Chapter 10

The Ezafe construction revisited

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This chapter addresses the nature, distribution and function of the Ezafe morpheme, a distinguishing grammatical feature of many of the Iranian languages. We review three main analyses advanced in the wide literature on the subject: semantic, morphological, and syntactic. We argue that the syntactic account of Ezafe is the most promising, both in its empirical reach, and explanatory power. Looking at an exhaustive range of data from Iranian Persian (iPersian) and other Iranian languages, we note that Ezafe occurs between nominal elements in the NP, PP, AP, and QPs. Following case theory (Chomsky 1981), we propose that Ezafe satisfies a licensing requirement in the following phrase, similar to ‘of’ in English. We then consider in detail the implications of this theory for the occurrence of Ezafe before PPs in iPersian and before finite and nonfinite complement clauses in iPersian and Kurdish. Finally, we examine the occurrence of Ezafe in Zazaki ‘double Ezafe constructions’ and in Caspian languages showing the so-called ‘Reverse Ezafe construction’ in light of the case-based analysis.

Keywords: Iranian languages, Ezafe, semantic approach, morphological approach, case-based analysis, licensing requirement, NP modifiers and complements, adjective phrases, Partitives, post-nominal PP modifiers, complement clauses, double Ezafe construction, Reverse Ezafe

1. Introduction

A distinguishing grammatical feature of many of the Iranian languages is the presence of the so-called ‘Ezafe’ morpheme (ez), which is realized within a variety of phrases including nominals, prepositional phrases, adjectivals and quantifiers. Typical examples from Iranian Persian (from Samiian 1994) are given in (1), where Ezafe is realized as ye/e depending on whether the preceding form ends in a vowel or consonant (resp.).

1. Abbreviations follow the list from Leipzig Glossing Rules.

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An enduring question in Iranian grammatical studies is: what is the nature of the Ezafe morpheme? Where does it occur and why does it occur there? What conditions its distribution and what is its function? In the large literature on Ezafe, three general approaches have been pursued. One approach is broadly semantic: Ezafe serves to grammatically express or realize a semantic notion like modification or predication. A second approach is morphological: Ezafe is a morphological affix available only on a certain class of stems. The third approach is syntactic: Ezafe executes a specific function such as case-marking.

In this chapter we review the three main classes of proposals. We argue that although all face empirical challenges, the syntactic account of Ezafe appears the most promising, not only in terms of its empirical reach within Iranian ‘Ezafe languages’, but within languages showing the so-called ‘Reverse Ezafe’ construction as well, such as Gilaki, Mazanderani and Balochi. We begin with a brief review of the facts.

2. The Ezafe phenomenon

‘Ezafe’ refers to a morpheme occurring in Modern Persian, Balochi, Kurdish (Sorani, Kurmanji), Zazaki (aka Dimili) and Gorani (including Hawrami). In these languages, N, A, Q and P heads precede their complements and modifiers.
In certain cases, *Ezafe* (-ez) appears between them, realized on the preceding element. The basic patterns are schematized in (2):

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

iPersian exhibits *Ezafe* in its simplest form, the only variation being phonological (*e/ ye*). (3a)–(3g) show *Ezafe* occurring between a noun and a nominal complement or modifier. (3h) shows *Ezafe* between a noun and an attributive adjective. (3i) shows it between a noun and a PP. Finally, (3j) shows that *Ezafe* is recursive insofar as multiple attributive adjectives trigger multiple instances of it.

(3) **Modifiers & complements of Ns**

   a. *del=e sæng*  
     heart=ez stone  
     “stone heart”  
     *(N=ez NP)*

   b. *mænzel=e John*  
     house=ez John  
     “John’s house”  
     *(N=ez NP)*

   c. *šæhr=e Tehran*  
     city=ez Tehran  
     “Tehran city”  
     *(N=ez NP)*

   d. *Ali=e Ghozati*  
     Ali=ez Ghozati  
     “Ali Ghozati”  
     *(N=ez NP)*

   e. *tæxrib=e šæhr*  
     destruction=ez city  
     “destruction of the city”  
     *(N=ez NP)*

   f. *xordæn=e ab*  
     drinking=ez water  
     “drinking of water”  
     *(N=ez NP)*

   g. *forunšænde=ye ketab*  
     seller=ez books  
     “seller of books”  
     *(N=ez NP)*

   h. *otaq=e besyar kucik*  
     room=ez very small  
     “very small room”  
     *(N=ez AP)*

   i. *divar=e jelo Ali*  
     wall=ez in-front-of Ali  
     “wall in front of Ali”  
     *(N=ez PP)*
(4a)–(4c) illustrate the occurrence of *Ezafe* in an adjective phrase (AP) between the head and its nominal (NP) complement:

\[(4) \text{ Complements of As} \]
\[\begin{align*}
\text{a. } & \text{ašeq}=e \text{ } \text{Hasan} \quad (A=\text{EZ NP}) \\
& \text{in love}=\text{EZ Hasan} \\
& \text{“enamored with Hasan”} \\
\text{b. } & \text{negarán}=e \text{ } bace-ha \quad (A=\text{EZ NP}) \\
& \text{worried}=\text{EZ child-pl} \\
& \text{“worried about the children”} \\
\text{c. } & \text{montæzer}=e \text{ } \text{Godot} \quad (A=\text{EZ NP}) \\
& \text{waiting}=\text{EZ Godot} \\
& \text{“waiting for Godot”}
\end{align*}\]

**Ezafe** also occurs in iPersian between some quantificational elements (Qs) and their restriction phrase (5):

\[(5) \text{ Partitives} \]
\[\begin{align*}
\text{a. } & \text{tæmam } =e \text{ } \text{šerkæt-ha} \quad (Q=\text{EZ NP}) \\
& \text{all } =\text{EZ company-pl} \\
& \text{“all/the-totality-of companies”} \\
\text{b. } & \text{tæmam } =e \text{ in } \text{šerkæt-ha} \quad (Q=\text{EZ NP}) \\
& \text{all } =\text{EZ these company-pl} \\
& \text{“all/the-totality-of these companies”} \\
\text{c. } & \text{bištær } =e \text{ in } \text{šerkæt-ha} \quad (Q=\text{EZ NP}) \\
& \text{most } =\text{EZ these company-pl} \\
& \text{“most/the-majority-of companies”}
\end{align*}\]

(6a)–(6d) illustrate an interesting alternation involving *Ezafe* and relative clauses (RCs). iPersian RCs are uniformly post nominal. Finite RCs (FRCs) do not involve *Ezafe* and are instead introduced by the relative marker *ke* (6a), (6b). By contrast, reduced, nonfinite RCs (RRCs) are introduced by *Ezafe* and no *ke* appears (6c), (6d):

\[(6) \text{ Finite and reduced relative clauses} \]
\[\begin{align*}
\text{a. } & \text{dust } =e \text{ } \text{Hæsæn} \quad (*=e) \quad [\text{ke Nanaz-o } \text{mi-šnas-e}] \\
& \text{friend } =\text{EZ Hasan } =\text{EZ that Nanaz-ACC DUR-know.pres-3sg} \\
& \text{“the friend of Hasan who knows Nanaz”} \quad (N \text{ FRC})
\end{align*}\]
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b. in šagerd-a (*=ye) [ke žæbanšenasi mi-xun-ænd]
   dem student-pl =ez that linguistics dur-study.pres-3pl
   “these students who study linguistics” (N FRC)

c. in jævan=e [æz swis baer=gašt-e]
   this young=ez from Switzerland re=turn.pst-ptcp
   “this young man back from Switzerland”

Finally, (7a)–(7e) show that with certain iPersian PPs, Ezafe occurs between the P head and its object. (7f) shows furthermore that when such a PP occurs as a noun modifier, Ezafe may sometimes occur between PP and the head noun:

(7) Complements of (certain) Ps
   a. beyn=e mæn=ø to
      between=ez me=and you
      “between you and me”

   b. væset=e otaq
      in-the-middle=ez room
      “in the middle of the room”

   c. dor=e estæxr
      around=ez pool
      “around the pool”

   d. bæqæl=e dær
      by=ez door
      “by the door”

   e. kenar=e dærya
      next=ez sea
      “on the beach”

   f. xune=ye [kenar=e dærya]
      house=ez next=ez sea
      “house on the beach”

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3. Analyses of *Ezafe*

We now examine three approaches noted earlier – semantic, morphological and syntactic – considering their major assumptions and implications.

3.1 Semantic analyses

3.1.1 *Ezafe as predication marker*

Yadgar Karimi (2007) proposes that *Ezafe* instantiates a semantic predication relation between its two flanking expressions, developing ideas by Bowers (1993). Briefly, Bowers analyzes English predicates as property-denoting expressions of semantic type π, which require intervention by a predicate-forming operator (Pred) in order to be able to combine semantically with a subject. (8) illustrates the basic picture, where the semantic types of the various expressions are written as subscripts, and where we replace Bowers Pred(P) category with the more modern v(P) for ease of discussion in what follows.

(8)  
\[
\begin{align*}
&\text{a. Mary considers [vP that book red ]} \\
&\text{b.} \\
&\quad \text{vP} \\
&\quad \quad \text{that book}_e \\
&\quad \quad \quad V'<e,t> \\
&\quad \quad \text{V}<\pi,<e,t>> \text{ red}_\pi \\
\end{align*}
\]

Here the AP 'red' is of type π, which is inappropriate for direct combination with 'that book', which is of type e. The predicate-forming operator v thus combines first, creating the v' predicate v-'red', which now is of appropriate type (<e,t>) to combine with the subject. The result is the (small) clausal expression 'that book red' of type t.

Karimi (2007) proposes to extend this picture to Kurdish *Ezafe* constructions, analyzing *Ezafe* as a predicate-forming operator counterpart to v above. Karimi offers the two-step derivation in (9b)–(9c) for the simple example in (9a), where *sur* “red” initially merges with *kteb* “book” as an adjunct, but where the latter ultimately raises to the Spec of a combining n/Ez head so that “predication should somehow be codified syntactically in the DP” (Karimi 2007: 2164).

(9)  
\[
\begin{align*}
&\text{a. kteb=i sur} \\
&\quad \text{Book=EZ red} \\
&\quad \quad \text{“(a) red book”} \\
&\text{b.} \\
&\quad \text{NP} \\
&\quad \quad \text{sur} \\
&\quad \quad \quad \text{kteb} \\
\end{align*}
\]
Karimi provides no type labels for the expressions in his trees, but it is plain that he sees a close analogy between structures (9c) and (8b). Thus he comments: “the merged n⁰ along with its F-selected complement constitutes a function with one unsaturated argument, the NP subject (the head N)” (2007: 2615). This assimilation is highly problematic, however. For Bowers (1993) sur and kteb would both denote property expressions of type π, whose combination in (9b) would occur, not by predication, but rather by property conjunction. Furthermore, if one converted either sur or [NP sur kteb] to a propositional function (<e,t>), the result would be type-inappropriate for combining with kteb, which is not of type e, nor would the result be of type t, counterpart to (8):

(10) a. \[NPπ surπ ktebπ \Rightarrow \]

b. \[\ast NP_{<e,t>} π \]

The proposed analogy thus fails on closer inspection.

In our view, Karimi’s proposal rests on a basic semantic misunderstanding of examples like (9a), specifically of the semantic relation holding between its two constituents. Neither on a classic formal semantic analysis nor on one countenancing first-order properties as in Bowers (1993) is this relation predication. On a classic semantic analysis (e.g., Larson & Segal 1995; Heim & Kratzer 1998), red and book in (11a) are interpreted as predicates and their combination as co-predication – predication of the same object (x) (11b). On Bowers’ property-theoretic analysis, they are conjoined properties (11c).

(11) a. \[[NP red book]\]

b. \[λx[red'(x) & book'(x)]\]

c. \[red' \cap book'\]
Hence despite what Karimi (2007) suggests, there is in fact no natural analogy between predication structures like (8b) and what is occurring in modification, and hence no natural analysis of Ezafe as a predicate-forming operator.

In addition to the formal points made above, we also take note of a set of examples due to Ghomeshi (p.c.), which are problematic for Karimi (2007) and other accounts appealing to predication. It is well-known that whereas many adjectives are predicative (12a), some are not (13a). Correspondingly, combination with a noun is equivalent to co-predication (12c) or is not (13c):

(12) a. John is elderly.
   b. John is a friend.
   c. John is an elderly friend. = John is a friend who is elderly.

(13) a. *John is longstanding.
   b. John is a friend
   c. John is a longstanding friend. ≠ #John is a friend who is longstanding.

If Ezafe were associated strictly with predicative relations, as in Karimi (2007), one might expect it to occur strictly with predicative adjectives and not with non-predicative ones. This is not the case, however. As Ghomeshi (p.c.) notes, there is no difference between predicative and non-predicative adjective-noun combinations in Persian with regard to occurrence with Ezafe. If an appropriate adjective of either type exists, then Ezafe is present.

(14) Hæsæn dust =e mosen-i-e
    Hæsæn friend =EZ elderly-INDF-be.3sg
    “Hasan is an elderly friend.” (co-predicational)

(15) Hæsæn dust =e qadimi-i-e
    Hæsæn friend =EZ longstanding-INDF-be.3sg
    “Hasan is a longstanding friend.” (non-copredicational)

(16) Yoyo cellist =e xeyli xub-i-e
    Yoyo cellist =EZ very good-INDF-be.3sg
    “Yoyo is a very good cellist.” (non-copredicational)

3. Examples like (15)–(19) also bear against analyses like Den Dikken & Singhapreecha (2004) and Den Dikken (2006) that attempt to construe Ezafe structures as instances of subject-predicate inversion, with Ezafe instantiating Pred. The relation between the nominal and the adjective in (15)–(19) is neither predication nor co-predication. Likewise these data also undermine approaches like Franco et al. (2015), which attempts to analyze Ezafe constructions semantically as a series of co-predications. Again, the relation between the nominal head and the predicate in (15)–(19) cannot be captured as co-predication.
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(17) *Clinton ræis-jomhur =e sabeq=e amrika-st*
    Clinton president =EZ past=EZ America-be.3.sg
    “Clinton is a past president of America.” (non-copredicational)

(18) *Biden ræis-jomhur =e ayænde=ye amrika-st*
    Biden president =EZ future=EZ America-be.3.sg
    “Biden is a future president of America.” (non-copredicational)

(19) *Alex modir =e kar.košte-i-e*
    Alex manager =EZ veteran-INDF-be.3.sg
    “Alex is a veteran manager.” (non-copredicational)

Hence assimilating *Ezafe* to predicative semantics seems both theoretically and empirically mistaken.

