc> == stem - a
     <mor sg gen> == stem - e
     <mor sg dat> == stem - i
     <mor sg inst> == stem - o
     <mor sg prep> == stem - u.
```

A Non-canonical Example

```
CLASS_1:
    <> == DEFAULT_CLASS
    <mor sg dat> == "<mor sg gen>".
CLASS_2:
    <> == DEFAULT_CLASS
    <mor sg inst> == "<mor sg prep>".
CLASS_3:
    <> == DEFAULT_CLASS
    <mor sg prep> == "<mor sg nom>".
CLASS_4:
    <> == DEFAULT_CLASS
    <mor sg gen> == "<mor sg prep>".
```

Output
(syncretism not systematic)

CLASS_1	CLASS_2
<mor sg nom> = stem. <mor sg acc> = stem - a. **<mor sg gen> = stem - e.** **<mor sg dat> = stem - e.** <mor sg inst> = stem - o. <mor sg prep> = stem - u.	<mor sg nom> = stem. <mor sg acc> = stem - a. <mor sg gen> = stem - e. <mor sg dat> = stem - i. **<mor sg inst> = stem - u.** **<mor sg prep> = stem - u.**
CLASS_3	**CLASS_4**
<mor sg nom> = stem. <mor sg acc> = stem - a. <mor sg gen> = stem - e. <mor sg dat> = stem - i. <mor sg inst> = stem - o. **<mor sg prep> = stem.**	<mor sg nom> = stem. <mor sg acc> = stem - a. **<mor sg gen> = stem - u.** <mor sg dat> = stem - i. <mor sg inst> = stem - o. **<mor sg prep> = stem - u.**

Non-canonical Example

- syncretism is not systematic
- inflectional classes only established on the basis of referrals (not very canonical)
- still has primary exponents for each morphosyntactic combination
- default class is never instantiated by a lexical item

Nuer

	‘milk’	‘kind of tree’	‘bump’	‘rank’	‘potato’	‘fat’	‘hair’	‘ring’
NOM SG	cak	kɛ̈c	pony	gatɔt	tac	liɛth	nhim	nyaŋyɛt
GEN SG	caak	kɛ̈c-kä	pony-kä	gatɔt-kä	tac-kä	liɛth-kä	nhim	nyaŋyɛt
