Toward a typology of the ezafe: the Iranian ezafe as a type-raising functor

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Introduction

Structure

- The ezafe (modification marking)
  - The ezafe is an affix (canonically)
- Categorial Grammar (CG)
- The ezafe in CG
- The typology of the ezafe
- Synchronic typology ~ diachronic trajectory

The Ezafe

The basics

Attributive ezafe

(1) dâneshju-ye zerang
student-ez clever
New Persian (S): ‘the clever student’ (Thackston, 1993, 12)

Genitival ezafe

(2) beg-ê diyarbekır-i
chief-ez.m.sg./gen DiyarBekir-sg.obl
Zazaki: ‘the chief of Diyarbekir’ (Paul (1998) apud Berz & Malmîsanij (1951), 51.24)

The ezafe is an affix

It competes with other morphemes for realization I

Kurmancî

(3) jin-ê pirtûk xwend
woman-obl.sg.f book.dir.sg.f read.pst.3sg
“The woman read the book.”

(4) jin-a jîr pirtûk xwend
woman-ez.sg.f(.obl) smart book.dir.sg.f read.pst.3sg
“The smart woman read the book.”

(5) jin-a jîr pirtûk-ê di-xwîn-e
woman-ez.sg.f smart book-obl.sg.f ipfv-read.prs-3sg
“The smart woman reads the book.”

It competes with other morphemes for realization II

Paweyane

(6) hær-î qawæ lwa baɣdaḍ
donkey.dir.sg.m-ez./att brown go.pst.3sg Baghdad
The brown donkey went to Baghdad.

(7) hær-ê lwê baɣdaḍ
donkey-dir.pl.m go.pst.3sg Baghdad
The donkeys went to Baghdad.

(8) hær-ê qawê lwê
donkey-dir.pl.m(.ez./att) browndir.pl go.pst.3sg
baɣdaḍ
Baghdad
The brown donkeys went to Baghdad.

It features cumulative exponense

Southern Zazaki

(9)
laj-o gırd ~
boy-dir.sg.m.ez/att big.sir.sg.m ~
‘the big boy’ ~

(10)
laj-ê gırd-i ~
boy-obl.sg.m.ez(/att) big-obl.sg.m ~
‘the big boy’ ~

(11)
laj-dê gırd-i, etc.
boy-gen.sg.m.ez(/att) big-obl.sg.m, etc.
‘the big boy,’ etc.

Categorial Grammar

AB grammar

a. $$\frac{\text{a};\ \mathscr{F};\ A/B \qquad \text{b};\ \mathscr{G};\ B}{\text{a} \circ \text{b};\ \mathscr{F}(\mathscr{G});\ A}\ /\text{E}$$

b. $$\frac{\text{a};\ \mathscr{F};\ B\backslash A \qquad \text{b};\ \mathscr{G};\ B}{\text{b} \circ \text{a};\ \mathscr{F}(\mathscr{G});\ A}\ \backslash\text{E}$$

English adjectives

$$\dfrac{\dfrac{\dfrac{book;}{book';} \qquad \dfrac{red;}{\lambda P \lambda x.red'(x) \wedge P(x);}}{\dfrac{N \qquad N/N}{red \circ book;}\ /\mathrm{E}} \qquad \dfrac{\dfrac{the;}{\lambda P.\iota P;}}{\dfrac{N \qquad NP/N}{the \circ red \circ book;\ \iota(\lambda x.red(x) \wedge book(x));\ NP}\ /\mathrm{E}}}{\lambda x.red'(x) \wedge book'(x);}$$

CG is lexicalist

- The syntactic functor (and corresponding semantic functor) are part of the lexical entry.
- Consequences:
  - Valence-changing derivations integrate syntactic categories into the paradigm: The causative of an $NP\backslash S$ is an $NP\backslash(NP\backslash S)$.
  - individual lexemes can have idiosyncratic combinatorics without issue:

    kuřî çak ‘(a) good boy’ (N $<$ Adj) vs.
    çaktirîn kuřêk ‘(the) best boy’ (Adj $<$ N)

The ezafe in CG

Accounting for the ezafe in CG I

- Nouns:
  - Substantive: $(\pi;\ \mathbb{Q}P;\ NP)$

    (12) Kuřêk hat. ‘A boy came.’