### 3.1.2 *Ezafe* as modification marker

Consider next the often-repeated description of *Ezafe* as a ‘marker of modification’. 4

A recent analysis embodying this claim is Kahnemuyipour (2014), who addresses iPersian. Although Kahnemuyipour offers no structural analysis of any actual iPersian example in his paper, two general diagrams that he provides allow one to reconstruct the basic idea. The analysis is presented in somewhat simplified form in (20a)–(20c). Briefly, Kahnemuyipour (2014) adopts the proposal of Cinque (2010) according to which there exists a universal, right-descending structure for DPs wherein determiners, demonstratives and numerals occur higher and modifiers like APs occur lower and closer to the NP head (20a). Kahnemuyipour’s proposal for *Ezafe* concerns the lower portion of this structure, approximately as in (20b) for the example *ketâb-e sabz-e jâleb* “interesting green book”. The APs *sabz* “green” and *jâleb* “interesting” are positioned within AgrPs as specifiers of their own phrases (XP, YP) whose category Kahnemuyipour does not identify. The head noun *ketâb* “book” is positioned at the bottom. To derive the correct surface order, [NP *ketâb*] raises to the specifier of AgrP and Y raises to Agr, where the two heads are realized as Ez. In the next stage (20c) the entire lower AgrP raises to the Spec of the higher ArgP. X raises to the higher Agr, and the two are again realized as Ez. This ‘roll-up movement’ yields the surface order of terms. *Ezafe* is analyzed as realizing agreement. 5

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4. See for example, Palmer (1971) and Haig (2011).

5. Kahnemuyipour’s analysis of *Ezafe* as an agreement head is broadly plausible for AP modifier cases given that adjectives show agreement with NP in many languages. However the view loses plausibility with PP modifiers, which do not show agreement with Ns they modify.
cross-linguistically, but which nonetheless may show Ezafe in combination with an NP as shown in (i).

(i) a. \textit{Mina aks} *(=e) \{pp dar ganje]-râ\} be Ali dâd
Mina picture =EZ in closet-ACC to Ali gave
“Mina gave the picture in the closet to Ali.” (Kahnemuyipour 2014)
b. \{sobh-hâ \=ye \{pp, bà kabutar-hâ]-râ\}
morning-PL =EZ with pigeon-PL-ACC
“the mornings with the pigeons.” (Samvelian, 2008)

Kahnemuyipour (2014) notes examples like (i) but provides no analysis of them within his account.

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In Kahnemuyipour’s framework, examples with additional instances of Ez + AP modifier can be derived by additional Agr projections + roll up. Nonetheless, serious problems arise when a wider range of *Ezafe* cases is considered. Roll up movement as proposed by Cinque (2010) and Kahnemuyipour (2014) is uniformly phrasal movement. In (20b) and (20c), the items moving to Agr spec positions – *ketab* and *ketab Ez sabz* – are phrases in each case – NP and AgrP, respectively. It follows that Kahnemuyipour’s analysis of *Ezafe* will be unavailable when what needs to be fronted is a head. More specifically, it will be unavailable whenever the relation between α and β in α Ez β is a head-complement relation.

But we have already seen numerous instances of *Ezafe* occurring between heads and complements. Thus in (3e)–(3g) (repeated below), each of the nouns has a relational semantics $(\lambda y \lambda x \lambda e [(\text{dem})'(e)(y)(x)])$ and what follows N stands in a complement relation to it, supplying an argument to the relation, just as in the English gloss.

(3) **Ezafe** marking complements of Ns

  e. *texrib=e šeehr* (N=EZ NP)  
  “destruction of the city”  
  $\lambda y \lambda x \lambda e [\text{destruction}^*(e)(y)(x)](\text{the-city}^*) \Rightarrow \lambda x \lambda e [\text{destruction}^*(e)(\text{the-city}^*)(x)]$

  f. *xordan=e ab* (N=EZ NP)  
  “drinking of water”  
  $\lambda y \lambda x \lambda e [\text{drinking}^*(e)(y)(x)](\text{water}^*) \Rightarrow \lambda x \lambda e [\text{drinking}^*(e)(\text{water}^*)(x)]$
Similarly in (4) (repeated below) each of the A's has a relational semantics and what follows A stands in a complement relation to it, as in the English gloss.

(4) *Ezafe* marking complements of A

a. *ašeq* (= *Hæsæn*  
   enamored (= *Hasan*)  
   “enamored with Hasan”/“in love with Hasan”  
   \( \lambda y \lambda x[\text{enamored-of}(y)(x)](\text{Hasan'}) \Rightarrow \lambda x[\text{enamored-of}(\text{Hasan'})(x)] \)

b. *negæran* (= *bæce-ha*  
   worried (= *child-pl*)  
   “worried about the children”  
   \( \lambda y \lambda x[\text{worried-about}(y)(x)](\text{child'}) \Rightarrow \lambda x[\text{worried-about}(\text{child'})(x)] \)

c. *montæzer* (= *Godot*  
   waiting (= *Godot*)  
   “waiting for Godot”  
   \( \lambda y \lambda x[\text{waiting-for}(y)(x)](\text{Godot'}) \Rightarrow \lambda x[\text{waiting-for}(\text{Godot'})(x)] \)

In (7b)–(7e) (repeated below) each of the P’s has a relational semantics and what follows P corresponds to its object, as in the English gloss.

(7) *Ezafe* marking complements of (certain) P

b. *væsæt* (= *otaq*  
   in-the-middle (= room)  
   “in the middle of the room”  
   \( \lambda y \lambda x[\text{the-middle-of}(y)(x)](\text{room'}) \Rightarrow \lambda x[\text{the-middle-of}(\text{room'})(x)] \)

c. *dor* (= *estar*  
   around (= pool)  
   “around the pool”  
   \( \lambda y \lambda x[\text{around}(y)(x)](\text{pool'}) \Rightarrow \lambda x[\text{around}(\text{pool'})(x)] \)

d. *bæqæl* (= *der*  
   by (= door)  
   “by the door”  
   \( \lambda y \lambda x[\text{by}(y)(x)](\text{door'}) \Rightarrow \lambda x[\text{by'(door')}(x)] \)

e. *kenar* (= *dærya*  
   beside (= sea)  
   “on the beach”  
   \( \lambda y \lambda x[\text{on}(y)(x)](\text{beach'}) \Rightarrow \lambda x[\text{on'(beach')}(x)] \)
Finally, under standard generalized quantifier semantics (Barwise & Cooper 1981), *sherkætha* “companies” in (5a)–(5b) (repeated below as (21a–b)) would be analyzed as supplying the restriction argument of the relational quantifier *tæmam* “all”. In no sense is *sherkætha* a modifier.

(21) **Ezafe marking complements of partitive Qs**
   a. *tæmam* = *e* *šerkæt-ha*  \[(Q=EZ NP)\]
      all = EZ company-PL
      “all/the-totality-of companies”
      \[\lambda Q \lambda P \forall x [Q(x) \rightarrow P(x)](\text{company}^\prime) \Rightarrow \lambda P \forall x [\text{company}^\prime(x) \rightarrow P(x)]\]
   b. *tæmam* = *e* *in* *šerkæt-ha*  \[(Q=EZ NP)\]
      all = EZ this company-PL
      “all/the-totality-of these companies”
      \[\lambda Q \lambda P \forall x [Q(x) \rightarrow P(x)](\text{company}^\prime) \Rightarrow \lambda P \forall x [\text{company}^\prime(x) \rightarrow P(x)]\]

These cases pose a clear-cut challenge for Kahnemuyipour (2014). Since the relation here is uniformly head-complement, the observed ordering cannot be derived by phrasal roll-up; rather head movement would be needed (22).

(22) a. **Head movement of N**
   \[\text{[}_N \text{tæxrib }] = e \text{[}_N \text{ şæhr}\text{ ] [}_N \text{tæxrib }]\]
   *=EZ city destruction*
   “destruction of the city”

   b. **Head Movement of A**
   \[\text{[}_A \text{ašeq }] = e \text{[}_A \text{Hæsæn}\text{ ] [}_A \text{aseq }]\]
   *=EZ Hasan enamored*
   “enamored with Hasan”

   c. **Head Movement of P**
   \[\text{[}_p \text{bæqæl }] = e \text{[}_p \text{dær}\text{ ] [}_p \text{bæqæl }]\]
   *=EZ door by*
   “by the door”

   d. **Head Movement of Q**
   \[\text{[}_q \text{tæmam }] = e \text{[}_q \text{šerkætha}\text{ ] [}_q \text{tæmam }]\]
   *=EZ companies all*
   “all companies”
But how this could work under Kahnemuyipour (2014) is unclear. Derivations strictly following (20b)–(20c) would require moving a head to a phrasal position, which is excluded under current theory. We see no plausible extension of Kahnemuyipour’s account to handle such cases, although one is clearly required.

Thus assimilation of *Ezafe* to structures of modification, as in Kahnemuyipour (2014), seems no more successful than assimilation of *Ezafe* to structures of predication, as in Karimi (2007). In both cases, the range of examples exhibiting *Ezafe* outstrips the single semantic concept that *Ezafe* is hypothesized to embody. Beyond trying to force iPersian *Ezafe* into a semantic space that is too narrow to accommodate it, the particular *Ezafe*-as-modifier analysis of Kahnemuyipour (2014), involving Cinque-style roll up, encounters technical problems that seem quite difficult to address.

3.2 *Ezafe* as a morphological affix

Samvelian (2007, 2008) proposes a morphological analysis according to which *Ezafe* is an affix attaching to nominal elements (N, A or P) and marking a ‘dependency relation’ – modification, complementation, or possession – with its following phrase. Samvelian’s account is cast within Head-Driven Phrase Structure Grammar (HPSG) and crucially relies on the notion of edge features developed by Nevis (1986), Zwicky (1987), Lapointe (1990, 1992) and Miller (1991). The English prenominal (or ‘group’) genitive can be used to illustrate the approach, drawing on discussion from Anderson (2013). As Anderson notes, English prenominal genitive inflection is realized on a variety of items, from lexical words (23a) to much larger phrases (23b)–(23e). In all cases, however, it is realized at a right edge, whatever the categorial identity or grammatical function of the item it attaches to. ((23) = (1a)–(1e) in Anderson 2013):

(23) a. [Fred]’s opinion about the English genitive is different from mine.
   b. [The man on the Clapham omnibus]’s opinion about the English genitive is poorly thought out.
   c. [Every linguist I know]’s opinion about the English genitive involves functional categories.
   d. [That young hotshot who was recently hired at Princeton that I was just telling you about]’s opinion about the English genitive is simply wrong.
   e. Even [that colleague who shares an office with you]’s opinion about the English genitive is not to be trusted.

In HPSG, this distribution can be captured by assigning a right-edge feature [poss] to the possessor in a possessive DP. The nature of this feature is to propagate downward from mother node to its rightmost daughter until it reaches a terminal element where it is pronounced (24) (modeled on (6)–(7) in Anderson 2013):

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(24) a. **English Possessive**
   
   Type: [edge: right]
   
   Value: [poss]
   
   Word-level Morphology:
   
   /X[poss]/ → /X+z/

   b. 

   ![Diagram of English Possessive](image)

   Samvelian (2007) extends this general picture to *Ezafe*, using a right edge feature [ez] that can be affixed either to words or to NPs.

(25) **iPersian Ezafe**

   Type: [edge: right]

   Value: [ez]

   Word-level Morphology: /X[ez]/ → /X+e/

   To illustrate this proposal, consider (26) (adapted from (56) in Samvelian 2007), which differ in whether the PP `æz rimel “of/with mascara”` is positioned after or before the adjective `sængin “heavy”` (resp.). Note that *Ezafe* attaches to `rimel` or to `sængin` depending on word order:

(26) a. `mojgan=e sængin æz rimel=e Maryam eyelid.pl=ez heavy of mascara=ez Maryam “eyelids heavy with mascara of Maryam’s”/”Maryam’s mascara-laden eyelids”`

   b. `mojgan=e æz rimel sængin=e Maryam eyelid.pl=ez of mascara heavy=ez Maryam “eyelids heavy with mascara of Maryam’s”/”Maryam’s mascara-laden eyelids”`

   Following the general idea in (24), this distribution can be captured by affixing *Ezafe* at the word level to the lexical *mojgan* “eyelid” and at the phrasal level to the NP *mojgan sængin æz rimel/mojgan æz rimel sængin* “eyelids heavy with mascara”, as shown in (27) (resp.). Note that in both trees [ez] passes down a right edge starting from the high NP. Where [ez] is realized depends on what is rightmost in the largest NP.
Samvelian completes her 2007 account with an additional feature [dep] (for ‘dependency’) that accompanies [ez] and takes scope at the level where [ez] attaches – i.e., at N or NP. As defined by Samvelian (2007: 636), [dep] requires “that the constituent [it marks] must be followed by a noun, an AP, a PP or an NP.” Thus in (27) [dep]-marking on the lexical noun [N $\text{mojgân}$] is satisfied by the presence of the AP [AP $\text{sangin az rimel}$]/[AP $\text{az rimel sangin}$]; [dep]-marking on the noun phrase [NP $\text{mojgân sangin az rimel}$]/[NP $\text{mojgân az rimel sangin}$] is satisfied by the presence of “Maryam.”6

Samvelian’s account has advantages over the previous two insofar as it does not try to associate Ezafe with a single semantic concept like predication or

6. The structures in Samvelian (2007) do not include a DP projection in possessives as in (27). Furthermore, Maryam is classified as an NP rather than a DP. These modernizing adjustments in (27) do not appear to us to jeopardize the basic account.
modification. Instead, *Ezafe* serves as a general ‘sign of dependency’ – modification, complementation or possession – between the [ez]-bearing nominal and the following phrase. At the same time, although Samvelian’s account yields a description of *Ezafe* distribution, it provides no explanation for it. *Ezafe* is proposed to be a nominal morpheme whose effect is to require a following AP, PP or NP: but if so:

- Why should nominal elements bear such marking?
- What unites the class of phrases selected by [dep]? Do AP, NP and PP share some property such that they pattern together with respect to *Ezafe*; or are they simply a random list?