LOC SG	caak	kɛ̈c-kä	pony-kä	gatɔt-kä	tac	liɛth	nhim-kä	nyaŋyɛt-kä
NOM PL	cak	kɛɛc	poony	gaatuut-ni	tac-ni	lith	nhiäm	nyaŋyɛt-ni
GEN PL	cak	kɛɛc-ni	poony-ni	gaatuut-ni	tac-ni	lith-ni	nhiäm-ni	nyaŋyɛt-ni
LOC PL	cak-ni	kɛɛc	poony-ni	gaatuut-ni	tac-ni	lith-ni	nhiäm-ni	nyaŋyɛt-ni

As discussed by Baerman *et al.* (2005) and Baerman (forthcoming)

Nuer

- In Baerman's analysis defaults describe a maximal distribution:

  Global Rules

  a. By default, genitive and locative singular are KÄ
  b. By default, genitive and locative plural are NI
  c. By default, nominative plural is ZERO

- Interaction with suffixation-contingent and stem-contingent rules
- Constrained lexical specification

Burmeso

- Exponents differ
- Patterns of syncretism are shared
- Defaults stipulate shape of the paradigm

canonical inflectional classes

Table 1: verbal inflectional classes in Burmeso (Corbett, 2008; Donohue, 2001: 100, 102)

	assignment	inflectional class 1		inflectional class 2	
		e.g. -ihi- 'see'		e.g. -akwa- 'bite'	
		SG	PL	SG	PL
I	male	*j-*	*s-*	*b-*	*t-*
II	female, animate	*g-*	*s-*	*n-*	*t-*
III	miscellaneous	*g-*	*j-*	*n-*	*b-*
IV	mass nouns	*j-*	*j-*	*b-*	*b-*
V	banana, sago tree	*j-*	*g-*	*b-*	*n-*
VI	arrows, coconuts	*g-*	*g-*	*n-*	*n-*

NM Principle: rules of referral beat rules of exponence

- Brown and Hippisley (2012: 126) *Referrals beat affixes* used to determine default

- Compare: Stump's (2001: 142) of the *Function Composition Default* to deal with portmanteau rule blocks. (not for syncretism as such)

PART THREE

- Shape of paradigms

- There are examples where the shape of paradigms differs at other points in the hierarchy