  - Possessive: $(\pi;\ \lambda x.x \wedge \mathscr{R}(x)(QP);\ NP\backslash NP)$

    (13) topî kuřêk ‘a boy’s ball’

  - Attributive: $(\pi;\ \lambda x.x \wedge P(x);\ NP\backslash NP)$

    (14) minaɬêkî kuř ‘a boy child’

Accounting for the ezafe in CG II

- Adjective = Noun (in New Western Iranian)
  - Substantive: $(\pi;\ \mathbb{Q}P;\ NP)$

    (15) başêk hat. 'A good (one) came.'

  - Possessive: $(\pi;\ \lambda x.x \wedge \mathcal{R}(x)(QP);\ NP\backslash NP)$

    (16) topî başêk a good (one)'s ball.

  - Attributive: $(\pi;\ \lambda x.x \wedge P(x);\ NP\backslash NP)$

    (17) minaɬêkî baş 'a good child'

Accounting for the ezafe in CG III

- Analytical goals:
  - 1 (inflected form) to 1 (meaning broadly)
  - The marked form should carry the meaning.

    $*$ $\dfrac{\text{topî}; \sigma; NP_{EZ} \quad \text{kuřêk}; \sigma; NP_{EZ}\backslash NP}{\text{topî} \bullet \text{kuřêk}; \sigma; NP}$

    ✓ $\dfrac{\text{topî}; \sigma; NP/NP \quad \text{kuřêk}; \sigma; NP}{\text{topî} \bullet \text{kuřêk}; \sigma; NP}$
  - The syntax and semantics must be in lockstep (a feature of CG)

A partial paradigm of Soranî

kuřeke;	$\iota(\lambda x.boy(x))$;	NP	‘boy.def.sg’
kuřeke wazî eka ‘the boy is playing’			
kuřêk;	$\exists(\lambda x.boy(x))$;	NP	‘boy.indf.sg’
kuřêk wazî eka ‘a boy is playing’			
kuř;	$\cap(\lambda x.boy(x))$;	NP	‘boy.abs’
kuř wazî eka ‘boys play (generally)’			

Generic = Absolute

(18) minaɬêkî kuř ‘a boy child’

(19) minaɬêkî kuř ‘a child of boys
(i.e. a doll that is played with by boys)’

(20) kuř wazî eka ‘boys play (generally)’

The ad-attributive ezafe

$$\dfrac{\dfrac{\dfrac{\dfrac{\dfrac{\text{kuřekeî};\quad \lambda y[\iota(\lambda x[boy(x) \wedge^{\cup} y(x)])];}{NP/NP} \quad \dfrac{\text{baş};\quad {}^{\cap}(\lambda x_2.good(x_2));}{NP}\,/\text{E}}{\text{kuřekeî} \circ \text{baş};}}{\lambda y[\iota(\lambda x[boy(x) \wedge^{\cup} y(x)])]({}^{\cap}[\lambda x_2[good(x_2)]]);}}{\iota(\lambda x[boy(x) \wedge^{\cup\cap} (\lambda x_2.good(x_2)(x)]);}\,\lambda\text{-conv.}}{\iota(\lambda x[boy(x) \wedge \lambda x_2.good(x_2)(x)]);}\,\cup\cap\text{-canc.}}{\iota(\lambda x[boy(x) \wedge good(x)]);}\,\lambda\text{-conv.}$$

$$NP$$

The typology of the ezafe

Standard ezafat (Soranî, Hewramî, col. New Persian)

Canonical Ezafat	Prosody	Syntax	Semantics
Possessive Construct	N-ez;	NP/NP;	$\lambda y[\mathbb{Q}(\lambda x[P_N(x) \wedge \mathcal{R}(x)(y)])]$
Attributive Construct	N-ez;	NP/NP;	$\lambda y[\mathbb{Q}(\lambda x[P_N(x) \wedge^{\cup} y(x)])]$
Definite Ezafat			
Definite Att. Construct	N-ez;	NP/NP;	$\lambda y[let\langle \mathbb{Q}, P_{Adj}\rangle := y\ in\ \mathbb{Q}(\lambda x[P_N(x) \wedge P_{Adj}(x)])]$

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(21) æsp-î zil ‘big horse’ (Holmberg & Odden, 2008, ex.1 mod.)

(22) æsp-û jæn-ækæî ‘the woman’s horse’ (Holmberg & Odden, 2008, ex.29 mod.)