The force of these questions becomes clearer in the context of relative clauses and postnominal PP modifiers.

### 3.2.1 *Ezafe* and relative clauses

We observed earlier in (6) (repeated below) that whereas iPersian finite relative clauses (FRCs) resist *Ezafe* (6a)–(6b), iPersian reduced relative clauses (RRCs) require it (6c)–(6d).

(6) a. dust =e Hæsæn (*=e) [ke Nanaz-o mi-şnas-e] N FRC friend =EZ Hasan =EZ that Nanaz-ACC dur-know,PRES-3SG “the friend of Hasan who knows Nanaz”

b. in šagerd-a (*=ye) [ke zaebanšenasi mi-xun-ænd] N FRC DEM student-pl =EZ that linguistics dur-study,PRES-3PL “these students who study linguistics”

c. in jævan=e [æz Suis bær-gæšt-e] (N=EZ RRC) this young=ez from Switzerland return,pst-ptcp “this young man back from Switzerland”

d. øks=e [čap=šod-e dær ruzname] (N=EZ RRC) photo=ez publication=got-ptcp in newspaper “the photo published in the newspaper”

Reduced relatives are not listed by Samvelian (2007) in the set of categories selected by her [dep] feature” the categories that can follow *Ezafe*. Samvelian could, of course, modify the definition of [dep] to include RRCs. But what explains their divergent behavior from FRCs? Is this an idiosyncratic fact or is it principled?

Relatedly, Samvelian (2008) notes that the Kurdish language Kurmanji differs from iPersian in permitting *Ezafe* before FRCs (28). 7

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7. Samvelian (2008) cites the Kurdish language Sorani as also allowing *Ezafe* before FRCs. We discuss Sorani and other relative clause data in § 3.3.1.
(28) a.  mirov=ê  [ku min dit-i ]
Man=EZ.MASC.SG that 1.OBL see-past
“the man that I saw” (Kurmanji, Samvelian 2008: 347)

b.  çirok=a  [ku wi ji min re got ]
story=EZ.FEM that 3S.OBL ADP 1S.OBL ADP say.pst.3s
“The story that he told me” (Kurmanji, Songül Gündoğdu p.c.)

Again, Samvelian could modify the definition of [dep] for Kurmanji to include FRCs along with NPs, APs and PPs. But what explains the different behavior of iPersian vs. Kurmanji? Is this idiosyncratic variation to be listed, or does it trace to something systematic?8

A potential answer, to which we will return in detail in the next section, is suggested by additional relative clause examples from iPersian (29a)–(29b) and from Kurmanji (29c).9,10

8. We note that Kahnemuyipour’s (2014) analysis also yields no clear account of variation in RCs either within iPersian or across Iranian. On the roll-up account Ezafe would apparently be generated by head movement of X to Agr with RRCs but not with FRCs. What predicts this? And what is different with respect to (ib) in Kurmanji?

(i)  a.  NP  Ez  RRC  X  NP
    b.  NP  *Ez  FRC  X  NP

9. Some iPersian speakers prefer variants of (29b) with two FRCs, e.g. (i). However (29b) is also acceptable.

(i)  dust=e  javan-i  [ke molaqat=kard-i]  [ke as  Swis bargashte]
Friend=ez youth-def that meeting=did-2sg that from Swiss returned
“a friend of the young man that you met that recently returned from Switzerland”

10. Songül Gündoğdu reports that Kurmanji speakers accept (30); but they regard (i), where Ezafe attaches to an overt pronominal element, as more natural:

(i)  çirok=a  [ku wi ji min re got ]  ew-a  [ku di
story=EZ.F that 3S.OBL ADP 1S.OBL ADP say.pst.3s. EZ.F that ADP
rojnamê  da  derket ]
newspaper.OBL PART come.out.pst.3sg
“The story that he told me that was published in the newspaper”

The status of the pronominal element in ew-a is unclear to us. Gündoğdu (p.c.) suggests it might be an instance of so-called ‘demonstrative/anaphoric Ezafe’ (Haig 2011). If so the gloss of (i) is actually closer to “The story that he told me, the one that was published in the newspaper”. If ‘one’ takes ‘story-published-in-the-newspaper’ as its antecedent, this will be equivalent to the standard interpretation of recursive RCs as expressing successive intersection.
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(29) a. jævan=e [æz Swis bær-gašt-e]=ye
   young.man=EZ from Switzerland re-turn.pst-PTCP]=EZ
   [estexdam=šod-e dær vezaræt=e færhæng] (iPersian)
   employment=got-PTCP in ministry=EZ education
   “the young man back from Switzerland employed by the Ministry of Education”

b. dust=e [æz Swis bærgæšte]=ye [jævan-i [ke molaqat=kærd-i]]
   friend=EZ from Swiss returned=EZ youth-INDF that meet.pst-2sg
   “the recently returned friend from Switzerland of the young man that you met”

(29c) Ø
   çîrok=a [ku wi ji min re got ] ya [ku di
   story=EZ.F that 3S.OBL ADP 1S OBL ADP say.pst.3S. EZ.F that ADP
   rojnamê da derket ]
   newspaper.OBL PART came3SG
   “The story that he told me that was published in the newspaper”

   (Kurmanji, Songül Gündoğdu p.c.)

In (29a)–(29b) we see that Ezafe not only precedes RRCs in iPersian, it follows them as well, here appearing after the participle bargašte “returned”. In (29c) we see that Ezafe not only precedes FRCs in Kurmanji, it also follows them, appearing after the finite verb got “say.pst.3s”. Samvelian’s phrasal affix analysis crucially assumes that Ezafe is nominal morphology; i.e., whether [EZ] combines with a lexical word or with NP, passing down its right edge, [EZ] must be realized on a nominal stem. (29a)–(29c) therefore imply for Samvelian that iPersian participles and Kurmanji finite verb complexes occurring inside relative clauses must be fundamentally nominal in character.11 This suggests the following key generalization argued for explicitly by Samiian (1983, 1994) and Karimi & Brame (1986, 2012),12 but which Samvelian’s analysis neither states nor captures:

Generalization 1: Ezafe occurs between nominal elements.

If Ezafe occurs on nominal stems and whatever Ezafe can precede it can also follow, then this amounts to saying Ezafe always occurs between nominals.

11. Anderson (2013) notes that what separates a phrasal affix analysis of a morpheme X from an analysis of X as a clitic is precisely whether X exhibits selectivity in the stems it attaches to. Anderson argues that an analysis of the English genitive morpheme ’s as in (24) above is mistaken precisely because ’s exerts no constraints on the stems it affixes to. Under this reasoning, Samvelian’s analysis of Ezafe as a phrasal affix is justified to the extent that Ezafe is selective in the relevant sense: that it attaches to nominal stems.

3.2.2 *Ezafe and postnominal PP modifiers*

Consider next *Ezafe* distribution with respect to post-nominal PP modifiers. As noted by Samiian (1983, 1994), Persian prepositions appear to divide into three distinct classes in relation to their complements; there are Ps that *forbid* *Ezafe* before their object (Class 1), Ps that *allow* *Ezafe* before their object (Class 2), and Ps that *require* *Ezafe* before their object (Class 3).

(30) **Class 1 Ps (forbid Ezafe)**
- `æz *(=e) Maryam` from (=EZ) Maryam
  “from Maryam”
- `ba *(=ye) Hæsæn` with (=EZ) Hasan
  “with Hasan”
- `be *(=ye) Ali` to (=EZ) Ali
  “to Ali”
- `dær *(=e) Maryam’` in/at/on (=EZ) Maryam
  “in/at/on Maryam”

(31) **Class 2 Ps (allow Ezafe)**
- `bala (=ye) divar` up (=EZ) wall
  “up the wall”
- `jelo (=ye) Hasæn` in front (=EZ) Hasan
  “in front of Hasan”
- `ru (=ye) miz` on (=EZ) table
  “on top of the table”
- `tu (=e) divar` inside (=EZ) wall
  “inside the wall”

(32) **Class 3 Ps (require Ezafe)**
- `beyn *(=e) mæn-o to` between =EZ me-and you
  “between you and me”
- `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. *baæqæl *(=e) *dar
   by =ez door
   “by the door”

Samiian (1994) labels Class 1 Ps “True Prepositions” and she labels Class 2/Class 3 Ps “Nominal Prepositions”. *Ezafe is licensed with the latter set because of the nominal status of the P to which -Ez attaches.  

iPersian PPs can, like iPersian relative clauses, function as adjunct modifiers of nominals, plausibly with a structure in (33a) (compare (33b)).

(33) a. **Modifying PP**
   NP
   NP  PP
   …  …

b. **Modifying RC**
   NP
   NP  CP
   …  …

Examples of adjunct PP modifiers headed by Ps of different classes are given in (35).

(34) a. *šam *(=e) ba *Hæsæn
dinner =ez with Hasan
   “dinner with Hasan”
   Class 1 P: *ba

b. *dívar *(=e) *jelo *Ali
   wall =ez in-front-of Ali
   “wall in front of Ali”
   Class 2 P: *jelo

c. *miz *(=e) *baæqæl *(=e) *Hæsæn
table =ez near =ez Hasan
   “table near Hasan”
   Class 3 P: *baæqæl

---

13. Samiian (1983, 1994) says little about the source of alternation in Class 2 Ps; we return to this important issue in the next section.
Note that in (34) *Ezafe* occurs not only inside PP, as determined by the class of its P head, in some cases it also occurs outside PP on the modified nominal. Interestingly, presence of *Ezafe* on the nominal correlates with the class of preposition heading PP. Specifically, with Class 1 Ps, Ez is allowed on the preceding NP (35a). With Class 2 Ps, Ez is required on the preceding NP (35b). And with Class 3 Ps, Ez is required on the preceding NP (35c).

(35)  

a. -**Ez and P1’s**

```
NP  
NP  
...(-Ez)  
P1-__  
  allowed  =>  disallowed
```

b. -**Ez and P2’s**

```
NP  
NP  
...Ez  
P2-(Ez)  
  required  =>  allowed
```

c. -**Ez and P3’s**

```
NP  
NP  
...Ez  
P3-Ez  
  required  =>  required
```

These correlations are illustrated by the examples in (36):

(36)  

a. [[NP šam] (=e) [pp ba *Hæsæn]]  
"dinner (=ez) with Hasan"

b. [[NP divar] *(=e) [pp jelo Ali]]  
"wall (=ez) in-front-of Ali"

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c. \([\{NP \text{ } \text{divar} \} * (=e) \{pp \text{ } \text{jelo} \} = \text{ye} \text{ Ali}\}] \quad \text{Class 2 P: jelo}

wall \quad \text{in-front-of} \quad \text{ez} \quad \text{Ali}

“wall in front of Ali”

d. \([\{NP \text{ } \text{miz} \} * (=e) \{pp \text{ } \text{beqæl} \} = \text{e} \text{ Hasan}\}] \quad \text{Class 3 P: beqæl}

table \quad \text{near} \quad \text{ez} \quad \text{Hasan}

“table near Hasan”

(36a) shows Class 1 *ba*, which forbids a following *Ezafe*; here *Ezafe* on the preceding nominal is optional. (36b) shows Class 2 *jelo* with no PP-internal *Ezafe*; here *Ezafe* is required on the preceding NP. (36c) shows *jelo* again, but with *Ezafe* present within PP; again *Ezafe* is obligatory on \([NP \text{ } \text{divar}] \) “wall”. Finally (36d) shows Class 3 *beqæl* with obligatory internal *Ezafe*; PP-external *Ezafe* is required on the preceding NP.

The pattern in (35) – specifically (35b)–(35c) – presents a serious problem for Samvelian (2007). Her account allows for a nominal α bearing *Ezafe* to require a following NP, AP, PP, etc. (37a). But it has no mechanism whereby a PP with certain properties can require a PRECEDING *Ezafe* (37b).

(37) a. α-[EZ] \rightarrow \{NP, AP, PP, RRC\} requires

b. α-[EZ] \leftarrow [PP=[EZ] \text{ NP}] requires

In other words, given that (38a) is a possible iPersian NP-PP modifier structure, with neither NP nor P bearing *Ezafe*, nothing in Samvelian’s account as it stands will rule out (38b), where again NP and P bear no *Ezafe*. As (36b) shows, this structure is ungrammatical; *divar* requires *Ezafe*.