Shape of paradigms

- Morphological signatures are flexible
  (Evans n.d. Brown and Hippsley 2012)
  – second locative (Brown 2007)

shape of paradigms

Morphological Signature Constraint

For two paths A and B in the morphological analysis, if feature value V_a in path A and feature value V_b in path B belong to different features, F_1 and F_2, then paths A and B cannot be extensions of the same sub-path.

(Brown and Hippisley 2012: 66)

Shape of paradigms

OK (on verbs)

`<mor sg non-past first>` (čitaju)

`<mor sg past masc>` (čital)

The past tense has gender but not person. Although these are different features, the split is determined by different values of tense, and therefore we are dealing with extensions of different paths.

(i.e. `<mor sg non-past>` and `<mor sg past>` are not the same path)

Shape of paradigms

OK (on nouns)

`<mor sg prep>`	`(lese)`
`<mor sg prep loc>`	`(lesú)`

The second locative is an extension of `<mor sg prep>`, but nouns have no other paths where `<mor sg prep>` is extended by a value of a different feature.

There is no default specification of the second locative for nouns.

Shape of paradigms

NOT OK (on adjectives)

`<mor sg prep fem>`

`<mor sg prep loc>`

A value of gender and a value of sub-case extend the same path, `<mor sg prep>`. Brown (2007) argues that this is a key reason why the second locative in Russian always remains marginal, as it could never spread to adjectives.

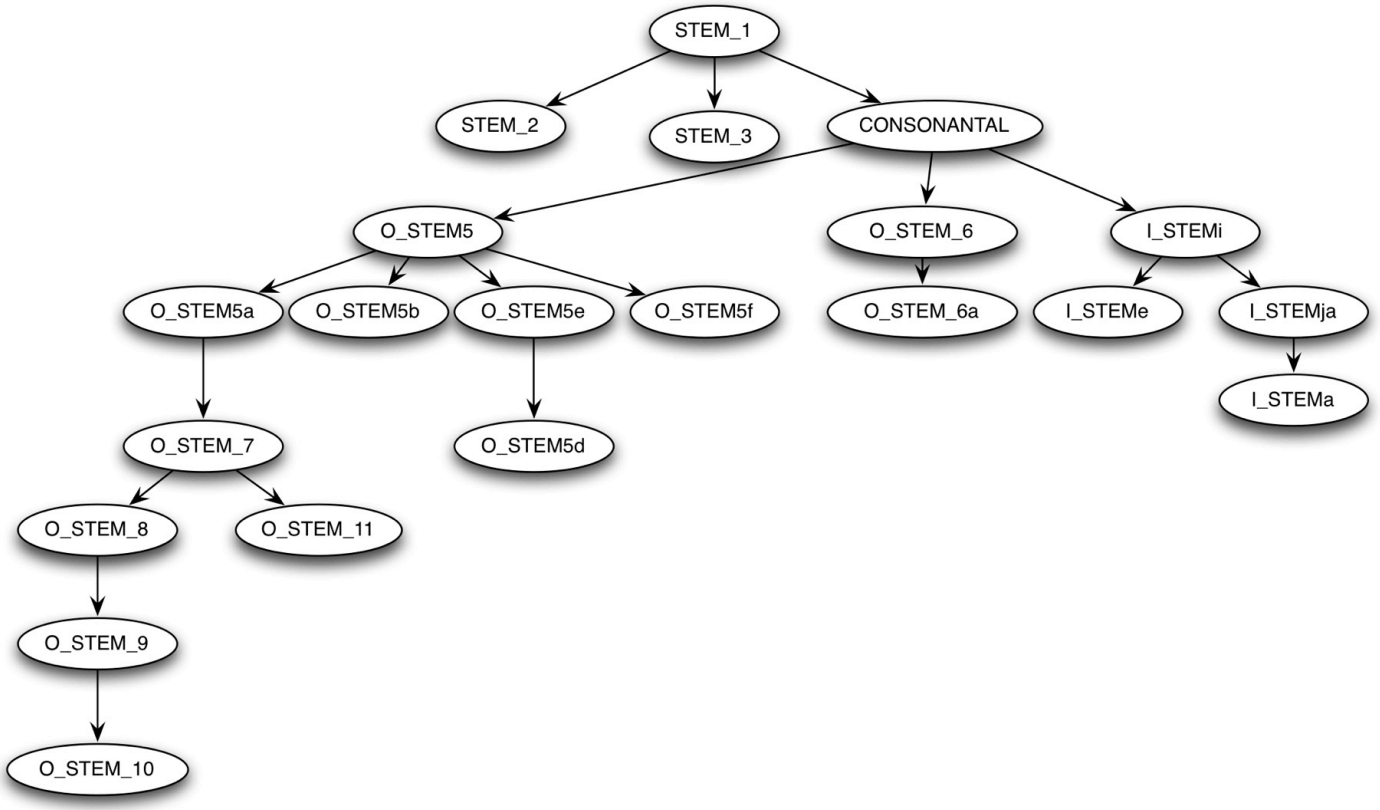
PART FOUR

- Further issues
  - Stems vs. Inflectional Classes
    (e.g. Montermini & Boye 2012)
  - Udihe Nouns and Adjectives
    (Nikolaeva 2008)