(23) æsp-æ zil-ækæ ‘the horse’ (Holmberg & Odden, 2008, ex.6)

Secondary ezafat

Canonical Ezafat	Prosody	Syntax	Semantics
Possessive Construct	N-ez;	NP/NP;	$\lambda y[\mathbb{Q}(\lambda x[P_N(x) \wedge \mathcal{R}(x)(y)])]$
Attributive Construct	N-ez;	NP/NP;	$\lambda y[\mathbb{Q}(\lambda x[P_N(x) \wedge^{\cup} y(x)])]$
Secondary Ezafat			
Att. Floating Construct	(=)ez;	$NP\backslash(NP/NP)$;	$\lambda y[let\langle \mathbb{Q}, P\rangle := y\ in\ \lambda z[\mathbb{Q}(\lambda x[P \wedge^{\cup} z)]]]$
Pos. Floating Construct	(=)ez;	$NP\backslash(NP/NP)$;	$\lambda y[let\langle \mathbb{Q}, P\rangle := y\ in\ \lambda z[\mathbb{Q}(\lambda x[P \wedge \mathcal{R}(x)(z))]]]$

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(24) keç-a şivan-ê baş
girl-f.sg.ez shepherd-m.sg.ez good
Kurmancî: ‘the [good shepherd]’s daughter’

(25) keç-a şivan=a baş
girl-f.sg.ez shepherd=f.sg.ez good
Kurmancî: ‘the shepherd’s [good daughter].’

-a $<$ *-ākā-ī; and -ê $<$ *-aka-ī

Secondary ezafat

(26) kiç-a diy-a baş
girl-f.sg.ez mother-f.sg.ez good
Kurmancî: ‘the [good mother]’s daughter’

(27) kiç-a diy-ê=ya baş
girl-f.sg.ez mother=f.sg.ez good
Kurmancî: ‘the mother’s [good daughter].’

Reverse ezafat

Reverse Ezafat			
Att. Anti-construct	Adj-attr;	NP/NP;	$\lambda y[let\langle \mathbb{Q}, P_N\rangle := y\ in\ \mathbb{Q}(\lambda x[P_N(x) \wedge P_{Adj}(x)])]$
Possessive State (gen)	N-gen;	NP/NP;	$\lambda y[let\langle \mathbb{Q}, P\rangle := y\ in\ \mathbb{Q}(\lambda x[P(x) \wedge \mathcal{R}(x)(\iota(P_N))])]$

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(28) mard-ēn zāg-ē
man-attr child-ind
T Balochi: ‘a man child’ (Axenov, 2006, ex.275 (translation altered))

(29) mard-ay dil
man-gen heart
T Balochi: ‘the man’s heart’ (Axenov, 2006, ex.746)

-ēn < *-aina; and -ay < ?*asya (or perhaps *-ag + *īg)

Synchronic typology ~ Diachronic trajectory

All ezafat

Reverse Ezafat			
Att. Anti-construct	Adj-attr;	NP/NP;	$\lambda y[let\langle \mathbb{Q}, P_N\rangle := y\ in\ \mathbb{Q}(\lambda x[P_N(x) \wedge P_{Adj}(x)])]$
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		↓	
Secondary Ezafat			
Att. Floating Construct	(=)ez;	$NP\backslash(NP/NP)$;	$\lambda y[let\langle \mathbb{Q}, P\rangle := y\ in\ \lambda z[\mathbb{Q}(\lambda x[P \wedge^{\cup} z)]]]$
Pos. Floating Construct	(=)ez;	$NP\backslash(NP/NP)$;	$\lambda y[let\langle \mathbb{Q}, P\rangle := y\ in\ \lambda z[\mathbb{Q}(\lambda x[P \wedge \mathcal{R}(x)(z))]]]$

Thoughts and conclusions

- The ezafe is a derivational morpheme that converts a noun to an entity that requires a noun to be well formed.
  - This allows a 1 to 1 correspondence between inflected form and syntactic/semantic functor
  - The relationship between proposed functors mirrors what is known about the diachronic trajectory
- fallout from this approach
  - a CG approach that stores the syntactic functor in the lexicon suggests that morphology, the organizing principle of the lexicon, is in charge of the syntax
  - There may be the grounds for reimagining diachronic syntax

Zor Supastan ekem ‘Thank y’all much!’

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