(38) a.

```
NP
 `,--
|      |
NP    PP
|      |
sham  ba Hasan
```

b.

```
NP
 *,--
|      |
NP    PP
|      |
divar  jelo Ali
```

We believe that (37b) demonstrates a second fundamental generalization about *Ezafe* that any adequate account must capture, viz., that *Ezafe* is not present simply to signal the occurrence of a following phrase of a certain sort, as in Samvelian (2007); it is there to satisfy a “need” in that phrase.
Generalization 2:  *Ezafe* satisfies a licensing requirement in the following phrase. What (35b)–(35c) and (37b) suggest is that PPs headed by certain Ps have some requirement that a preceding *Ezafe* can discharge and without which the structure is ill-formed. This points once again, in our view, to the need to understand the class of phrases co-occurring with *Ezafe* – what unites them and what *Ezafe* supplies for them. We now turn to a theory that appears to have the right properties.

### 3.3 *Ezafe* as a case-marker

Consider the sets of examples below, involving NPs (39), APs (40), PPs (41) and QPs (42). In each, the (a) examples exhibit *Ezafe*; the remaining ones show either the iPersian preposition *æz* or *Ezafe* and *æz* alternating, with virtually identical meaning. Semantic variation across the example sets suggests that *æz* contributes very little on its own – i.e., that its content is determined contextually.¹⁴ Like *Ezafe*, *æz* seems to be present largely for grammatical reasons, with examples becoming sharply ungrammatical without it.

14. iPersian *æz* does have a contentful use as an ablative preposition meaning “from”. This use is also found with English ‘of’ in examples like (i). iPersian speakers detect ablative meaning with *æz* in some of (39)–(42), for example (39c).

(i)  a. Alice jumped out of/from the plane.
    b. Max ran out of/from the house.

---

(39) a. ye goruh =e æz danešju-yan  
    a group =EZ/of student-pl  
    “a group of the students”  
    b. ye bæste =ye æz ketab-ha-ye xæbanšenasi resid  
    a package =EZ/of book-pl-EZ linguistics arrive.pst  
    “a package of books about linguistics arrived.”  
    c. gozareš =e æz vezaræt-e faerhæng  
    report =EZ/of ministry-EZ education  
    “report of/from the ministry of education”

(40) a. negeran =e bæce.ha  
    worried =EZ child-pl  
    “worried about the kids”  
    b. deltæng æz zendegi  
    depressed of life  
    “depressed about life”  
    c. xašmgin æz nætije =ye entexabat  
    enraged of result =EZ election  
    “enraged by/at/about the election result”

---

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(41) a. $dær-tul =e$ $mah =e$ Fevriye
   during $=ez$ month $=ez$ February
   “during the month of February”

   b. $qebl =e/æz$ nahar
   before $=ez/of$ lunch
   “before lunch”

   c. $bed =e/æz$ molaqat $=e$ Hasan
   after $=ez/of$ visit $=ez$ Hasan
   “after the meeting with Hasan”

(42) a. $bištær =e$ ketab-ha
   most $=ez$ book-pl
   “most of/among the books”

   b. $bezi æz$ ketab-ha
   some of book-pl
   “some of/among the books”

   c. $cænd=ta =ye/æz$ anha
   few $=ez/of$ them
   “few of them”

   d. $hic kodum =ye/æz$ anha
   not any $=ez/of$ them
   “none of them”

English exhibits the same broad parallelism between Ezafe and æz insofar as English can often gloss iPersian Ezafe quite naturally with ‘of’, its æz-equivalent in these contexts (43). Here again the semantic contribution by ‘of’ is minimal. The preposition seems to be present for purely grammatical reasons.

15. The close parallelism between iPersian Ezafe and English of is noted explicitly in Karimi & Brame (1986, 2012) and Samiian (1983, 1994). Note that Kahnemuyipour’s (2014) roll-up analysis would appear to require an entirely different treatment of æz and Ezafe, since the latter is supposedly a manifestation of agreement whereas the former is a preposition. Likewise Samvelian’s (2007) analysis would appear to make the parallels accidental.

16. The status of Ezafe seems particularly clear in Northern Kurdish (Kurmanji) where nominals following Ezafe are overtly inflected for oblique case, exactly as they would be following a preposition; cf. (i):

   (i) a. $=e$ min
       $ez$ 1sg.obl
       “mine” (e.g., çav-e min “my eye”/“eye of mine”, Pikkert 2010)

   b. $ji$ min
       from 1sg.obl
       “from me”

Curiously, Franco et al. (2015) interpret the presence of oblique case-marking on Kurmanji nominals following Ezafe as evidence against the case-marking hypothesis. Presumably, however, the
same reasoning should apply to (ib): case-marking on nominals following prepositions should constitute evidence against the idea that the latter case-mark their objects. This is virtually a *reductio ad absurdum* in our view.
Chomsky (1981) proposes that “of” is present in the English expressions given as glosses in (43) in order to satisfy a case licensing requirement on NPs (i.e., on [+N] elements). In essence, nominal items require case, but nominal elements do not assign or check case. It follows that when two nominals X, Y are adjacent (44a), a case assigner like “of” will be required between them (44b) to assign case to the rightward Y. iPersian æz “of” can be analyzed in the same terms as (44c):

\[
\begin{array}{ccc}
\text{non-case-assigning} & \text{case-assigning} & \text{case-requiring} \\
\text{a. } X[+N] & \not\Rightarrow & Y[+N] \\
\text{b. } X[+N] & \not\Rightarrow & [ \text{PP of } \Rightarrow Y[+N] ] \quad \text{English “of’} \\
\text{c. } X[+N] & \not\Rightarrow & [ \text{PP æz } \Rightarrow Y[+N] ] \quad \text{iPersian æz}
\end{array}
\]

Samiian (1994) proposes essentially the same picture for iPersian Ezafe, suggesting that -æz is a case-assigning element that is merged into the first nominal X and provides case assignment for the second nominal Y (45a). Larson & Yamakido (2008) offer a minor variant of this picture wherein Ezafe is, in effect, a clitic version of æz, heading its own phrase (EzP) and cliticizing onto the preceding nominal stem (45b):

\[
\begin{array}{ccc}
\text{non-case-assigning} & \text{case-assigning} & \text{case-requiring} \\
\text{a. } X[+N] - æz & \Rightarrow & Y[+N] \quad \text{iPersian Ezafe} \\
\text{b. } X[+N] - æz & \Rightarrow & [ \text{EzP } æz \Rightarrow Y[+N] ] \quad \text{iPersian Ezafe}
\end{array}
\]

Samiian’s case-marking proposal (on either variant) directly accounts for the two key generalizations noted earlier, viz.: 

Generalization 1: Ezafe occurs between nominal elements.
Generalization 2: Ezafe satisfies a licensing requirement in the following phrase.

Both generalizations derive from case theory as discussed – from the inability of nominal items to assign (or check) case and the licensing requirement on nominal elements that they receive case (or have it checked on them) and from the problem posed by adjacent nominals (44a).

3.4 Predictions of the case-marking analysis

The case-marking analysis makes a range of interesting predictions that distinguish it sharply from the three accounts reviewed above.
3.4.1 Relative and complement clauses

We noted earlier that iPersian *Ezafe* is unavailable before finite relative clauses (FRCs) (46a) but is required before reduced ones (RRCs) (46b).

(46) a. *in jævan (=e) [ke æz Swis bærgæšte æst]*
   This youth =EZ that from Swiss returned-be.3sg
   “this youth who has returned from Switzerland”

b. *in jævan =e [æz Swis bærgæšt e]*
   this youth =EZ from Swiss return-PTCP
   “this youth returned from Switzerland”

Neither Karimi (2007) nor Kahnemuyipour (2014) account for this divergence. Since FRCs and RRCs are both predicates semantically, no differences are expected under the first account. And since FRCs and RRCs are both modifiers semantically, no differences are expected under the second account. Under either, why should finite predicates/modifiers behave differently than reduced ones? Furthermore, we saw that Samvelian (2007, 2008) simply lists the categories that can follow *Ezafe* in her [dep] feature, which offers no explanation for the difference in (46a)–(46b). Why should non-finite RCs be marked as “dependents” and not finite ones, given that the dependency relation is the same in both cases: attributive modification?

Similar results hold with iPersian complement clauses. *Ezafe* is unavailable in nominals before finite clausal complements (FCCs) (47a), but required before their reduced counterparts (RCCs) (47b).

(47) a. *in omid (=e) [ke Shah æz Iran xahæd =raeft]*
   this hope =EZ that Shah from Iran will=go
   “the hope that the Shah will leave Iran.”

b. *in omid (=e) [raeftæn-e Shah æz Iran]*
   this hope =EZ go.inf-ez Shah from Iran
   “the hope of/for the Shah’s leaving Iran.”

Karimi (2007) and Kahnemuyipour (2014) make no predictions about this difference since complement clauses are neither predicates nor modifiers semantically, but rather arguments. In particular, their analyses cannot relate the absence/presence of *Ezafe* in (47) to its absence/presence in (46), despite the evident shared feature of finiteness/non-finiteness, respectively. And again, although Samvelian (2007, 2008) could certainly omit finite CPs in her [dep] feature specification for *Ezafe* while including non-finite XPs, this provides no explanation for the difference. Why is “dependency” expressed by *Ezafe* with the one kind of propositional complement but not with the other? And why do relative and complement clauses pattern similarly across the two different dependency-types: modification vs. complementation?
By contrast, the case-marking analysis yields clear predictions in this domain. Assuming Ezafe is nominal morphology (or a nominal clitic) present to satisfy a case-marking requirement on the following phrase, its appearance is expected accordingly. Specifically: 17

Prediction 1: *Ezafe* should occur before a clausal projection XP, if XP has nominal status (48a).

Prediction 2: *Ezafe* should attach to a clausal projection XP, if XP’s final element α is a nominal (48b).

(48) Ezafe with clausal projections XP
   a. [ α-EZ XP ]        b. [ [ XP … α ] -EZ YP ]

We examine these predictions in detail below.

3.4.1.1 Prediction 1: iPersian

Traditional grammar refers to clausal complements as ‘noun clauses’ and to relative clauses as ‘adjectival clauses’ in virtue of their functions. Complement clauses appear to supply propositional arguments of a predicate, much as nominals supply referring arguments of a predicate. Relative clauses supply attributive modifiers of a noun much as (intersective) attributive adjectives supply attributive modifiers of a noun. As Givón (1990: 498) notes, when clauses take on “a prototypical nominal position (or function) … within another clause” they are often nominalized. 18 Unlike English, which realizes finite/non-finite complement and finite/non-finite relative clauses in the same positions, iPersian sharply distinguishes the two types positionally, in both the verbal and the nominal domain.

iPersian is fundamentally a verb-final language with nominal arguments occurring almost exclusively before V. As many authors have noted, whereas iPersian non-finite complement clauses occur preverbally, like nouns, iPersian finite complements diverge in being uniformly postverbal. Compare (49)–(51), which illustrate a variety of iPersian construction types and where the clausal/clause-like complements are bracketed and where the verb is boldfaced to highlight its position relative to them. 19

17. By ‘clausal projection XP’ we refer to any argument XP with propositional semantics – type <t> or <s,t> – or any attributive XP – type <e,t> – deriving from a phrase with propositional semantics, such as a relative clause.

18. For useful discussion of relative clause and clausal complement typology and nominal properties, see Lehmann (1986, 1988) and Schmidtke-Bode (2014).

19. N. Shafiei (p.c.) notes that presence/absence of the modal correlates with controller choice in the embedded verb. Without *bayæd* Ali is the controller; with *bayæd* control is ambiguous between Maryam and Ali.
(49) a. **Finite control clause**
   Mina Ali-[ro] qhane=kærd [ke (bayæd) be-re]
   Mina Ali-[acc] persuaded that (should) sbjv-go.3sg
   “Mina persuaded Ali that he/she should leave.”

   b. **Non-finite control clause**
   Mina Ali-[ro] [be ræftæn] qhane=kærd.
   Mina Ali-[acc] to go.inf persuaded
   “Mina persuaded Ali to leave.”

(50) a. **Finite perception V complement clause**
   Mina did [ke Ali ræft].
   Mina saw that Ali leave.pst.3sg
   “Mina saw that Ali left.”

   b. **Non-finite percept V complement clause**
   Mina [ræftæn=e Ali]-ro did.
   Mina go.inf=ez Ali-[acc] see.pst.3sg
   “Mina saw Ali leave'/Mina saw Ali’s leaving.”

(51) a. **Finite clausal complement**
   Mina færz=kærd [ke Ali gonahkar-e].
   Mina considered that Ali guilty-be.prs.3sg
   “Mina considered/assumed that Ali is/was guilty.”

   b. **Non-finite clause complement**
   Mina [gonahkar budæn=e Ali]-ro færz=kærd.
   Mina guilty be.inf=ez Ali-[acc] considered
   “Mina considered/assumed Ali to be guilty.”

   c. **Small clause complement**
   Mina Ali -acc guilty considered
   “Mina considered (assumed) Ali guilty.”

In each case the non-finite complements occur leftward of the verb, like nominal arguments, whereas the finite ones occur uniformly rightward. In Givón’s terms, then, iPersian nonfinite complements occupy “prototypical nominal positions” in VP and hence might be expected to show noun-like (iPersian) behavior. By contrast iPersian finite complements do NOT occupy prototypical nominal positions, and hence noun-like behavior is not expected.

A strikingly similar pattern holds in iPersian nominals. Samiian (1983, 1994) argues that the unmarked sequence of Ezafe-marked constituents is as in (52a), illustrated by (52b), where the outermost NP is a genitive:

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Interestingly, the genitive appears to mark a right edge in the NP domain analogous to the verb in the VP domain. That is, the pre-genitive domain includes uncontroversially nominal complements and modifiers of N, including non-finite propositional ones; these all bear *Ezafe*. By contrast, the post-genitive domain includes PPs with no *Ezafe*-marking (internally or externally) and finite propositional complements and modifiers of N.

