

Ezafe, PP and the Nature of Nominalization

Richard Larson (Stony Brook University) and Vida Samian (CalState Fresno)

Chomsky (1970) showed that by viewing structural form and operations at a level of generality greater than was current at the time, it was possible to express the clear parallelism in S – NP pairs like (1-2) in a deeper, more revealing way:

- (1) a. The committee elected John.
b. John was elected by the committee.
- (2) a. The committee's election of John.
b. John's election by the committee.

Capturing the relation between (1a-2a) required positing an abstract, cross-categorical syntactic shape - X-bar theory. Capturing the relation between (1b-2b) required abandoning traditional Passive for a far more general operation - NP Preposing.

Here we pursue a similar theme. We argue the English VP/NP structures (3a-d) have exact counterparts in (Iranian) Persian PP/NP structures (4a-d), where P₁-P₃ are three different classes of iPersian Ps and where -Ez is the so-called "Ezafe" morpheme.

- (3) a. John [VP destroy the evidence] "Pure VP"
b. John -'s [NP destroying the evidence] Nominalized VP
c. John -'s [NP destroying of the evidence] Nominalized V
d. John -'s [NP destruction of the evidence] Deverbal N
- (4) a. NP [PP P₁ NP] "Pure PP"
b. NP -Ez [NP P₂ NP] Nominalized PP
c. NP -Ez [NP P₂ -Ez NP] Nominalized P
d. NP -Ez [NP P₃ -Ez NP] "Deprepositional" N

In short, we argue that nominalization occurs with both of the lexical categories identified by Chomsky (1970) and Jackendoff (1977) as [-N] (5):

(5)

	[+N]	[-N]	
[+V]	A	V	"Syntactically Nominalizable Categories"
[-V]	N	P	

As we show, capturing this relationship entails:

- Establishing a common syntactic function for English -'s/of and iPersian -Ez (Samian 1983,1994; Kirimi and Brame 1986/2012; Samian and Larson 2018)
- Positing a shared cross-categorical structure for VP-PP (Jackendoff 1973; Svenonius 2003).

- Abandoning traditional Nominalization for a more general "split-feature" view of category specification.

We begin with the iPersian Ezafe construction.

1.0 The Ezafe Phenomenon

"Ezafe" refers to a morpheme found in Modern Persian (iPersian, aPersian, tPersian), Balochi, Kurdish (Sorani, Kurmanji), Zazaki (aka Dimili) and Hawrami (aka Gorani). N, A, Q and P heads precede their complements & modifiers. In certain cases, Ezafe (-EZ) appears between them, realized on the preceding element. (6) shows the basic patterns:

- (6) a. N -EZ NP/AP/PP/nonfinite CP
b. A -EZ NP
c. Q -EZ NP (for some Qs)
d. P -EZ NP (for some Ps)

iPersian exhibits Ezafe in its simplest form; the only variation is phonological (e/ye).

(7) Modifiers & complements of Ns

- a. del-e sang (N-EZ NP)
heart-EZ stone 'stone heart'
- b. manzel-e John (N-EZ NP)
house-EZ John 'John's house'
- c. shahr-e Tehran (N-EZ NP)
city-EZ Tehran 'Tehran city'
- d. Ali-e Ghozati (N-EZ NP)
Ali-EZ Ghozati 'Ali Ghozati'
- e. tæxrib-e shæhr (N-EZ NP)
destruction-EZ city 'destruction of the city'
- f. xordan-e âb (N-EZ NP)
drinking-EZ water 'drinking of water'
- g. forunshandé-ye ketâb (N-EZ NP)
seller-EZ books 'seller of books'
- h. otâq-e besyar kucik (N-EZ AP)
room-EZ very small 'very small room'
- i. divar-e jelo Ali (N-EZ PP)
wall-EZ in-front-of Ali 'wall in front of Ali'
- j. ketâb-e sabz-e jâleb (N-EZ AP-EZ AP)
book-EZ green-EZ interesting 'interesting green book'

