

Governed cases vs semantic cases - a view from morphology

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This forms part of a collaborative project on possession/modification with Irina Nikolaeva

Overview

- 1 Pre-preamble: the possession-modification connection
- 2 Preamble: 'Contextual' vs 'inherent' inflection
- 3 Lexical representations and lexical relatedness
- 4 Selkup denominal adjective transpositions
- 5 GPFM analysis of Selkup
- 6 Selkup and the MODIFIER GF
- 7 Summary and Conclusions

Outline

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Pre-preamble

Possessive construction

Head
theory

Dependent
Chomsky

Pre-preamble

the theory of Chomsky
Chomsky.GEN his-theory
...
Chomsky-ADJ-AGR theory
of *Chomskyan theory*
(Possessive adjective)

Pre-preamble

modification-by-noun

Head
theory

Dependent
morphology

Pre-preamble

the theory of morphology
morphology.GEN its-theory]
...
morphological theory
(Relational adjective)

Pre-preamble

This means that there's a close relation between the notions of

'nominal dependent of a noun head' and

'attributive modifier of noun head'

Some languages even use the same devices to express each type of dependency

(e.g. Persian ezâfe)

Pre-preamble

Note: inalienably possessed nouns (arguably) have an argument structure

Masha's hand

Masha's daughter

(In some languages such nouns are obligatorily possessed, e.g. Athabaskan)

Pre-preamble

Such (subcategorized? obligatory?) complements to nouns can be realized by possessive adjectives:

Maš-in-a ruka

Maš-in-a doč'

[Russian]

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Contextual/inherent inflection

- Lexemes inflect for coherent sets of properties: tense, aspect, . . . , number, case, . . .
- Some properties are mandated by the needs of syntax: government/agreement
- Some properties are under speaker choice and are determined by syntactic context to a lesser degree (or not at all)

Contextual/inherent inflection

Terminology (Booij)

- First set of properties: 'contextual inflection'

These are determined by syntactic context

- Second set of properties: 'inherent inflection'

These are inherent to the lexeme itself

Contextual inflection

Examples of contextual inflection (following Booij):

- adjective - noun gender agreement
- subject-verb agreement
- (structural) case marking (e.g. German nom/acc/dat)
- Construct State forms (not in Booij)

Contextual inflection

Construct State in DhoLuo (Nilotic)

ot 'house' od winyo 'a bird's nest'

udi 'houses' ut winyi 'birds' nests'

Inherent inflection

Examples of inherent inflection:

- plural number on nouns
- past tense on verbs

Inherent inflection

Inherent inflection reflects a (potential) speaker choice

Contextual inflection doesn't permit speaker choice (usually!)

Inherent inflection

Implications:

Inherent inflection is meaningful

(otherwise it would have no function)

But how do we capture the idea 'meaningful inflection' without making it look like derivation?

See later ('GPFM analysis')

Problems with 'contextual/inherent' distinction

- Some grammatical properties seem to belong to both types
E.g. 'pro-drop' problem
- Some values of a given property may be contextual (e.g. 'structural' cases) and others inherent (i.e. 'semantic' cases)

Problems with 'contextual/inherent' distinction

- A given case (e.g. dative-allative) may itself be either 'structural' functions or 'semantic' functions
- Choice of a contextual inflection may itself be meaningful, e.g. differential subject/object marking to signal agency, animacy etc.

Problems with 'contextual/inherent' distinction

Additional problem:

how do we distinguish between (lexically etc. restricted) inherent inflection and (completely regular, productive, transparent) derivational morphology?

In this talk I will argue that these questions are related to a more general problem - lexical relatedness

Modification

Parallel problem:

Attributive modification -

This is a kind of grammatical function/relation, but how is it related to government/subcategorization?