To illustrate these points, Example (53a) shows the noun *qol* “promise” with a nonfinite propositional complement *amađæn (=e) be Paris* “coming to Paris”. *Ezafe* is required. (53b)–(53c) show that insertion of a genitive must occur at the right edge and not postnominally. Thus the nonfinite propositional complement must precede the genitive like other [+N] complements under (52a). (53d) shows that a goal PP complement *be Hæsæn* “to Hasan”, with no *Ezafe*-marking, must be added outside the genitive.

(53) a. *qol =e [amađæn (=e) be Paris]*
   
   promise =ez come.INF =ez to Paris
   
   “the promise of coming to Paris” / “the promise to come to Paris”

b. *qol =e [amađæn (=e) be Paris] =e [NP Ali]*
   
   promise =ez come. INF =ez to Paris =ez Ali
   
   “Ali’s promise of coming/to come to Paris”

c. *qol =e [NP Ali] =ye [amađæn (=e) be Paris]*
   
   promise -ez Ali =ez come.INF = ez to Paris
   
   “Ali’s promise of coming/to come to Paris”

d. *qol -e [amađæn (=e) be Paris] -e [NP Ali] [be Hæsæn]*
   
   promise -ez come.INF =ez to Paris -ez Ali to Hasan
   
   “Ali’s promise to Hasan of coming/to come to Paris”

Compare now (54a)–(54d). Example (54a) shows the same noun *qol* “promise” with a finite propositional complement *ke miyad Paris* “that he’ll come to Paris”. *Ezafe* is now excluded. (54b)–(54c) show that insertion of a genitive must occur post-nominally, and not at the right edge. Thus the finite propositional complement must follow the genitive, outside the *Ezafe* domain. (54d) shows that the goal PP complement *be Hæsæn* “to Hasan”, with no *Ezafe*-marking, accompanies the finite clause outside the genitive.
(54) a. \textit{in qol} (*=e) [ke miyad Paris]  
this promise =ez that come-to Paris  
“the promise that he will come to Paris”

b. \textit{qol} =e Ali [ke miyad Paris]  
promise =ez Ali that come-to Paris  
“Ali’s promise that he’ll come to Paris”

c. \textit{*in qol} [ke miyad Paris] =e [NP Ali]  
this promise that come-to Paris =ez Ali  
“Ali’s promise that he’ll come to Paris”

d. \textit{qol} =e Ali [be Hæsæn] [ke miyad Paris]  
promise =ez Ali to Hasan that come-to Paris  
“Ali’s promise to Hasan that he’ll come to Paris”

An identical pattern is observed with relative clauses. As noted above, reduced – i.e., non-finite – relative clauses require \textit{Ezafe} (55a). Insertion of a genitive must occur at the right edge of the noun phrase (55b), not postnominally (55c). The nonfinite propositional modifier thus patterns like other [+N] attributives under (52a). (55d) shows that the PP modifier \textit{bi Hæsæn} “without Hasan”, with no \textit{Ezafe}-marking, must be added outside the genitive, outside the \textit{Ezafe} domain.

(55) a. \textit{æks} * (=e) [\textit{cap}=šode dær ruzname]  
photo =ez published in newspaper  
“the photo published in the newspaper”

b. \textit{æks} =e [\textit{cap}=šode dær ruzname] =ye [NP Ali]  
photo =ez published in newspaper =ez Ali  
“Ali’s photo published in the newspaper’

c. \textit{*æks} =e [NP Ali] =ye [\textit{cap}=šode dær ruzname]  
photo =ez Ali =ez published in newspaper  
“Ali’s photo published in the newspaper”

d. \textit{æks} =e [\textit{cap}=šode dær ruzname]=ye [NP Ali] [bi Hæsæn]  
photo =ez published in newspaper =ez Ali without Hasan  
“Ali’s photo without Hasan published in the newspaper”

Compare now (56a)–(56d). Example (56a) shows that finite relative clauses reject \textit{Ezafe}. (56b) and (56c) show that insertion of a genitive must occur postnominally, and not at the right edge. Thus the finite relative must occur after the genitive, outside the \textit{Ezafe} domain. (55d) shows that the PP modifier \textit{bi Hæsæn} “without Hasan”, with no \textit{Ezafe}-marking, must accompany the finite relative outside the \textit{Ezafe} domain.

(56) a. \textit{æks} (*=e) [ke \textit{čap}=šode-bud dær ruzname]  
photo =ez that published-be.pst in newspaper  
“the photo that had been published in the newspaper”
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b. Æks =e [NP Ali] [ke čap=šode-bud dær ruzname]
   photo =EZ Ali that published-be.pst in newspaper
   “Ali’s photo that had been published in the newspaper”

   photo that published-be.pst in newspaper =EZ Ali
   “Ali’s photo that had been published in the newspaper”

d. æks =e [NP Ali] [bi Hæsæn] [ke čap=šode-bud
   photo =EZ Ali without Hasan that published-be.pst
   dar ruzname] in paper
   “Ali’s photo without Hasan that had been published in the paper”

iPersian thus appears to distinguish nominal versus non-nominal elements positionally within VP and NP, and in similar ways. Within VP, nominal arguments are predominantly preverbal whereas non-nominal elements can, and in some cases must, appear postverbally. Non-finite propositional complements pattern like nominals in occurring preverbally whereas finite complements are always postverbal. Within NP, nominal ([+N]) elements are pre-genitival whereas non-nominal elements are post-genitival. Non-finite complement and relative clauses pattern like [+N] elements in requiring Ezafe and in occurring before the genitive, whereas finite complement and relative clauses occur uniformly after the genitive. Prediction 1 regarding Ezafe with clausal projections (47a) is thus supported. iPersian Ezafe appears only before clausal elements showing the external positional distribution of [+N] elements.

3.4.1.2 Prediction 1: iPersian vs. Sorani and Kurmanji

We noted above that whereas iPersian forbids Ezafe before finite relative clauses (FRCs), both Central Kurdish (Sorani) and Northern Kurdish (Kurmanji) require it (57). Sorani and Kurmanji FRCs thus resemble iPersian RRCs in requiring Ezafe.

(57) a. in dastan (*=e) [ke be men goft ]
   this story =EZ that to me say.pst.3sg
   “The story that he told me”

b. chirok-ækæ=y [(kæ) æw beæ mn-I kut ] (Sorani FRC)
   story-def-EZ that he to me-cl.3sg told
   “The story that he told me” (Abdollahnejad p.c.)

c. çirok=a [ku wi ji min re got ]
   story=EZ.FEM that 3s.OBL ADP 1s.OBL ADP say.pst.3sg
   “The story that he told me” (Kurmanji FRC) (Songül Gündoğdu p.c.)

Compare now the situation with finite clausal complements (FCCs) of nouns. In all three languages, Ezafe is forbidden (58):

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The case-marking analysis of *Ezafe* makes straightforward predictions about the source of these cross-linguistic patterns. If *Ezafe* is required before [+N] categories and blocked before [−N] categories, then the distribution in (57)–(58) must reflect varying ‘nominality’ in the relevant clause types. Specifically,

**Predictions:**

1. In iPersian FRCs, C is non-nominal (i.e., a non-nominal complementizer)
2. In Kurmanji and Sorani FRCs and FCCs, C is nominal

We thus derive the following claims about the complementizer inventories of iPersian, Sorani and Kurmanji:

- iPersian has a [−N] complementizer *ke*, occurring in FRC and FCCs
- Sorani has a [+N] relative pronoun *ka*, occurring in FRCs.
- Sorani has a [+N] complementizer *ka*, occurring in FCCs.
- Kurmanji has a [+N] relative pronoun *ku*, occurring in FRCs.
- Kurmanji has a [+N] complementizer *ku*, occurring in FCCs.

In brief, then, iPersian is predicted to have a uniformly non-nominal complementizer inventory whereas Kurmanji and Sorani have uniformly nominal complementizer inventories.

The situation hypothesized here for Kurmanji and Sorani, with homophonous complementizer-relative pronoun pairs (*ka-ka/ku-ku*, respectively), is familiar from other languages. As Manzini (2010) observes, the pattern is widely attested in Romance. In (59) from Italian, the CP element *che* appears as a sentential
complementizer in (59a), as a relative pronoun in (59b), as a *wh*-phrase in (59c), and as a *wh*-determiner in (59d).

(59) a. *So che fai questo*
   Know.1sg that do.2sg this
   “I know that you do this.”

b. *Il lavoro che fai è noto*
   the work that do.2sg is well-known
   “the work that you do is well-known”

c. *Che fai?*
   What do.2sg
   “What are you doing”

d. *Che lavoro fai?*
   Which job do.2sg
   “Which job do you do?”

Note that in at least (59c)–(59d), *che* has uncontroversial nominal character, which Manzini (2010) argues to be the general situation with Romance complementizers. We cannot pursue the full consequences of these predictions here. But some preliminary data suggest they may be on the right track. Cross-linguistically, resumptive pronouns occur in relative clauses introduced by a complementizer, but not in ones introduced by a relative pronoun (McCloskey 2002; Lavine 2003; Merchant 2004; Citko 2004). In other words, relative pronouns and resumptive pronouns are mutually exclusive (Downing 1978). Interestingly, iPersian and Kurmanji FRCs appear to differ in this respect. As shown in (60) (from Aghaei 2006), iPersian FRCs permit resumptive pronouns in non-subject positions (boldfaced):

(60) a. *doxtær-I [ke mæn (un-o) dus-eš dar-æm ] vared-e kelas šod*
   girl-INdf that I (her-ACC) friend-her have-1sg entry-EZ class did
   “The girl whom I like (her) came into the class.”

   city-INdf that Ali (in that) life=dur-do-3sg.
   From here far-is
   “The city where Ali lives (in there) is far away from here.”

By contrast, Kurmanji FRCs do not permit resumptive pronouns in non-subject positions. In direct object positions resumptive pronouns are simply ungrammatical (61):

(61) a. *doxtær-I [ke mæn (un-o) dus-eš dar-æm ] vared-e kelas šod*
   girl-INdf that I (her-ACC) friend-her have-1sg entry-EZ class did
   “The girl whom I like (her) came into the class.”

   city-INdf that Ali (in that) life=dur-do-3sg.
   From here far-is
   “The city where Ali lives (in there) is far away from here.”

20. We are grateful to Songül Gündoğdu (p.c.) for the data in (61)–(63) and their discussion.
(61) a. \(\text{keçik}=a \ [\text{ku min } (*\text{wê}) \text{ doh } \text{dit }] \ \text{zehf} \ \text{rind} \ \text{bû} \)
   Girl=ez.f that1s.oobl her yesterday see.pst.3sg very pretty was
   “the girl whom I saw (*her) yesterday was very beautiful.”

b. \(\text{mal}=a \ [\text{ku } \text{ez } (*\text{wê}) \ \text{çû-m }] \ \text{zehf} \ \text{xweş} \ \text{bû} \)
   house=ez.f that 1s.dir it go.pst.1sg very nice be.pst.3sg
   “the house that I went to (*it) was very nice.”

In P-object position, Kurmanji must appeal to a ‘contracted adposition’ strategy
that suppresses the pronoun. Thus in (62a) the contracted adposition \(\text{jê} \) appears in
place of the full PP with pronoun \(\text{ji wê} \) ("to her"), which is ungrammatical (62b).
Similarly in (63a), the contracted \(\text{lê} \) appears in place of \(\text{li wî} \) ("in there"), which is
again ungrammatical (63b).

(62) a. \(\text{keçik}=a \ [\text{ku min } \text{jê} \ \text{ra } \text{gul } \text{şand}] \)
   Girl=ez.f that 1s.oobl ADP.3S.OBL Part. rose.dir send.pst.3sg
   çû Stenbol-ê
   go Istanbul-oobl
   “The girl whom I sent roses [to her] went to Istanbul”

b. \(^*\text{keçika} \ [\text{ku min } \text{ji wê} \ \text{ra } \text{gul } \text{şand}] \ \text{çû} \ \text{Stenbolê} \).

(63) a. \(\text{şehr}=a \ [\text{ku } \text{ew } \text{lê} \ \text{di-ji }] \ \text{ji } \text{vir } \text{dûr} \ \text{e} \)
   City=ez.f that 3s.dir ADP.3S.OBL PROG-live.prs.3s ADP here far is
   “The city where s/he lives (in there) is far away from here.”

b. \(^*\text{şehra ku } \text{ew } \text{li wî } \text{dijî } \text{ji } \text{vir } \text{dûr} \ \text{e} \).

Given the generalization above, the possibility of resumptive pronouns in iPersian
FRCs suggests that \(\text{ke} \) is a simple complementizer. By contrast, the impossibility of
resumptive pronouns in Kurmanji is explained if \(\text{ku} \) is a relative pronoun. These
results thus provide tentative support for our predictions.

3.4.1.3 Prediction 2: Ezafe recursion with RCs
Whereas Prediction 1 concerns the external character of a complement or relative
clause – the status of the larger projection as \([\pm N]\), Prediction 2 concerns elements
internal to the clause – their character as (non-)nominal and hence potential hosts
for an adnominal clitic like \(\text{Ezafe} \).

External vs. internal nominality bears on the possibility of \(\text{Ezafe} \) recursion relative
clauses. We noted that iPersian participial relatives behave like other \([+N]\) items
in so far as they bear \(\text{Ezafe} \) and occur leftward of a genitive. This accords with the
general, widely-observed nominal character of participial clauses (Krause 2001).
We also noted in (29a), (29b) (repeated below as (64)) that iPersian participial
relatives show recursion with \(\text{Ezafe} \). Under the analysis of \(\text{Ezafe} \) as a nominal clitic
(or nominal morphology), this possibility requires \([+N]\) status for the clause-final
participle (*bargaşte*). Again this accords with widely noted generalizations regarding the adjectival ([+N]) status of lexical participles.