(8) Complements of As

- a. asheq-e Hasan (A-EZ NP)
in love-EZ Hasan 'enamored with Hasan'

- b. negæran-e bæche (A-EZ NP)
worried-EZ child-PL 'worried about the children'
- c. montæzer-e Godot (A-EZ NP)
waiting-EZ Godot 'waiting for Godot'

(9) Partitives

- a. tamâm-e sherkathâ (Q-EZ NP)
all-EZ companies 'all/the-totality-of companies'
- b. tamâm-e-in sherkathâ (Q-EZ NP)
all-EZ-these companies 'all/the-totality-of these companies'

iPersian RCs are all post nominal. Finite RCs (FRCs) do not show Ezafe and are introduced by the complementizer *ke* (10a). Reduced, nonfinite RCs (RRCs) are introduced by Ezafe; no *ke* appears (10b):

(10) Finite and Reduced Relative Clauses

- a. dust -e Hasan] (*-e) [ke Nanaz-o mishnas-e] (N FRC)
friend -EZ Hasan -EZ that Nanaz knows
'the friend of Hasan who knows Nanaz'
- b. aks-e [çâp šode dar ruznâme] (N-EZ RRC)
photo-EZ publication become in newspaper
'the photo published in the newspaper'

With certain PPs, Ezafe occurs between the P head and its object. When PP occurs as a noun modifier, Ezafe sometimes occurs between PP and N:

(11) Complements of (Certain) Ps

- a. beyn-e mæn-o to (P-EZ NP)
between-EZ you and me 'between you and me'
- b. væsæt-e otaq (P-EZ NP)
in-the-middle-EZ room 'in the middle of the room'
- c. dor-e estæxr (P-EZ NP)
around-EZ pool 'around the pool'
- d. bæqæl-e dær (P-EZ NP)
by-EZ door 'by the door'
- e. xune-ye [PP kenar-e dærya] (N-EZ [P-EZ NP])
house-EZ next-EZ sea 'house on the beach'

2.0 Ezafe as Case-marker

(12)-(15) below involve NPs, APs, PPs and QPs, resp. The (a) examples have Ezafe; the others have the iPersian preposition *az* or *Ez-az* alternating, with virtually identical meaning.

- (12) a. ye goruh -e/az daneshjuyan (NP)
a group -EZ/ of student.PL
'a group of the students'
- b. ye baste -e/az ketab.ha-ye zabanshenasi resid
a package -EZ/of book.PL-EZ linguistics arrived
'a package of books about linguistics arrived.'
- c. gozaresh -e/az vezarat-e farhang
report -EZ/ of ministry-EZ education
'report of/from the ministry of education'

- (13) a. negæran -e bæche (AP)
worried -EZ child.PL 'worried about the children'
- b. deltang az zendegi
depressed of life 'depressed about life'
- c. xashmgin az natije -ye entexabat
enraged of result -EZ election
'enraged by/at/about the election result'

- (14) a. dar-tul -e mah -e Febriye (PP)
during -EZ month -EZ February
'during the month of February'
- b. qabl -e/az nahar
before -EZ/of lunch 'before lunch'
- c. bad -e/az molaqat -e Hasan]
after -EZ/ of visit -EZ Hasan 'after the meeting with Hasan'

- (15) a. bishtar -e ketab.ha (QP)
most -EZ book.PL 'most of/among the books'
- b. bazi az ketab.ha]
some of book.PL 'some of/among the books'
- c. cand-ta -ye/az anha
few-unit -EZ/of them 'few of them'
- d. hic kodum -ye/az anha
not any -EZ/of them 'none of them'

English shows a similar parallelism insofar as it can often gloss Ezafe naturally with *of*, its *az*-equivalent in these contexts.