Assumption: there is some GF, say, MOD

Modification

Attributive modification canonically expressed by Property denoting lexeme, i.e. Adjective

But also expressed by:

- verbs: 'participle'
- nouns: 'relational adjective'

The solution

We need to look at these relationships in terms of the general problem of lexical relatedness

There are many sorts of lexical relatedness

To understand these we need to factorize lexical properties

Lexemes can be related to each other along (almost) any combination or permutation of these properties

Overview of talk

- Summary of assumptions about lexical representations
- Generalized characterization of 'lexical relatedness'
- Summary of nominal morphology of Selkup, esp. adjectival 'representations' of nouns
- Analysis of lexical relatedness in Selkup
- The MODIFIER function and Selkup

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Lexical representations

Assume a lexical representation is at least four-dimensional, e.g. for Selkup noun *qok* 'leader' (bound stem form *qo:-*)

FORM	qo:-
SYN	N
SEM	[LEADER(x)]
LI	LEADER

Lexical representations

The LI is the Lexemic Index, an arbitrary label (integer) unique to each lexeme

Think of this as a key in a database

Generalizing 'lexical relatedness'

We consider how one {FORM, SYN, SEM, LI} entry might be systematically related to another

Relatedness is defined in terms of correspondences between corresponding attributes:

- FORM1 \Leftrightarrow FORM2
- SYN1 \Leftrightarrow SYN2
- SEM1 \Leftrightarrow SEM2

I'll also argue that relatedness can involve the LI:

- LI1 \Leftrightarrow LI2

Generalizing 'lexical relatedness'

In principle, any attribute of a lexical entry may map non-trivially to the corresponding attribute

This gives rise to different types of lexical relatedness (not all of which have traditional names)

We define such relatedness using the 'Generalized Paradigm Function' (GPF)

Generalizing 'lexical relatedness'

The GPF consists of four functions which map each of the attributes of a lexeme to corresponding attributes of a (possibly different) lexeme

f_{form}

f_{syn}

f_{sem}

f_{li}

We only have a different lexeme if the GPF defines a distinct Lexemic Index for the output

(Canonical) inflection and (canonical) derivation

'Pure' inflection non-trivially affects only the FORM attribute, by specifying inflected word forms

The SYN, SEM, LI attributes are retained unchanged

This can be coded using Stump's idea of an Identity Function Default IFD:

'By default, the component f of the GPF is the identity function ("do nothing")

(Canonical) inflection and (canonical) derivation

E.g. for 3sg of English verbs, GPF =

$f_{form}(\langle \text{VERB}, \{3\text{sg}\} \rangle) = X\text{-s}$ ('X' = VERB's root)

$f_{syn}(\langle \text{VERB}, \{3\text{sg}\} \rangle) = \text{identity function}$

$f_{sem}(\langle \text{VERB}, \{3\text{sg}\} \rangle) = \text{identity function}$

$f_{li}(\langle \text{VERB}, \{3\text{sg}\} \rangle) = \text{identity function}$

Generalizing 'lexical relatedness'

(Regular, paradigmatic, canonical) derivation:

GPF non-trivially maps all four base representations to distinct outputs, including an enriched semantic representation

This is one way of conceptualising Aronoff's (1976) word formation rule (wfr)

Generalizing 'lexical relatedness'

GPF for SubjNom process by *-er* suffixation, e.g. *writer* (preliminary formulation):

$f_{form}(\text{WRITE}, \{\text{SN}\}) = \text{Stem0}(\text{WRITE}) \oplus \text{er}$
 $= \text{MORCAT} = \text{N}$

$f_{syn}(\langle \text{WRITE}, \{\text{SN}\} \rangle) = \text{SYNCAT} = \text{N}$

$f_{sem}(\langle \text{WRITE}, \{\text{SN}\} \rangle) = [\text{Thing} \lambda x \text{PERSON}(x) \wedge \text{WRITE}(x, \dots)]$

$f_{li}(\langle \text{WRITE}, \{\text{SN}\} \rangle) = \text{WRITER}$

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Selkup noun morphology

Selkup: Uralic language of Samoyedic group

Nouns have three suffix position slots for:

- number {singular, dual, plural and collective}
- possessor agreement {person/number}
- case {nom, acc, gen, instr, caritive, translative, coordinative, dative-allative, illative, locative, elative, prolative, vocative}

Selkup noun morphology

The three features are paradigmatic,

i.e. the values of [Number], [PossAgr], [Case] are mutually exclusive (Kuznecova et al 1980:210)

Sample fragment of paradigm for *qok* 'leader' (ignoring Collective number forms)

Selkup: unpossessed noun inflection

	Sg	Du	Pl
Nom	qok	qoq-qi	qo:-t
Gen	qo:-n	qoq-qi-n	qo:-ti-n
Acc	qo:-m	qoq-qi-m	qo:-ti-m
Instr	qok-sæ	qoq-qi-sæ	qo:-s-sæ
Car	qok-kɔ:lɪk	qoq-qi-kɔ:lɪk	qo:-t-kɔ:lɪk
Trans	qo:-tqo	qoq-qi-tqo	qo:-ti-tqo
Coord	qo:-ššak	qoq-qi-ššak	qo:-ti-ššak
Dat-All	qo:-nɪk	qoq-qi-tkini	qo:-ti-tkini
Illat	qok-ti	qoq-qi-tkini	qo:-ti-tkini
Prol	qoŋ-mɪn	qoq-qi-mɪn	qo:-n-mɪn
Voc	qoŋ-ə:	qoq-qə:	qo:-n-ə:

Selkup possessor agreement

Paradigm fragment for 1sg possessed form 'my leader'

Selkup: 1sg possessed noun inflection

	Sg	Du	Pl
Nom	qoŋmi	qoqqim	qo:im
Gen	qoŋni	qoqqini	qo:in
Acc	qoŋmi	qoqqimi	qo:imi
Instr	qoŋnisæ	qoqqinisæ	qo:inisæ
Car	qoŋniko:lik	qoqqiniko:lik	qo:iniko:lik
Trans	qoŋnō(qo)	qoqqinō(qo)	qo:inō(qo)
Coord	qoŋnišak	qoqqinišak	qo:inišak
Dat-All	qoŋnini	qoqqinini	qo:inini
Illat	qoqqæk	qoqqiqæk	qo:iqæk
Prol	qoŋmæk	qoqqimæk	qo:imæk

Selkup: unpossessed noun inflection

	Sg	Du	Pl
Nom	qok	qoq-qı	qo:-t
Gen	qo:-n	qoq-qı-n	qo:-ti-n
Acc	qo:-m	qoq-qı-m	qo:-ti-m
Instr	qok-sæ	qoq-qı-sæ	qo:-s-sæ
Car	qok-ko:lik	qoq-qı-ko:lik	qo:-t-ko:lik
Trans	qo:-tqo	qoq-qı-tqo	qo:-ti-tqo
Coord	qo:-ššak	qoq-qı-ššak	qo:-ti-ššak
Dat-All	qo:-nik	qoq-qı-tkinı	qo:-ti-tkinı
Illat	qok-ti	qoq-qı-tkinı	qo:-ti-tkinı
Prol	qoŋ-mın	qoq-qı-mın	qo:-n-mın
Voc	qoŋ-ə:	qoq-qə:	qo:-n-ə:

Selkup: 1sg possessed noun inflection

	Sg	Du	Pl
Nom	qoŋmi	qoqqim	qo:im
Gen	qoŋni	qoqqini	qo:in
Acc	qoŋmi	qoqqimi	qo:imi
Instr	qoŋnisæ	qoqqinisæ	qo:inisæ
Car	qoŋniko:lik	qoqqiniko:lik	qo:iniko:lik
Trans	qoŋnō(qo)	qoqqinō(qo)	qo:inō(qo)
Coord	qoŋnišak	qoqqinišak	qo:inišak
Dat-All	qoŋnini	qoqqinini	qo:inini
Illat	qoqqæk	qoqqiqæk	qo:iqæk
Prol	qoŋmæk	qoqqimæk	qo:imæk