(64) a. *jaevan=ez Swis bærgæšt-e=ye estexdam*
young man=ez from Swiss return.pst-ptcp=ez employment

*šod-e dær vezaret=ez faerhæng*  
get.pst-ptcp in ministry-ez education

“The young man back from Switzerland employed by the Ministry of Education”

b. *dust=ez Swis bærgæšte=ye jaevan-i ke molaqat-kærd-i*
friend=ez from Swiss returned=ez youth-ind that meet-did-2sg

“The recently returned friend from Switzerland of the young man that you met”

Thus the combined external-internal nominal character of iPersian participial relatives correctly predicts the possibility of *Ezafe* recursion.

Compare now the behavior of Northern Kurdish (Kurmanji) and Middle Kurdish (Sorani). Whereas both Kurdish variants exhibit *Ezafe* before a finite relative clause (65), only Kurmanji allows *Ezafe* recursion (65a); Sorani rejects it (65b).

(65) a. *çîrok=a [ku wi ji min re got]*
*Story=ez.fem that 3s.obl adp 1s.obl adp say.pst.3s*

“The story that he told me”

(Kurmanji, Songül Gündoğdu p.c.)

b. *chirok-ækæ=ye [(kæ) æw bæ mn-i kut]*
*story-def=ez that he to me-cl.3sg told*

“The story that he told me”

(Sorani FRC, Elias Abdollahnejad p.c.)

---

21. Interestingly, although Kurmanji and Sorani exhibit participial modifiers with *Ezafe*, participial relative clauses are apparently unavailable as opposed to full FRCs. These points are illustrated by (i)–(ii) from Kurmanji (Songül Gündoğdu p.c.):

(i) a. *birin=a dermankir-i*
Wound=ez.f treat-prt

“The wound treated”

b. *nan=ê may-i*
bread=ez.m stay-prt

“The bread being left over”

(ii) a. *birin=a [bi destê Betul dermankir-i]*
Wound=ez.f by Betul treat-prt

Intended: “The wound treated by Betul”

b. *birin=a [ku bi destê Betul hati-ye dermankirin]*
Wound=ez.f that by Betul come.pst-3sg to treat

“The wound treated by Betul”
(66) a. çırı̈k=a [ku wi ji min re got ] ya [ku Story=EZ.F that 3S.OBL ADP 1S.OBL ADP say.PST.3S. EZ.F that ADP di rojnamê da derket] newspaper.OBL PART come out.PST.3SG

“The story that he told me that was published in the newspaper”

(Kurmanji, Songül Gündoğdu p.c.)

b. chirok-aka=y [(ka) aw ba amn-i kut] (*=y) [(ka) la rozhnama story-DEF=EZ that he to me-CL.3SG told =EZ that in newspaper da blaw bo-ta-wa ] in publish has-1SG-been

“The story that he told me that has been published in the paper.”

(Sorani, Elias Abdollahnejad p.c.)

Thus whereas both Kurmanji and Sorani finite relative clauses must be externally nominal under the case-marking analysis (Prediction 1), it appears Kurmanji must also be internally nominal – i.e., the apparent finite verb stem got “say.PST.3S” must be underlingly nominal, despite surface appearances. Otherwise ya would not be attaching to a nominal stem, contra assumptions (Prediction 2).

22. Songül Gündoğdu reports that Kurmanji speakers accept (29c); but they regard (i), where Ezafe attaches to an overt pronoun, as more natural:

(i) çırı̈k=a [ku wi ji min re got ] ew-a [ku di Story=EZ.F that 3S.OBL ADP 1S.OBL ADP say.PST.3S. EZ.F that ADP rojnamê da derket] newspaper.OBL PART out.PST.3SG

“The story that he told me that was published in the newspaper”

The status of the pronoun element in ew-a is unclear to us. Gündoğdu (p.c.) suggests it might be an instance of so-called ‘demonstrative/anaphoric Ezafe’ (Haig 2011). If so the gloss of (i) is actually closer to ‘The story that he told me, the one that was published in the newspaper’. If ‘one’ takes ‘story-published-in-the-newspaper’ as its antecedent, this will be equivalent to the standard interpretation of recursive RCs as expressing successive intersection.

23. An alternative proposal discussed Larson et al. (2019) is that Ezafe is reanalyzed in Kurmanji from being nominal morphology to a syntactic clitic counterpart to the English common genitive’s, which criticizes freely onto a [+N] phrase to its left:

(i) a. [Fred’s opinion about the English genitive is different from mine.]
b. [The man on the Clapham omnibus’s opinion about the English genitive is poorly thought out.]
c. [Every linguist I know’s opinion about the English genitive involves functional categories.]
d. [That young hotshot who was recently hired at Princeton that I was just telling you about’s opinion about the English genitive is simply wrong.]
e. Even [that colleague who shares an office with you]’s opinion about the English genitive is not to be trusted.

(from Anderson 2013)
Although we do not yet possess clear evidence for the correctness of these conjectures, we do note that Kurmanji is the Kurdish variant occurring in closest geographical proximity to Turkish, a language in which both complement and relative clauses are well-known to display internal nominalization (Göksel & Kerslake 2005). It seems to us at least plausible that Kurmanji’s behavior might represent an areal effect. We must leave this possibility for future investigation.

3.4.2 Predictions of the case-marking analysis: PPs
The case-marking analysis also makes clear predictions with regard to iPersian NP-PP modifier structures and the distribution of Ezafe. We saw that iPersian prepositional forms divide into three classes:

Class 1: P’s that disallow Ezafe between themselves and their complement.
Class 2: P’s that allow Ezafe between themselves and their complement.
Class 3: P’s that require Ezafe between themselves and their complement.

We furthermore noted that P-class appears to condition occurrence of Ezafe on NP in NP-PP modifier structures. The pattern was as in (35) (repeated below):

(35) a. -ez and P1’s

![Diagram of -ez and P1’s]

b. -ez and P2’s

![Diagram of -ez and P2’s]

c. -ez and P3’s

![Diagram of -ez and P3’s]
Under the case-marking analysis, the distribution in (35) should reflect the nominal nature of PP. Specifically, it should be the case that, when headed by a P2 or a P3, PP is unambiguously nominal in character and hence requires Ezafe before it. But when headed by a P1, PP must be somehow ‘optionally nominal’, allowing Ezafe to be present or absent.

Larson & Samiian (2018) argue that the case-marking analysis can accommodate these facts through an elaboration of ideas by Jackendoff (1973, 1977) and Svenonius (2003) on the relation between VP and PP structure. Jackendoff (1973) establishes a basic parallelism in the complementation of V and P, with the verbal patterns in (67a)–(67d) matching the prepositional patterns in (67a′)–(67d′):

(67) **Verbal complementation**  

\begin{align*}
\text{a. } & \quad [\text{VP } V] \\
& \quad \text{laugh, cough, run, fall, etc.} \\
\text{b. } & \quad [\text{VP } V \text{ NP}] \\
& \quad \text{hit, kiss, see, etc.} \\
\text{c. } & \quad [\text{VP } V \text{ PP}] \\
& \quad \text{dash, emerge, reply, etc.} \\
\text{d. } & \quad [\text{VP } V \text{ NP PP}] \\
& \quad \text{give, send, put, etc.}
\end{align*}

**Prepositional complementation**  

\begin{align*}
\text{a'. } & \quad [\text{PP } P]^{24} \\
& \quad \text{(side), down, out, over, etc.} \\
\text{b'. } & \quad [\text{PP } P \text{ NP}] \\
& \quad \text{(side), down, out, over, etc.} \\
\text{c'. } & \quad [\text{PP } P \text{ PP}] \\
& \quad \text{into, down, from, up, etc.} \\
\text{d'. } & \quad [\text{PP } P \text{ NP PP}] \\
& \quad \text{into, down, from, to, in, etc.}
\end{align*}

In recent work these parallels have been developed further to include recognition of a functional head p, which assigns a ‘figure’/‘locatum’ role in PP and case to an object (van Riemsdijk 1990; Svenonius 2003), much as v head assigns the agent role in VP and case to an object (Chomsky 1995). In both structures, the lexical head raises to the corresponding functional head (68):

(68) a. **VP Structure**

![Tree diagram of VP structure](image)

24. See Klima (1965) and Emonds (1976) for original arguments for these forms as ‘intransitive prepositions’. 

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b. *PP Structure*

Examples (69a)–(69c) display comparable vP/pP structures; note that head raising is non-string vacuous in (69c)/(69c’).

(69)

a.  

```
  vP
    ...
    v'
      v
      VP
      laugh
      v
      V
      laugh
```

a’.  

```
  pP
    ...
    p'
      p
      PP
      down
      p
      down
```

b.  

```
  vP
    ...
    v'
      v
      VP
      hit
      v
      V
      NP
      hit
      the wall
```
Larson & Samiiian (2018) propose to capture Ezafe distribution with iPersian PPs by drawing an additional vP/pP parallelism in the domain of nominalization. Consider the internal form and external behavior of the boldfaced phrases in (70)

(70) a. \[\text{VP} \quad \text{V} \quad \text{NP}\]
    John will **destroy the evidence** of-forbidden

b. i. \[\text{NP} \quad \text{V-} \text{ing} \quad \text{NP}\]
    John's **destroying the evidence** of-optional

ii. \[\text{NP} \quad \text{V-} \text{ing of} \quad \text{NP}\]
    John's **destroying of the evidence** of-optional

b'. \[pP\]
通过 the wall

b'. \[vP\]
放 on the fish

c'. \[pP\]
从 Kyoto to Tokyo
Destroy the evidence in (70a) is 'internally verbal' in showing an accusative object; it is also 'externally verbal' in combining with a modal. The verbal gerund destroying the evidence in (70b.i) is internally verbal in showing an accusative object, but it is externally nominal in combining with a possessor. The nominal gerund destroying of the evidence in (70b.ii) is internally nominal in requiring of before the object and externally nominal in combining with a possessor. Finally, the derived nominal destruction of the evidence in (70c) is both internally and externally nominal.

Larson & Samiian (2018) propose that iPersian prepositions be analyzed in a parallel way, with 'true' P1 prepositions analogous to true verbs (71a), with P2s analogous to gerunds (71b), and with P3s analogous to derived nominals (71c).

(71)

a. \[PP P NP \]
   \[\hat{\text{šam}}[PP ba(\text{*=ye}) \text{Hæsæn}]\]
   ez-forbidden (P1)
   ‘dinner with Hasan’

b.i. [NP P NP]
   \[\text{divar-e } [\text{NP jelo } \text{Ali}]\]
   ez-optional (P2)
   ‘wall in front of Ali’

b.ii. [NP P =EZ NP]
   \[\text{divar-e } [\text{NP jelo=ye } \text{Ali}]\]
   ‘wall in front of Ali’

   c. [NP N =EZ NP]
   \[\text{miz= } [\text{NP bæqæl=e } \text{Hæsæn}]\]
   ez-required (P3)
   ‘table near Hasan’

ba Hæsæn in (71a) is ‘internally prepositional’ in showing an accusative object; it is also ‘externally prepositional’ in not showing Ezafe. Jelo Ali in (71b.i) is internally prepositional in showing an accusative object, but it is externally nominal in showing Ezafe before the phrase it heads. Jelo-ye Ali in (71b.ii) is internally nominal in requiring Ezafe before its object and externally nominal in showing Ezafe before the phrase it heads. Finally, bæqæl-e Hæsæn in (71c) is both internally and externally nominal.

Analyzing iPersian P3s as nominals as in (71c) directly explains why they require Ezafe before their complements and why the phrases they head behave nominally. As Karimi & Brame (1986, 2012, below ‘K&B’) note, the proposal also receives independent support from data like (72)–(74). (72) show that PPs headed by P3s can combine directly with demonstratives; (73) show that P3s can be pluralized; (74a) shows a P1 taking a PP headed by a P3 as its object; finally (74b) shows a P3 modified by an adjective.

(72)

a. \[\text{in/un } \text{zir}=e \text{miz}\]
   (= K&B (43a)–(43f))
   this/that under=ez table
   “This/that underspace of the table”

b. \[\text{in/un } \text{væsæt}=e \text{sendogh}\]
   this/that middle=ez trunk
   “This/that middle part of the trunk”
c. *in/un* pošt-e mašin  
*this/that* behind-ez car  
“This/that back area of the car”

(73) a. *un* zir-a=ye miz  
that under-pl=ez table  
“That those under spaces of the table”

b. *un* væsæt-a=ye otagh  
that middle-pl=ez room  
“That those middle parts of the room”

c. *in* pošt-a=ye xune  
this behind-pl=ez house  
“These back areas of the house”

(74) a. *be* zir-e miz  
to under=ez table  
“Under (directional) the table”

b. zir-e kæsif-e miz  
under=ez dirty=ez table  
“The dirty underspace of the table”

Larson & Samiian’s (2018) account of iPersian P2s extends Jackendoff’s (1977) analysis of nominal vs. verbal behavior in gerunds. Jackendoff proposes that in nominal gerunds, a nominalizing morpheme -ing attaches to the lexical V, converting it to N and determining its projection as NP. By contrast, in verbal gerunds, the nominalizer attaches to the larger VP phrase, converting it to an NP, but leaving its internal verbal structure intact. We update Jackendoff’s proposals for gerunds slightly in (75a)–(75b) below. Note that -ing’s positioning above vP in (75b) allows v to assign accusative case to the object. Structures for the corresponding derived nominal and simple vP are given in (75c)–(75d), respectively.