- (16) a. del-e sang (N-EZ NP)
heart-EZ stone 'heart of stone'/'stone heart'
- b. manzel-e John (N-EZ NP)
house-EZ John 'house of John's'/'John's house'
- c. shahr-e Tehran (N-EZ NP)
city-EZ Tehran 'city of Tehran'/'Tehran city'

d. Ali-e Ghozati		(N-EZ NP)
Ali-EZ Ghozati	'Ali of the Ghozati's/'Ali Ghozati'	
e. tæxrib-e shæhr		(N-EZ NP)
destruction-EZ city	'destruction of the city'	
f. xordan-e âb		(N-EZ NP)
drinking-EZ water	'drinking of water'	
g. forunshandé-ye ketâb		(N-EZ NP)
seller-EZ books	'seller of books'	
h. bishtar-e ketab.ha		(Q-EZ NP)
most-EZ book.PL	'most of the books'	
i. arezumand-e shohrat		(A-EZ NP)
desirous-EZ fame	'desirous of fame'	
j. birun-e panjare		(P-EZ NP)
out-EZ window	'out of the window'	
k. ba-vojud-e Hasan		(P-EZ NP)
with-existence-EZ Hasan	'in spite of Hasan'	
l. be-dalil-e in mozu		(P-EZ NP)
for-reason-EZ this issue	'because of this issue'	

Chomsky (1981): *of* in the glosses in (16) is present because [+N] items need case but [+N] items do not assign/check case. *Of* (and *az*) discharge this function (17).

(17)	NON-CASE-ASSIGNING	CASE-ASSIGNING	CASE-REQUIRING	
a.	X[+N] ≠		Y[+N]	
b.	X[+N] ≠	[_{PP} of ⇒	Y[+N]]	English of
c.	X[+N] ≠	[_{PP} az ⇒	Y[+N]]	iPersian az

Samiian (1983, 1994): iPersian -EZ is a case-assigner (18a); Larson and Yamakido (2008) offer a minor variant of her proposal (18b):

(18)	NON-CASE-ASSIGNING	CASE-ASSIGNING	CASE-REQUIRING	
a.	X[+N] - EZ	⇒	Y[+N]	iPersian Ezafe
b.	X[+N] - EZ	[_{EzP} -EZ ⇒	Y[+N]]	iPersian Ezafe
		↑ ----- ↓		

Samiian's proposal (on either variant) entails a key distributional claim about -EZ:

Key Claim: Ezafe occurs between nominal ([+N]) elements.

3.0 Ezafe and iPersian PPs

iPersian PPs raise puzzles for the key claim. P's are usually analyzed as [-N]. So:

- We don't expect -EZ after P - i.e., we predict: *P-EZ NP
- We don't expect -EZ before PP - i.e., we predict: *N-EZ PP

Neither prediction is correct. Samiian (1983, 1994) notes iPersian Ps fall into 3 classes vis-a-vis their objects. Some Ps do forbid -EZ before their objects, as expected (P₁); but some allow -EZ (P₂); some even require it (P₃).

(19) P₁ (forbids Ezafe)

a.	æz (*-e) Maryam	
	from (-EZ) Maryam	'from Maryam'
b.	ba (*-ye) Hæsæn	
	with (-EZ) Hasan	'with Hasan'
c.	be (*-ye) Ali	
	to (-EZ) Ali	'to Ali'
d.	dær (*-e) Maryam'	
	in/at/on (-EZ) Maryam	'in/at/on Maryam'

(20) P₂ (allows Ezafe)

a.	bala (-ye) divar	
	up (-EZ) wall	'up the wall'
b.	jelo (-ye) Hæsæn	
	in front (-EZ) Hasan	'in front of Hasan'
c.	ru (-ye) miz	
	on (-EZ) table	'on top of the table'
d.	tu (-e) divar	
	inside (-EZ) wall	'inside the wall'

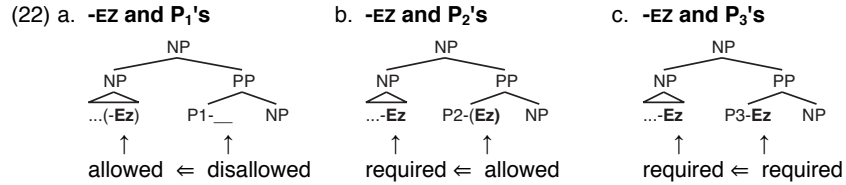
(21) P₃ (requires Ezafe)

a.	beyn *(-e) mæn-o to	
	between -EZ you-and me	'between you and me'
b.	væsæt *(-e) otaq	
	in-the-middle -EZ room	'in the middle of the room'
c.	dor *(-e) estæxr	
	around -EZ pool	'around the pool'
d.	bæqæɫ *(-e) dær	
	by -EZ door	'by the door'