Selkup: denominal adjectives

Kuznecova et al: Adjectival representation of nouns

- relational adjective ('pure transposition')
- similitudinal adjective ('like N')
- locational adjective ('situated at N')

Selkup: denominal adjectives

From *qok* 'leader'

(Pure) relational adjective ('otnositel'naja forma')

qōl' 'pertaining to a/the leader'

Meaning-preserving categorial transposition (nothing else!)

Selkup: denominal adjectives

Similitudinal adjective ('koordinativnaja ad'jektivnaja forma')

qōššal' 'corresponding to the leader, identical to the leader in size or some other property'

Locational adjective ('lokativnaja ad'jektivnaja forma')

mōqil' 'situated in a house' (> *mō:t* 'house', Loc.Sg. *mō:tqin*)

Meaning-bearing categorial transposition (cf. inherent inflection)

Selkup: denominal adjectives

Possessed forms of

pure relational adjective
qōl'

similitudinal adjective
qōššal'

Selkup: case-marked/possessed denominal adjectives

Px	Relational adj	Similitudinal adj
None	<i>qōl'</i>	<i>qōššal'</i>
1sg	<i>qoŋnił'</i> 'of my leader'	<i>qoŋnišal'</i> 'like my leader'
2sg	<i>qoktił'</i>	<i>qoktišal'</i>
3sg	<i>qoktił'</i>	<i>qoktišal'</i>
1du	<i>qoŋnił'</i>	<i>qoŋnišal'</i>
2-3du	<i>qoktił'</i>	<i>qoktišal'</i>
1pl	<i>qoŋnitił'</i>	<i>qoŋniššal'</i>
2-3pl	<i>qoktitił'</i>	<i>qoktiššal'</i>

Selkup: case-marked/possessed denominal adjectives

Similar forms found with the locational adjectives

qaql̄i 'sledge' ⇒

qaql̄ō-q̄in (locative sg.) 'in a sledge'

qaql̄ō-q̄i-l' 'located in a sledge'

qaql̄ō-q̄iṅt̄i-l' 'located in their(2) sledge' etc.

Noun or adjective?

Adjectival representation of noun retains some noun properties in the syntax

The noun base can be modified by another attribute

Noun or adjective?

po: 'wood'

tol'̄i 'ski'

m̄it̄in 'grease'

Noun or adjective?

[po:]-l' [tol'̄i]-l' m̄it̄in

Noun or adjective?

mat [pɔ:ra]-ni-ʃalʹ qum
1SG.GEN size-L person

'person of my size' ("a my size-like person")

Noun or adjective?

mat [pɔ:ra]-ni-ʃalʹ qum

Selkup: summary

- Relational adjective/similitudinal/locative adjective suffixes are part of the inflectional paradigm (with all case suffixes and possessor agreement forms)
- Similitudinal/locative adjectival 'representations' involve addition of semantic predicate *to inflected forms*
- Noun base still 'visible' to attributive modifiers

Selkup: derivational denominal adjectives

Comparison with Proprietary/Privative adjectives:

Proprietary: N-similʹ HAVING(NOUN)

ys- 'water'

ys-similʹ torqɨ
water-PROPR pot
'pot with water'

Selkup: derivational denominal adjectives

Privative: N-kitił' LACKING(NOUN)

ima- 'wife'

ima-kitił' tə:tipi
wife-PRIV shaman
'an unmarried shaman'

Selkup: derivational denominal adjectives

Similar to relational, similitudinal, locational adjectives but closer to canonical derived forms