(75) a. **Nominal gerund** (nominalized V)

```
(75a) dP
   |       
   |       
John's  d'
   |       
   |       
d       NP
   |       
    N     PP
   |       
destroy   -ing
    |      
     |      
     |      
      |      
       |      
       |      
      NP
   the evidence
```
b. **Verbal gerund** (nominalized vP)

```
    | dP
   /|
  /  |
| John's | d'
    | d   NP
       | -ing vP
        | v     VP
         | destroy NP
          | the evidence
```

c. **Derived nominal** (deverbal N)

```
    | dP
   /|
  /  |
| John's | d'
    | d   NP
       | destruction PP
        | of NP
         | the evidence
```

d. **Simple vP**

```
    | TP
   /|
  /  |
| John | T'
    | will vP
         | v' vP
          | destroy NP
           | the evidence
```

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Larson & Samiian (2018) propose a fully analogous account of iPersian Class 2 forms. Specifically, they propose that when a Class 2 P appears with a following Ezafe, a nominalizing morpheme √n has attached to P, converting it to N and determining its projection as NP (76a). This form is the prepositional counterpart of a nominal gerund in containing a nominalized head (cf. (75a)). By contrast, when a Class 2 P appears without a following Ezafe, the nominalizer has attached to the larger pP, converting it to an NP, but leaving its internal prepositional structure intact (76b). This form is the prepositional counterpart of a verbal gerund in containing a nominalized phrase (cf. (75b)). Here again, √n’s position above pP in (76b) allows p to assign accusative case to the object. Structures for the corresponding P3s and P1s are given in (76c)–(76d), respectively. The parallelism to verbal nominalizations is evidently quite close.25

(76)  

a. Class 2 (nominalized P)

[Diagram]

25. A technical question arises as to how co-occurrence between Class 2 forms and the nominalizer √n is ensured. Larson & Samiian (2018) propose to extend the account of formal features in Pesetsky & Torrego (2007) to category features. More precisely, they propose that nominalization involves separate instances of a nominal feature [N], one interpretable (iN]) and one valued ([Nval]), which must enter an agreement relation for legibility at the LF-PF interfaces. Class 2 forms are proposed to bear a [Nval] feature lexically, which then requires a c-commanding √n bearing [iN] to come into agreement with it. It is the interpretable instance of [N] that determines semantic scope of nominalization in the sense of Jackendoff (1977).
b. **Class 2** (nominalized pP)

```
NP
  NP
  divar
  EzP
  NP
  -Ez
  np
  jelo
  PP
  Ali
```

c. **Class 3** (de-prepositional N)

```
NP
  NP
  miz
  EzP
  NP
  -Ez
  bæqæl
  EzP
  -Ez
  Ali
```

d. **Class 1** (pure pP)

```
NP
  NP
  sham
  pP
  PP
  ba
  PP
  NP
  Hæsæn
```

Finally, Larson & Samiian (2018) analyze the absence of *Ezafe* after P1s and its optionality on the phrase that P1s head as analogous to what one sees in English with (77).
(77)  
   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).

It is well known that whereas virtually any verb in English can occur in a verbal gerund, occurrence in a nominal gerund is more restricted and constrained by the verbal semantics. Specifically, whereas action verbs readily form nominal gerunds (77a)–(77b), stative predicates including verbs of perception or mental attitude do not (77c)–(77e). This pattern is natural under Jackendoff’s scopal analysis; we expect lexical constraints to exert themselves when nominalization applies to the lexical stem, but not when it applies to the phrasal projection.

Larson & Samiian (2018) analyze the Ezafe facts with P1s in a parallel way. The proposal is that whereas P1s reject nominalization as a matter of their lexical semantics, the pP phrase they project more readily accepts nominalization since lexical constraints are not in play. Thus whereas (78a) is excluded, (78b) is acceptable in various instances (cf. (35c)).

---

26. Similar constraints are found in progressives (ia), (ib), suggesting that gerund and progressive -ing are related.

   (i)  
   a. *John is knowing French.
   b. *John is loving chocolate. (must mean ‘loving eating’) 
   c. *John is believing that climate change has occurred.

27. A corpus study was conducted by Nazila Shafiei of PPs headed by 6 P1 prepositions (dar “in/inside”, bar “on/onto”, be “to/toward”, az “from”, ta “until/to” and ba “with”) of the first fifty thousand lines of the Bijankhan corpus. PPs were categorized as not allowing, optionally allowing and requiring a preceding Ezafe. A total of 126 occurrences were recorded. The majority of the cases did not allow an external Ezafe (i); some cases allowed an optional Ezafe (ii); there was only one instance of a required Ezafe (iii).

   (i) tehsil (*=e) [pp dar [reshte=ye honar-ha=ye ziba](*=e) [pp daer daneshgah]  
      education *=EZ in field=EZ art-PL=EZ fine *=EZ at university 
      ‘education in the field of fine arts at the university’

   (ii) [NP eshq (=e) [pp be zendegi]]  
      love =EZ for life 
      “love of life”

   (iii) [NP goruz (*=e) [pp daer shaehr]] 
      group =EZ in city 
      “the group in the city”
In summary, the case marking analysis predicts that occurrence of *Ezafe* internally to PP in iPersian should be a matter of the ‘nominality’ of the P head. And occurrence of *Ezafe* externally to PP should be a matter of the nominality of the phrase that P projects. This prediction is transparently correct in the case of P3s, as argued by Karimi & Brame (1986, 2012); here the head and phrase are both N. The P2 and P1 classes, which have previously escaped systematic treatment, can be assimilated into this picture in an enlightening way by extending Jackendoff’s (1973, 1977) proposals regarding the structure of PP and scopal nominalization to the iPersian prepositional system.

### 3.4.3 Predictions of the case-marking analysis: Cross linguistic variation

In addition to the predictions the case-marking analysis makes for familiar *Ezafe* phenomena from iPersian and Kurdish, we wish to briefly draw attention to its relevance for a wider data set, including the so-called ‘doubled’ or ‘strengthened’...
Ezafe construction in Zazaki, and the ‘Reverse Ezafe’ construction observed in the Caspian languages (Gilaki, Mazanderani, Talyshi) and possibly in Balochi.

3.4.3.1 Zazaki ‘doubled Ezafe’
Zazaki exhibits Ezafe in the same structural contexts as other Iranian languages, but Zazaki Ezafe morphology is especially complex. As discussed in Todd (1985), from which the examples below are drawn, the form of the Ezafe in (79) encodes gender (masculine vs. feminine), number (singular vs. plural), and whether the relation between N and its complement is descriptive/adjectival vs. genitival/possessive:

(79) a. pir’tok=Ø find  
    Book=EZ good  
    “good book”  
  b. suk=a gird-i  
    city=EZ large-fem  
    “large city”  
  c. ban=e min  
    house=EZ me(obl)  
    “my house”  
  d. ling=a min  
    foot=EZ me (obl)  
    “my foot”  
  e. sa=y wes-i  
    apple=EZ good-pl  
    “good apples”  
  f. ling=e min  
    feet=EZ me(obl)  
    “my feet”

A unique feature of Zazaki is its so-called ‘doubled’ or ‘strengthened’ Ezafe. When a phrase containing Ezafe is embedded in a larger Ezafe construction, the embedded Ezafe morpheme (ez) shows a special form, becoming de or da (dez) depending on gender and/or number. This situation is schematized in (80) and illustrated with examples in (81):

(80) a. [head=ez [head =de mod]]  
    (masculine or plural)  
  b. [head=ez [head =da mod]]  
    (feminine)

(81) a. kutik=e [amiryan=de ma]  
    Dog=EZ neighbor(obl)=DEZ us  
    “our neighbor’s dog”  
  b. aqil=e [mar’dim=de pil-i]  
    wisdom=EZ people=DEZ older-pl  
    “the wisdom of older people”

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Interestingly, Zazaki Ezafe exhibits the very same shape change when a phrase containing Ezafe is the object of an oblique postposition, as shown in (82):

(82) a. \[\text{head}=\text{de/da mod}\] P
b. \[\text{embaz}=\text{de xwi} \text{-re}\]
   friend=DEZ own -to
   “to his friend”
c. \[\text{mar-da to } \text{fa}\]
   mom(OBL)=DEZ you(OBL) from
   “from your mother”

Thus Ezafe and oblique prepositions pattern together in their effect on a subordinate Ezafe.

Larson (2018) argues that Zazaki doubled Ezafe can be seen as part of a broader pattern of phenomena involving the case that is checked on DPs by external elements like T, v and p (83a), and a genitive case checked within DP (83b):

(83) a. \[\text{T/v/p DP}\]
    \[\text{DP-external Case}\]

b. \[\text{[DP ... D ... NP ... AP ...]}\]
    \[\text{DP-internal Case}\]

Consider first the pair in (84) below, described by Babby (1987, 1988). As Babby observes, Russian quantified nominals exhibit an alternation in internal case marking, depending on their external environment. When the nominal is in a position of oblique case marking, the D, its modifiers, and the head of NP all inflect homogeneously for the externally assigned oblique case (84a). However, when the nominal is in a position of structural Case marking, only the D head is inflected for the external structural Case. The modifiers and the head of NP all inflect with genitive case, which Babby identifies as an internal case assigned by D (84b):

(84) a. \[\text{a } [\text{pjat’ju bol’šimi butylkami vina }]\]
    \[\text{inst}
    \[\text{with five.inst big.inst.pl bottle.inst.pl wine.gen}
    “with five big bottles of wine”

b. \[\text{vypil } [\text{pjat’ bol’šix butylok vina }]\]
    \[\text{acc}
    \[\text{drank five.acc big.gen.pl bottle.gen.pl wine.gen}
    “drank five big bottles of wine”
    (Babby 1988: 289)
The examples in (85) show that alternative case patterns are not possible. It is not possible to inflect only D for external case in a position of oblique case marking (85a). Likewise it is not possible to inflect the internal elements of DP for structural Case in a position of structural Case-marking; DP-internal genitive case must appear (85b):

(85) a. *a [pjat’ju bol’six butylok vina ]
with fiveINST bigGEN.PL bottleGEN.PL wineGEN
“with five big bottles of wine”
b. *vypil [pjat bol’sie butylki vina ]
drank fiveACC bigACC.PL bottleACC.PL wineGEN
“drank five big bottles of wine”

(Babby 1988: 289)

Thus, as Babby describes matters, D itself is uniformly inflected for DP-external case. When D carries an externally determined oblique case feature, the NP head and modifiers of it must check this case. But when D carries an external, structural Case feature, D’s own inherent case (genitive) wins out.

Compare now a famous phenomenon first observed by Bopp (1848) in Georgian examples like (86a). The noun mṭer-ta-sa, “of the enemies”, shows both the external case marking of the head itself (dat) and the internal case marking (obl.pl) relevant to its relation to the head (cqoba “attack”). Other examples from Bopp are given in (86b), (86c); (86d) is a parallel example from Old Georgian due to Bork (1905);

(86) a. cqoba-sa mṭer-ta-sa
attack-DAT enemy-OBL.PL-DAT
“at the attack of the enemies”
b. gwam-isa krist-es-isa
body-GEN Christ-GEN-GEN
“of the body of Christ”
c. qeli-ta mocikul-ta-ta
hand-OBLPL apostle-OBL.PL-OBL.PL
“through the hands of the apostles”
d. pir-isa-gan uymrto-ta-sa
face-GEN-from infidel-OBL.PL-DAT
“from the face of the infidels”

(Bork 1905)

This ‘double case’ phenomenon, later termed Suffixaufnahme by Finck (1910), occurs primarily in the situation where the Russian homogeneous agreement pattern appears according to Plank (1995). That is, in situations of oblique external case marking – dative, locative, instrumental, genitive – we get DP-internal case effects as well.
Larson (2018) proposes that Zazaki ‘doubled’ or ‘strengthened’ Ezafe is in fact an instance of the Suffixaufnahme or double case phenomenon. Recall that doubled Ezafe occurs in two circumstances. The first is when one Ezafe construction is embedded inside another, as in (87):

(87) a. [head=ez [head=de/=da mod]]
   b. kutik=e [amiryan=de ma] dog-ez neighbor(OBL)-sez us “our neighbor’s dog”
   c. ma=y [mar=da ay] mom=ez mom(OBL)-sez her “her mother’s mother”
   d. a’qi l-[mar’dim=de pil-I] wisdom=ez people=sez older-pl “the wisdom of older people”

The second is when an Ezafe construction is governed by an oblique preposition, as in (82) (repeated below as (88)):

(88) a. [head=de/da mod] P
   b. [embaz=de xwi] –re friend=sez own -to “to his friend”
   c. [mar=da to ] fa mom(OBL)=sez you(OBL) from “from your mother”

Suppose that Ezafe has the status of an oblique case-marker, as postulated by the case-marking analysis. Then in both instances we are seeing Ezafe under an oblique case-marker – in brief, oblique under oblique. This is precisely the situation where the Suffixaufnahme phenomenon arises: morphology that reflects the oblique external case of the DP and the internal case of DP taken together. Larson (2018) suggests specifically that Zazaki double Ezafe forms -de and -da are in fact portmanteaus of the Ezafe element and a general oblique case coming from without, as shown in (89):

(89) a. [Exp -e [DP D, [NP amiryan] [Exp -de ma ]]]

28. This conclusion is independently reached by Plank (p.c.) in unpublished research notes.

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Thus the case-marking analysis allow us to draw the otherwise idiosyncratic behavior of Zazaki ‘doubled’ Ezafe into a much broader picture.