If -EZ occurs between nominal ([+N]) elements, under the case-marking analysis this distribution must reflect "nominality" in P_n. Specifically:

P ₁ s must be non-nominal	([-N])
P ₂ s must be "optionally nominal"	([±N])
P ₃ s must be nominal	([+N])

Consider next PPs functioning as NP-modifiers. Here -EZ does in fact occur before PP according to P-class. P₁Ps allow a preceding -EZ (22a). P₂Ps require a preceding -EZ (22b). P₃Ps require a preceding -EZ (22c).



- (23) a. [_{NP} sham **(-e)** [_{PP} ba Hasan]] P₁: *ba*
 dinner **(-EZ)** with Hasan 'dinner with Hasan'
 b. [_{NP} divar ***(-e)** [_{PP} jelo Ali]] P₂: *jelo*
 wall **(-EZ)** in-front-of Ali 'wall in front of Ali'
 c. [_{NP} divar ***(-e)** [_{PP} jelo **-e** Ali]] P₂: *jelo*
 wall **-EZ** in-front-of **-EZ** Ali 'wall in front of Ali'
 d. [_{NP} miz ***(-e)** [_{PP} bæqæɫ **-e** Hasan]] P₃: *bæqæɫ*
 table **-EZ** near **-EZ** Hasan 'table near Hasan'

Again, if -EZ occurs between nominal ([+N]) elements, under the case-marking analysis this distribution must reflect the "nominality" of P_nP. Specifically:

- P₁Ps must be "optionally nominal" ([±N])
- P₂Ps must be nominal ([+N])
- P₃Ps must be nominal ([+N])

What sense can we make of this?

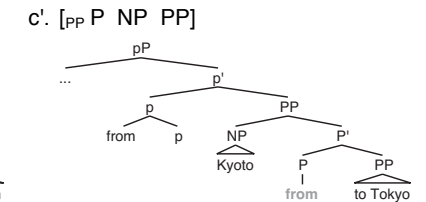
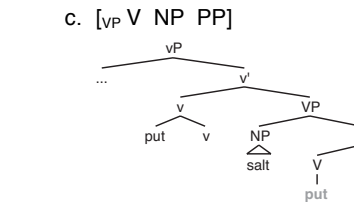
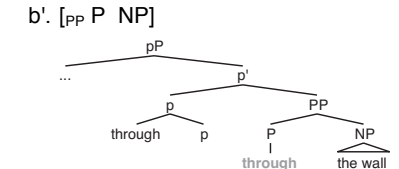
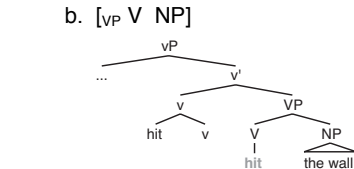
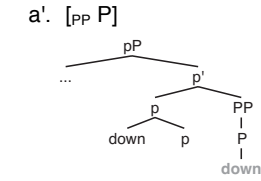
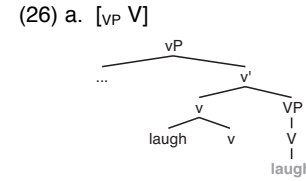
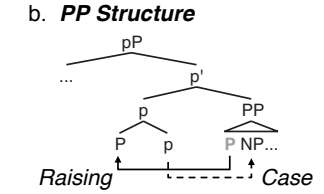
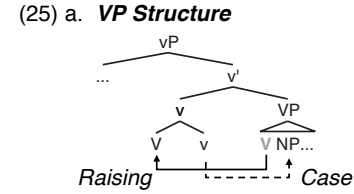
4.0 PP Structure and Nominalization