Can't be formed from nouns inflected for possessor agreement

Noun base can't be modified by attributive modifier

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GPFM analysis of Selkup

GPF(LEADER, {<pl, 2plPx, acc>})

	maps	to	
FORM:	qo:-	qoqqimɨ	
SYN:	N	N	(by IFD)
SEM:	[LEADER(x)]	[LEADER(x)]	(by IFD)
LI:	LEADER	LEADER	(by IFD)

GPFM analysis of Selkup

For inherent inflection

GPF induces a non-trivial mapping for FORM and SEM

but SYN and LI remain unchanged

E.g. for caritive inherent case 'without N'

(Recall: IFD = 'Identity Function Default', i.e. 'by default, do nothing')

GPFM analysis of Selkup

GPF(LEADER, {<pl, 2plPx, caritive>})

	maps	to	
FORM:	qo:-	qokkɔ:lɨk	
SYN:	N	N	(by IFD)
SEM:	[LEADER(x)]	WITHOUT(y, LEADER(x))*	
LI:	LEADER	LEADER	(by IFD)

*or maybe something like:

$[\lambda x, \neg \exists y, [\text{LEADER}(y) \wedge \text{WITH}(x,y)]]$

GPFM analysis of Selkup

Selkup is unusual because it also turns the noun into a (kind of) adjective

In other words the similitudinal adjective construction is strictly speaking a combination of transposition and inherent inflection

GPFM analysis of Selkup

GPF(LEADER, {<sg, 1sg, Simil>})

	maps	to	
FORM:	qo:-	qo:ŋnɨl'	
SYN:	N	A/N	
SEM:	[LEADER(x)]	[SIMILAR[y,[LEADER(x)]]*]	
LI:	LEADER	LEADER	(by IFD)

* $[\lambda x, \neg \exists y, [\text{LEADER}(y) \wedge \text{SIM}(x,y)]]$

GPFM analysis of Selkup

Note: we still need an analysis of the adjective/noun mixed syntactic category

(See Spencer 1999, in preparation for suggestions)

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MOD

Cinderella grammatical function: attributive modifier of head noun

Canonically realized by lexeme denoting Property
(‘tall’, ‘blue’, ‘good’, ...)

MOD

Non-canonical type: modification-by-noun

Examples:

- N N compound (*preposition phrase*)
- Poss construction (*the preposition's etymology*)
- Relational adjective (*prepositional phrase*)

MOD

'Pure' relational adjective is transposition

i.e. the adjectival form of a noun, but with no added semantic content

So the GF realized by the relational adjective transposition is just MOD

MOD

Relational adjectives are different from true derived denominal adjectives

Contrast Selkup 'adjective representation of noun' with Propriative/Privative types

Propriative/Privative - adjectives by virtue of (derived) semantic representation (denoting Properties)

These are distinct lexemes from base noun lexeme

MOD

Relational adjective (e.g. qol') -

Rather like inflected form of noun

In particular, the relational adjective is *not* a distinct lexeme

MOD

But Selkup also has transpositions which *do* add semantic content

Similitudinal/locational adjectival representation of noun is therefore a combination of

- transposition
- inherent (meaning-bearing) inflection

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Types of lexical relatedness

Summary of types of lexical relatedness including:

- Contextual inflection (meaning-preserving inflection)
- Inherent inflection (meaning changing inflection) -semantic cases
- Meaning-preserving transpositions -deverbal participles, relational adjectives
- Meaning-changing transpositions -similitudinal/locational adjectives
- Meaning-changing derivation, creating new lexeme -Propriative/Privative adjectives

Conclusions

- Selkup has (standard) N \Rightarrow A derivation (with added semantic predicate)
- Selkup has inherent N inflection (with added semantic predicate, e.g. WITHOUT(N))
- Selkup has N \Rightarrow A transpositions
- 'Pure' relational adjectives are 'pure' transpositions, create noun form which can function as attributive modifier

Conclusions

- Sim/Loc adjectives are transpositions + meaning change
- All three transpositions are parts of *inflectional paradigm*
- Therefore, for Selkup the MOD function is realized by an inflectional category