3.4.3.2 Caspian ‘Reverse Ezafe’

As noted by Larson (2009), in the Caspian languages Mazanderani, Gilaki and Talyshí, nominals show a pattern that is nearly the mirror inverse of that found in iPersian. Thus attributive nouns, attributive adjectives, possessives, and a whole range of noun complements occur prenominally, and link to N via an invariant ‘Reverse Ezafe’ particle (rez), which again cliticizes to the preceding element (90):29

(90) a. NP/AP/PP =rez N
   b. NP =rez A
   c. NP =rez P

These patterns are illustrated in (91)–(93) for Gilaki and (94)–(95) from the Sari dialect of Mazanderani.30

Gilaki

(91) Modifiers & complements of Ns
   a. bay=ə gul-an
      garden=rez flower-pl
      “garden flowers”
   b. John=ə xowne
      John=rez house
      “John’s house”
   c. ab=ə xurdan
      water=rez eat
      “drinking of water”
   d. surx=ə gul
      red=rez flower
      “red flower”
   e. xayli kushtay(=ə) utaq
      very small(=rez) room
      “very small room”
   f. xujir=ə sabz=ə kitaab
      good=rez green=rez book
      “good green book”

29. The term ‘Reverse Ezafe’ appears to have been coined by Don Stilo.

30. We thank Bardyaa Hessam (p.c.) for the Gilaki data in (91)–(93) and Zia Khoshsirat (p.c.) for discussion of this and other Gilaki data. The Mazanderani examples in (94) and (95) are taken from Yoshie (1996).
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(92) **Complements of As**

a. *Hæsæn*=ə *aashiq* np=rez A

Hasan=rez in love

“in love with Hasan”

b. *zak*=ə *negarown* np=rez A

child=rez worried

“worried about the child”

c. *Gudut*=ə *muntazir* np=rez A

Godot=rez waiting

“waiting for Godot”

(93) **Complements of Ps**

a. *divaar*=ə *sar* np=rez P

wall=rez top

“up the wall”

b. *otaq*=ə *væsæt* np=rez P

center=rez room

“in the middle of the room”

c. *istaxr*=ə *dowri* np=rez P

pool=rez around

“around the pool”

d. *daryaa(=ə) kinaar*=ə *xowne* np=rez P np=rez N

sea(=rez) next=rez house

“house beside the sea”

Mazanderani (Sari)

(94) **Modifiers & complements of Ns**

a. *dâr*=ə *sar* np=rez N

tree=rez top

“top of the tree”

b. *asb*=ə *kale* np=rez N

horse=rez head

“horse’s head”

c. *farhåd*=ə *xâxer*=ə *hemsâye* np=rez np=rez N

Farhad=rez sister=rez neighbor

“neighbor of Farhad’s sister”

d. *me berâr*=ə *rafeq*=ə *ketåb* np=rez np=rez N

1sg brother=rez friend=rez book

“book of my brother’s friend”
e. \( gat=\omega \) sere \hspace{1cm} \text{AP=REZ N}  \\
\text{big=REZ house}  \\
\text{“big house”}

f. \( belend=\omega \) ku \hspace{1cm} \text{AP=REZ N}  \\
\text{high=REZ mountain}  \\
\text{“tall mountain”}

g. \( ku\check{c}ik=\omega \) ‘ot\check{a}q \hspace{1cm} \text{AP=REZ N}  \\
\text{small=REZ room}  \\
\text{“small room”}

h. \( \check{la}\check{qer}=\omega \) sef\check{id}-ru=\omega \) zen\check{\alpha} \hspace{1cm} \text{AP=REZ AP=REZ N}  \\
\text{thin=REZ pale-face=REZ woman}  \\
\text{“thin, pale-faced woman”}

(95) \textbf{Complements of Ps}

a. \( d\ddot{a}r=\omega \) ben \hspace{1cm} \text{NP=REZ P}  \\
\text{tree=REZ under}  \\
\text{“under a tree”}

b. \( me \) ‘ot\check{a}q=\omega \) dele \hspace{1cm} \text{NP=REZ P}  \\
\text{1SG room=REZ in}  \\
\text{“in my room”}

c. \( me \) ‘ber\check{a}=\omega \) demb\check{\alpha}l \hspace{1cm} \text{NP=REZ P}  \\
\text{1SG brother=REZ after}  \\
\text{“after my brother”}

An interesting departure from symmetry vis-a-vis iPersian occurs with relative clauses. Caspian reduced, nonfinite relatives (RRCs) appear prenominally bearing -REZ like other modifiers (96a)–(96a’). By contrast, Caspian finite relatives (FRCs) occur post nominally and are introduced by complementizer (\( ke \)), just like those in iPersian, and show no Ezafe-type element (96b)–(96b’). The Mazanderani examples in (97) and (98) illustrate this difference.\textsuperscript{31,32}

\textsuperscript{31} We thank Mohsen Mahdavi Mazdeh (p.c.) for the Mazanderani data in (97)–(98) and for very helpful discussion.

\textsuperscript{32} Larson (2009) gives the Gilaki (i) as a potential example of a prenominal reduced relative clause with REZ. The analysis is not straightforward, however, since Gilaki past participles end in a final -\( \omega \) that is homophonous with REZ.

(i) \( ‘i \) suyis=\( c \) ji vagars=\( \omega \) juvon  \\
\text{this SW=REZ from back-turn=REZ?/PP? youth}  \\
\text{“this young person returned from Switzerland”}

The situation appears clearer in Mazanderani. M. Mazdeh (p.c.) notes that in Amol, Babol, and Nur, past participles do not generally end in a vowel (ia)–(d), hence in prenominal environments the final -\( \omega \) appearing on the participle can be identified as -REZ, not PP (iia)–(c).
(96) **CASPIAN** | **iPERSIAN**
---|---
a. RRC =**REZ** N a’. N =**EZ** RRC
b. N FRC b’. N FRC

(97) a. \[\text{[tæʃ}=ə \text{sær bæpat}]]=ə \text{polα}^{33} \text{RRC)=REZ N}
   
   fire=**REZ** on cooked.pprt =**REZ** rice
   
   “the rice cooked over a fire”

   b. \text{unta polα \{kə mən tæʃ}=ə \text{sær bæpat-əmA\}} \text{N FRC}
   
   DEMDIST rice REL 1SG fire=**REZ** on cooked-1SG
   
   “the rice that I cooked over a fire”

(98) a. \[\text{[u=ə \text{dʒa bæfurd}]}]=ə \text{perαn} \text{RRC)=REZ N}
   
   Water=**REZ** with washed.pprt =**REZ** shirt
   
   “the shirt washed with water”

   b. \text{unta perαn \{kə tə u=ə dʒa bæfurd-i\}} \text{N FRC}
   
   DEMDIST shirt REL 2SG water=**REZ** with washed-2SG
   
   “the shirt that you washed with water”

(i) a. \text{vənə ling bafkas biə.}
   
   her/his/its leg broken was
   
   “Her/his/its leg was broken”

   b. \text{inta mast hi bexərd niə.}
   
   this yogurt stir eaten is not
   
   “This yogurt is not stirred.”

   c. \text{polα bæpat biə.}
   
   rice cooked was
   
   “the rice was cooked”

   d. \text{perαn bæfurd biə.}
   
   shirt washed was
   
   “the shirt was washed.”

(ii) a. \text{bafkəs=ə ling}
   
   Broken=**REZ** leg
   
   “broken leg”

   b. \text{hi bexərd=ə mast}
   
   stir eaten=**REZ** yogurt
   
   “stirred yogurt”

   c. \text{bonə bexərd=ə adam}
   
   ground hit=**REZ** person
   
   “person who has fallen down”

Mazdeh also observes that the stress patterns of the Mazanderani participles in (i) and (ii) are distinctive. Whereas Mazandarani verbs always stress the preverb (bə or be) when there is one, stress in the participle is always on the last syllable (kəs in bafkəs and ərd in bexərd). He notes that this gives us further confirmation that these forms are nouns, not verbs.

33. Note that (97a) and (98a) both involve participles that do not end in a vowel; cf. fn.28 (ic)–(id). Hence -ə in (97a) and (98a) is unambiguously -**REZ**.
Larson (2009) proposes that Caspian Reverse Ezafe also reflects case. Specifically, Larson suggests that whereas Ezafe represents a generalization of the case relations found with English of and iPersian az, Reverse Ezafe represents a generalization of case relations found with English ’s. Corbett 1987 observes that various Slavonic languages contain suffixes for creating ‘possessive adjectives’ from nouns. For example, in addition to familiar post nominal genitives like (99a), Upper Sorbian (spoken in Lusatia, eastern Germany, has possessive adjectives, formed by suffixing -in/-yn to feminine nouns and -ow to masculine nouns (99b).

(99)  a.  kniha Jan-a book Jan-gensg “a/the book of Jan’s”

As Corbett (1987) notes the possessive Janowa in (99b), although derived from a masculine noun, is adjectival in behavior; thus it precedes the head and shows the same agreement as an attributive adjective – here agreeing with the nominative, feminine singular head knih-a “book”). Larson (2009) refers to morphemes like Upper Sorbian -in/-yn/-ow, which derive adjectival/concordial forms from Ns as ‘concordializers’. In essence, a concordializer converts an expression requiring case by assignment – a ‘nominal’ – to one allowing case by agreement – an ‘adjectival’.

Larson (2009) analyzes English prenominal genitive ’s and Caspian Reverse Ezafe morphemes as a concordializers. They allow the nominal expression to which they attach to obtain case by agreement with a higher case-probe a when the latter comes into agreement with the nominal head. In order to obtain such agreement, ’s and rez-marked phrases must position themselves in prenominal position, between the case probe and its goal (100):

(100)

Under these proposals, Ezafe and Reverse Ezafe pattern together as alternative general strategies for solving the same syntactic problem: how is a [+N] XP complement or modifier of a noun to satisfy its case-requirements? The Ezafe strategy introduces
an additional case probe into the derivation (101a), solving the problem by direct assignment or checking. The Reverse *Ezafe* strategy introduces a concordializer into the derivation (101b), solving the problem by agreement.

(101) a. -ez Checks Case on [+n] XP

\[ N \quad _{EzP = ez \ XP} \quad \text{assignment/checking} \]

b. -rez Concordializes [+n] XP

\[ _{RezP \ XP = rez \ N} \quad \text{agreement} \]

Constructions of the first sort would be complement-like; constructions of the second sort would be fundamentally attributive in nature.

4. Concluding remarks

The case-marking analysis offers an approach to *Ezafe* and Reverse *Ezafe* distribution that is more adequate in empirical coverage and richer in theoretical predictions than competitors. It also carries interesting typological implications about the kind of language that manifests *Ezafe*/Reverse *Ezafe* phenomena and why they do so. It seems to us that the crucial parameters at work in languages of the relevant sort must concern the case properties of adjectives and prepositions and how they align with nouns (Karimi & Brame 1986, 2012). Under usual views, nouns are referential, denote properties (e.g., beauty, truth), occur as arguments and are assigned (or valued for) case. By contrast, adjectives are non-referential, denote predicates (e.g., beautiful, true), occur as attributive modifiers and agree for case. Prepositions are non-referential, typically denote relations (e.g., in, before), occur as attributive modifiers and are neither assigned case nor agree for case.

These N-A differences are evident in English in contrasts like (102)–(104). (102) shows that Ns but not As can occur in argument position. (103) shows that Ns are not freely substitutable for their corresponding As in attributive position. Finally (104) shows that As are not freely substitutable for Ns as P-objects:

(102) a. We discussed truth/beauty. Argument position

b. *We discussed true/beautiful.

(103) a. A very long/*great length road Attributive position

b. A very important /*great importance article

c. A very thick/*great thickness book
(104) a. A road of great length/*very long
   b. An article of great importance/*very important
   c. A book of great thickness/*very thick

iPersian seems to exhibit the same distributional facts. Ns but not As are permitted in argument positions (105) (cf. (102)); Ns are not freely substitutable for As in attributive constructions (106) (cf. (103)), and As are not freely substitutable for Ns as objects of Ps (107) (cf. (104)).

(105) a. Ma raje be ḥaḡhīget/zibayi baḥs=kārd-im.
   “We discussed truth/beauty.”
   Argument position
   b. *Ma raje be ḥaḡhīghi/zibā baḥs=kārd-im.
   “We discussed true/beautiful.”

(106) a. Ye ḵade=ye besyar tulani/*[tul=e ẓiyad]
   “a very long road”
   b. Ye mæqale=ye [besyar mohem] /*[æḥæmiæt=e ẓiyad]
   “a very important article”
   c. Ye ketab=e [besyar zækhim] /*[zekhamæt=e ẓiyad]
   “a very thick book”

(107) a. Ye ḵade ba [tul=e ẓiyad]/*[besyar tulani]
   “a road of great length”
   b. Ye mæqale(=ye) ba [æḥæmiæt=e ẓiyad]/*[besyar mohem]
   “an article of great importance”
   c. Ye ketab ba [zekhamæt=e ẓiyad]/*[besyar zækhim]
   “a book of much thickness”

What differences there are would therefore not seem to be ‘deep’ ones, wherein adjectives in iPersian are actually nouns (contra Karimi & Brame 1986, 2012). Rather the difference would seem to be more superficial, regarding how case features are realized with [+N] items in the two languages. In English (and many other languages), As are concordial for case; i.e., case is an uninterpretable/unvalued feature. By contrast, in Ezafe and Reverse Ezafe languages, adjectives appear to behave featureally like nouns; i.e., case is a valued feature on both As and Ns. This result in turn
suggests that concordiality/agreement is not a ‘deep’ syntactic property of adjectives and what is normally taken to be the usual situation, with adjectives agreeing with their nouns, is in fact a derived one, involving more structure than is typically assumed.\footnote{Larson (2018) argues for a similar conclusion regarding adjectives in Mandarin.} We must leave these intriguing speculations for future exploration.\footnote{Parallel issues arise with the category P. It is well known that PPs, particularly locatives, can behave referentially and hence nominally in natural language (Under the bed seems to be a good place to hide.). Furthermore many locative Ps (behind, beneath, in-the-midst-of, etc.) are recognized to possess a nominal core (hind, neath, midst, etc.). Hence alignment of P with N poses similar issues.}

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Chapter 10. The Ezafe construction revisited


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