4.1 VP and PP

Jackendoff (1973) argues for a basic parallelism in V/P complementation (24):

(24) Verbal Complementation	Prepositional Complementation
a. [_{VP} V] <i>laugh, cough, run, fall, etc.</i>	a'. [_{PP} P] <i>in(side), down, out, through, over, etc.</i>
b. [_{VP} V NP] <i>hit, kiss, see, etc.</i>	b'. [_{PP} P NP] <i>in(side), down, out, through, over, etc.</i>
c. [_{VP} V PP] <i>dash, emerge, , reply, etc.</i>	c'. [_{PP} P PP] <i>into, down, from, up, etc.</i>
d. [_{VP} V NP PP] <i>give, send, put, etc.</i>	d'. [_{PP} P NP PP] <i>into, down, from, to, in, etc.</i>

These parallels are developed further by van Riemsdijk (1990) & Svenonius (2003):



Consider now the external and internal behavior of the boldfaced phrases in (27a-d):

- (27) a. [_{VP} V NP] John will **destroy** **the evidence** of-forbidden
 b. [_{NP} V-ing NP] John 's **destroying** **the evidence** } of-optional
 c. [_{NP} V-ing of NP] John 's **destroying of the evidence** }
 d. [_{NP} N of NP] John 's **destruction of the evidence** of-required

destroy the evidence is "externally verbal" (combines w/will) and "internally verbal" (shows ACC object).

destroying the evidence is externally nominal (combines w/poss) but internally verbal.

destroying of the evidence is externally nominal and internally nominal (shows of).

destruction of the evidence is externally and internally nominal.

Compare now (28a-d):

- (28) a. [PP P₁ NP] sham **ba** **Hasan** EZ-forbidden (P₁)
 'dinner with Hasan'
- b. [NP P₂ NP] divar -e **jelo** **Ali** } EZ-optional (P₂)
 'wall before Ali'
- c. [NP P₂ -EZ NP] divar -e **jelo** **-ye Ali** }
 'wall before Ali'
- d. [NP P₃ -EZ NP] miz -e **bæqæl -e** **Hasan** EZ-required (P₃)
 'table near Hasan'

ba Hasan is "externally prepositional" (no EZ on preceding N) and "internally prepositional" (shows ACC object).
jelo Ali is externally nominal (requires EZ on preceding N), but internally prepositional.
jelo-ye Ali is externally nominal and internally nominal (requires EZ before object).
bæqæl-e Hasan is both internally and externally nominal.

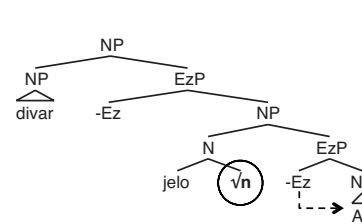
P₁'s behave like "true Ps" heading "true PPs"
 P₃'s behave like Ns heading NPs
 P₂'s behave like gerunds

4.2 VP and PP Nominalization

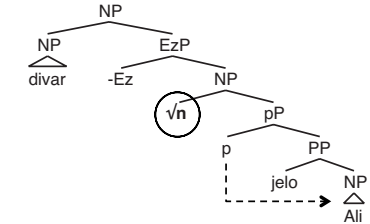
Jackendoff (1977): nominal vs. verbal gerund status reflects scope of *-ing* (29a,b):

- (29) a. **N Gerund** (Nominalized V) b. **V Gerund** (Nominalized vP)
-
- c. **Derived Nominal** (Deverbal N) d. **Simple vP**
-

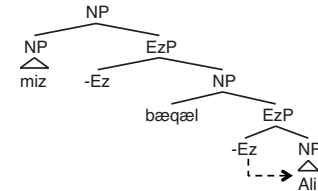
(30) a. **P₂** (Nominalized P)



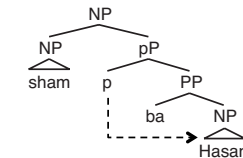
b. **P₂** (Nominalized pP)



c. **P₃** (De-prepositional N)



d. **P₁** (Pure pP)