Russian Verb Stems

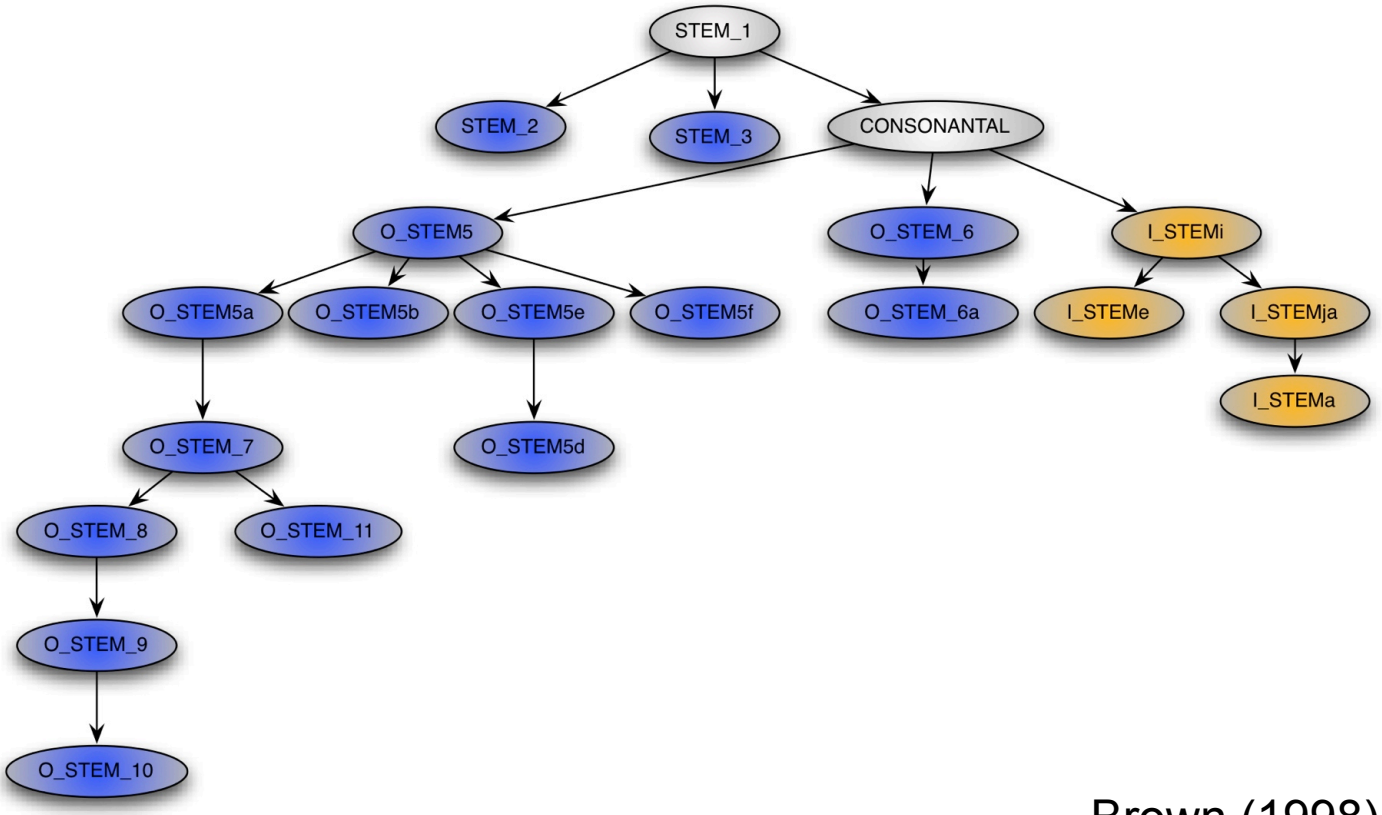
Present Stem	<stem 2>	(First Sg or Third Pl) <stem 2 a>
Infinitive/Past Stem	<stem 1>	(Past) <stem 1 b>

Russian Verb Stems



Brown (1998)

Russian Verb Stems



Brown (1998)

Udihe Nouns and Adjective

- Nouns
  - Number, Case and Possession Marking
  - Two declensions/stem classes:
    - I (vowel-final stems)
    - II (n-final stems)
  - Classes differentiate ACC, LOC, PROL cases and the first singular and first plural exclusive possessive forms

Udihe Nouns and Adjective

- Adjectives
  - When attributive they do not inflect, except for the optional plural marker *-ŋku*
  - Number, Case and Possession Marking when in other syntactic functions
  - Declensions/stem types
    - Tendency for Class I to take over (Nikolaeva & Tolskaya 2001: 173)

Udihe Nouns and Adjectives

- Proprietive form is unique to nouns
  - creates a 'mixed category' item
  - modifies a noun head
  - can be modified itself

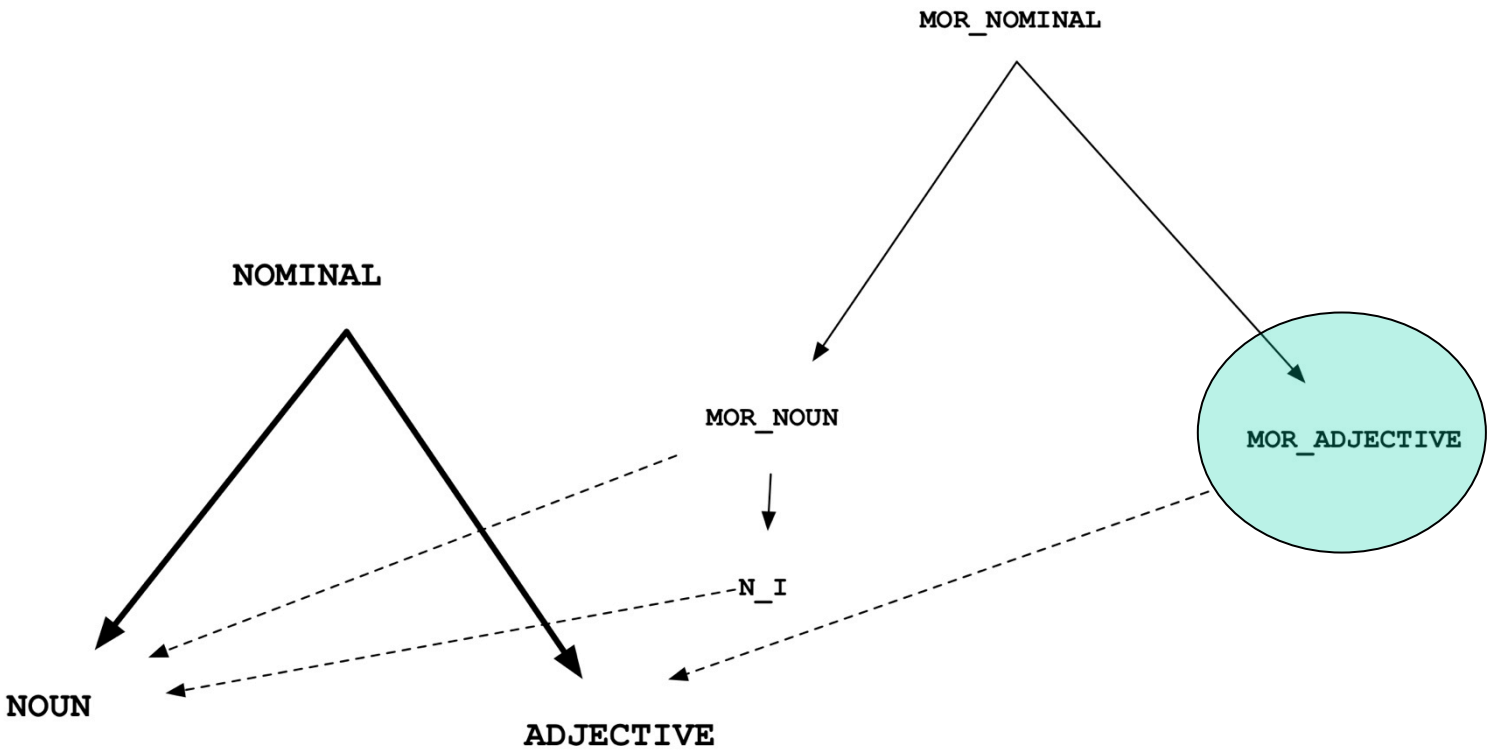
- *-ŋku* plural marker unique to adjectives

Udihe Proprietives

a. xulaligi waptä-xi koŋzo
red lid-PROPR box
‘box with a red lid’ (Nikolaeva 2008: 970)

b. ic’a sita-xi a:nta
small child-PROPR woman
‘woman with a small child’
(Nikolaeva 2008: 977)

Udihe Nouns and Adjectives



Udihe Nouns and Adjectives

- Little evidence for a separate morphological hierarchy for Udihe nominals
- There is morphology which is unique to each part of speech
- Stem hierarchy required
- Cross-classifies nouns and adjectives (historically at least)

Udihe Nouns and Adjectives

- Noun paradigm includes rules such as:

```
<mor word prop_true> ==
            "<stem 1>" -xi "<mor suffix>"

<mor word pl> ==
          "<stem 2>" -ziga "<mor suffix>"
```

Udihe Nouns and Adjectives

```
NP_A:
     <syn> == DEFAULT_VALUES
     <syn form> == <syn head form [1]>
     <syn head index> == [1]
     <syn head> == HEAD
     <syn head lex [1]> == "<n1>".
```

Udihe Nouns and Adjectives

```
NP_B:
     <> == NP_A
     <syn form> == <syn mod form [2]> NP_A
     <syn mod index [2]> == [2]
     <syn mod> == MOD
     <syn mod lex [2]> == "<a1>".
```

Udihe Nouns and Adjectives

```
NP_C:
    <> == NP_B
    <syn head index [2]> == <syn mod index [2]>
    <syn mod lex [2]> == "<n2>".
```

Udihe Nouns and Adjectives

```
HEAD:
    <> == UNDEF
    <syn head form> ==
            "<syn head lex "<syn head index>"
            word "<syn head feat>" >"
    <syn head feat> ==
            <syn "<syn head lex "<syn head index>"
            syn cat>">
    <syn noun> == "<syn num>"
                  "<syn case>"
                  "<syn poss>".
```

Udihe Nouns and Adjectives

```
HEAD:
    <> == UNDEF
    <syn head form> ==
            "<syn head lex "<syn head index>"
            word "<syn head feat>" >"
    <syn head feat> ==
            <syn "<syn head lex "<syn head index>"
            syn cat>">
    <syn noun> == "<syn num>"
                  "<syn case>"
                  "<syn poss>".
```

Udihe Nouns and Adjectives

```
MOD:
     <> == UNDEF
     <syn mod form> ==
              "<syn  mod lex "<syn mod index>"
              word "<syn mod feat>" >"
     <syn mod feat> == <syn "<syn  mod lex
             "<syn mod index>" syn cat>" >
     <syn noun> == "<syn prop>"
     <syn adj> == "<syn num "<syn head index>" >".
```

Udihe Nouns and Adjectives

EXAMPLE1:<syn form> = aanta -ziga -du.

EXAMPLE1:<translation> = to the women.

EXAMPLE2:<syn form> = ic_'a -ŋku aanta -ziga -du.

EXAMPLE2:<translation> = to the small women.

EXAMPLE3:<syn form> = sita -xi aanta -ziga.

EXAMPLE3:<translation> = women with child.

EXAMPLE4:<syn form> = ic_'a sita -xi aanta.

EXAMPLE4:<translation> = woman with a small child.

EXAMPLE5:<syn form> = ic_'a -ŋku sita -xi aanta. [?]

EXAMPLE5:<translation> = woman with small children.

SUMMARY

- Varying degrees of morphological autonomy
- Clearcut cases where morphological (i.e. inflectional) hierarchies are/are not required
- Default classes in morphological classes correspond to parts of speech classification
- Hierarchies of stem classes are also required

CONCLUSION

- Default classes in hierarchy of stems are perhaps more likely to cross-cut parts of speech

- Examples such as the Udihe proprietive represent the opposite type of mismatch, where the syntax doesn't match exactly with the lexemic hierarchy

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