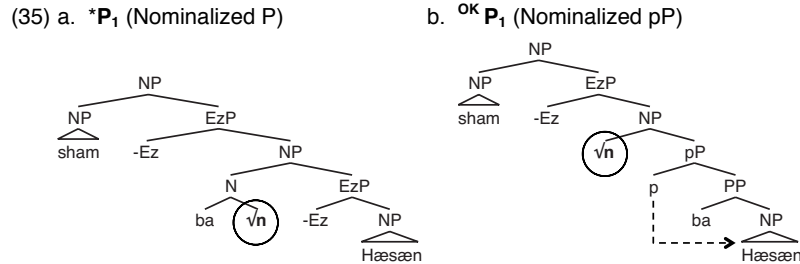
Karimi and Brame (1986, 2012): P₃s behave like Ns; e.g. they pluralize (31). P₃Ps combine w/demonstratives (32); occur as P₁-objects (33a); modifiable by AP (33b).

- (31) a. un zir-â-ye miz (= K&B (45a,b,d))
 that under-PL-EZ table 'those under spaces of the table'
- b. un vasat-â-ye otâgh 'those middle parts of the room'
 that middle-PL-EZ room
- c. in posht-â-ye xune 'these back areas of the house'
 in behind-PL-EZ house
- (31) a. in/un zir-e miz (= K&B (43a-f))
 this/that under-EZ table 'this/that underspace of the table'
- b. in/un vasat-e sandogh 'this/that middle part of the trunk'
 this/that middle-EZ trunk
- c. in/un posht-e mashin 'this/that back area of the car'
 this/that behind-EZ car
- (33)a. **be** zir-e miz (= K&B (46a))
 to under-EZ table 'under (directional the table)'
- b. zir-e **kasik-e** miz (= K&B (47))
 under-EZ **dirty-EZ** table 'the dirty underspace of the table'

What about the optionality of EZ on P₁Ps despite its absence after P₁s (23a)?
 We suggest this is analogous to what one sees in English with (34a-e).

- (34) a. John's destroying (of) the evidence (was illegal).
 b. John's borrowing (of) the tools (was frowned on).
 c. John's hearing (*of) the noise (was unexpected).
 d. John's knowing (*of) French (was not taken for granted).
 e. John's loving (*of) chocolate (was a drawback).

Proposal: P₁s reject nominalization as a lexical semantic matter; the pP phrase more readily accepts nominalization since lexical constraints don't apply (35a-b).



5.0 Nominalization as Feature-Separation

Extending Jackendoff (1977) to iPersian Ps is attractive, but our account is incomplete. For J, *-ing* is freely adjoinable within VP (up to lexical constraints). But iPersian P₂s seem to require lexical/phrasal nominalization: P₂Ps require EZ on a preceding [+N] (28b-c). How do we capture this?

Our Proposal: Nominalization represents separation of an N category feature into interpretable vs. valued instances.

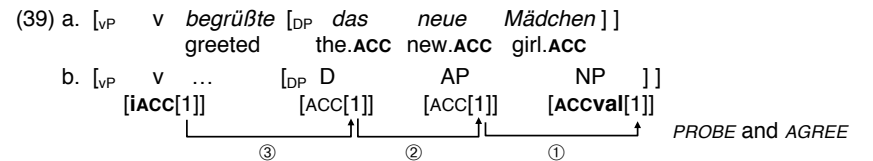
Current feature theory imports an PF-LF distinction into features. It distinguishes instances of features F as being **interpretable**, **valued**, **both** or **neither**:

- (36) a. iF **interpretable** F, associated w/“meaning”
 b. Fval **valued** F, associated w/visible marking/pronunciation
 b. iFval **interpretable-valued** F, associated w/meaning & marking
 d. F **uninterpretable-unvalued** F, concordial

Pesetsky and Torrego (2007): unvalued feature instances iF/F probe their c-command domain seeking to agree with another instance of F. For F to be interface-“legible”, it must have **both** interpretable and valued instances. (37a-c) are legible features. (38a-e) are non-legible features:

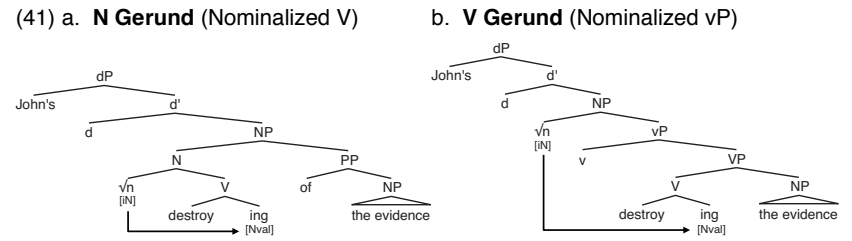
- (37) a. iFval
 b. iF[n] ... Fval[n] (coindexing F[n]...F[n] indicates agreement)
 c. iF[n] ... F[n] ... Fval[n]
 d. iF[n] ... F[n] ... F[n] ... Fval[n]

- (38) a. iF[]
 b. Fval[]
 c. iF[n] ... F[n]
 d. F[n] ... Fval[n]
 e. iF[] ... Fval[]



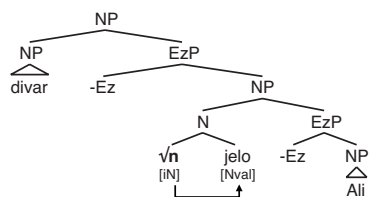
- (40) a. *destroy* ⇒ *destruction*
 [iVval] [iNval]
 b. [V *destroy -ing*]
 [iVval] [Nval]
 c. [N √n [V *destroy -ing*]]
 [iN[1]] [iVval] [Nval[1]] Nominal Gerund
 PROBE and AGREE
 c. [NP √n [VP ... [V *destroy -ing*] ...]]
 [iN[1]] [iVval] [Nval[1]] Verbal Gerund
 PROBE and AGREE

Under this picture, (29a-b) are recast as (41a-b):

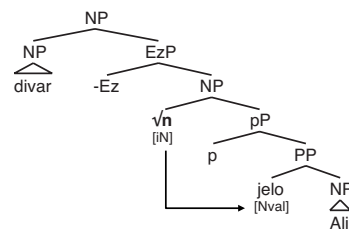


Given this, we can analyze iPersian P₂s as bearing an inherent [Nval] feature, requiring agreement with interpretable [iN], whether local (42a) or higher up (42b):

(42)a. P₂ (Nominalized P)



b. P₂ (Nominalized pP)

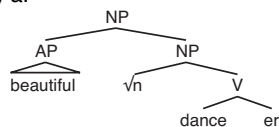


Nominalization as [N]-feature separation may illuminate other cases. Consider the ambiguity in (43a), and its apparent bracketing paradox (43b-c):

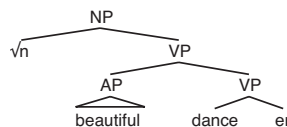
- (43) a. beautiful dancer
- b. [beautiful [dance -er]] "attractive dancer"
- c. [[beautiful dance]-er] "one who dances beautifully"

This might also be recast as scope of a nominalizer associated with -er (44a,b):

(42) a.



b.



Other potential cases include nominal behavior by complement and relative clauses.

Summary

- We introduced iPersian Ezafe and its analysis as a case-marking element.
- We examined the complex distribution of Ezafe in iPersian PPs, both internally and externally.
- We proposed that these can be captured by recognizing the parallel structure of VP and PP (Jackendoff 1973) and by extending the scopal view of nominalization (Jackendoff 1977) from VP to PP.
- iPersian PPs were seen to show exact correspondents of pure VPs, verbal gerunds, nominal gerunds and derived nominals.
- Nominalization - making [+N] - is thus seen to apply to both [-N] categories.
- We reanalyzed nominalization as separation of an N category feature into interpretable vs. valued instances.
- This analysis may have application to other cases where the visible position of a nominalizing element does not coincide with its intuitive scope.

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