3

Ezafe and the deep position of nominal modifiers

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3.1 Introduction

In languages exhibiting the Ezafe construction, such as Modern Persian, nominal modifiers generally follow the noun, and a large class of nominal modifiers, including APs, NPs, some PPs, but not relative clauses, require a "linking" element, referred to as *Ezafe*. Thus in (1a), the noun *otâq* 'room' is modified by the adjective phrase *besyar kuchik* 'very small.' The Ezafe vowel *é* appears in between, suffixed to the noun. In (1b), the noun *xune* 'house' is followed by a restrictive PP, *kenar-é dærya* 'on the beach.' The two are connected by Ezafe, which also appears internally, between the preposition and its object. Finally (1c) shows the noun *otâq* modified by the relative clause *î- ké bozorg ast* 'that is big.' No Ezafe appears in this case; the relative clause initial *-î* is a distinct morpheme.[1]

(1)   a. otâq-é   besyar kuchik
           room-EZ very   small
           "very small room"   (AP)

        b. xune-yé [kenar-é dærya]
           house-EZ next-EZ sea
           "house on the beach"   (PP)

        c. otâq-î   ké   bozorg ast
           room-REL that big   is
           "room that is big"   (CP)

The Ezafe construction raises a number of interesting questions, not the least of which is: What is the Ezafe morpheme? What is its status under current grammatical theory?

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[1] All data in this paper are drawn from either Samiian (1994) or Ghozati (2000).

In this chapter we develop a proposal advanced by Samiian (1994) that Ezafe is a case-marker, inserted to case-license [+N] elements. After introducing Ezafe, and reviewing Samiian's arguments for its case-marker status, we go on to consider two simple questions that arise from her results:

- Why do modifiers require Case?
- What is their Case-assigner?

Case-marking (as opposed to agreement) is typically associated with argument status; however, the Ezafe-marked items in (1a) and (1b) are modifiers. Why would modifiers need case? We suggest an answer to these questions based on an articulated "shell structure" for DP proposed by Larson (2000c). Under this account, (most) nominal modifiers originate as arguments of D, a view defended in classical transformational grammar by Smith (1964), and in generalized quantifier theory by Keenan and Stavi (1994). We also relate our account to other cases of postnominal APs, including English indefinite pronoun constructions and the Greek "poly-definiteness" construction, and to adjectival inflection in Japanese, following Yamakido (2005, 2007). If correct, our conclusions suggest a return to the early transformationalist view of nominal modifiers as complements of the determiner that originate in the position of relative clauses.

3.2 The Ezafe construction

The Ezafe construction is found in Modern Persian (Farsi), in Kurdish (Kurmanji and Sorani) and in Zazaki. Ezafe occurs with various kinds of modifiers, but not typically with RCs.

3.2.1 *Farsi (Samiian 1994; Ghomeshi 1997; Ghozati 2000; Kahnemuyipour 2000)*

Farsi shows the basic Ezafe pattern in a simple form. The language contains prenominal demonstratives (2a) and numerals (2b); superlatives seem to be the only case of prenominal adjectives (2c).

(2) a. on   mard
         that man

     b. sé   tá dokhtar
         three CL daughter

     c. kûechektarin mive
         smallest   fruit

Otherwise all modifying elements occur postnominally and typically require Ezafe, including APs (3a), descriptive NPs (3b, c), genitive NPs (3d), and some PPs (3e). The construction is recursive, insofar as multiple modifiers of these kinds trigger multiple occurrences of Ezafe (3f).

(3) a. otâq-é   besyar kuchik
         room-EZ very   small
         "very small room"   (AP)

     b. del-é   sang
         heart-EZ stone
         "stone heart"   (NP)

     c. shahr-é Tehran
         city-EZ Tehran
         "city of Tehran"   (NP)

     d. manzel-é John
         house-EZ John
         "John's house"   (NP)

     e. xune-yé [kenar-é dærya]
         house-EZ next-EZ sea
         "house on the beach"   (PP)

     f. ketâb-é sabz-é   jâleb
         book-EZ green-EZ interesting
         "interesting green book"   (AP-AP)

As noted earlier, relative clause modifiers, which are also postnominal, do not trigger Ezafe (4). They are introduced by a relative morpheme (*î*) that may be historically related to Ezafe, but is considered synchronically distinct by Persian grammarians.

(4) otâq-î   ké   bozorg ast
     room-REL that big   is
     "room that is big"   (*CP)

3.2.2 *What is Ezafe? (Samiian 1994)*

The presence of the Ezafe "linking" morpheme raises a simple and very natural question. What is Ezafe? What function does Ezafe serve in the grammar of Persian and languages like it? In an interesting article, Vida Samiian (1994) argues that Farsi Ezafe is a *case marker*, inserted before complements of [+N] categories, including Ns, As, and some Ps. Samiian supports this claim by

observing that the use of Ezafe extends considerably beyond modification. Many contexts where English would use the (genitive) case-marking preposition *of* are ones in which Ezafe occurs, including complements of N (5a–c), complements of A (6a–c), and certain partitive constructions (7a, b).

(5)   Complements of N

    a.   tæxrib-é   shæhr
        destruction-ez city
        "destruction of the city"

    b.   hordan-é   âb
        drinking-ez water
        "drinking of water"

    c.   forushandé-yé ketâb
        seller-ez   books
        "seller of books"

(6)   Complements of A

    a.   asheq-é   Hæsæn
        in love-ez Hasan
        "in love with Hasan"

    b.   negæran-é bæche
        worried-ez child.pl
        "worried about the children"

    c.   montæzer-é Godot
        waiting-ez   Godot
        "waiting for Godot"

(7)   Partitives

    a.   tamâm-é-în manzelhâ
        all-ez-def   houses
        "all (of) the houses"

    b.   hardo-yé-în manzelhâ
        both-ez-def houses
        "both (of) the houses"

The role played by *of* in the counterpart English cases is to case-mark the complement following adjectives, nouns, and partitives. Samiian suggests that Ezafe plays the same role here.

Perhaps the most persuasive piece of evidence Samiian gives is the behavior of the category P, which initially looks like a problem for Samiian's proposal. Since prepositions are typically analyzed as [−N,−V] elements, PP would not be expected to require Ezafe marking; furthermore, P would not be expected to require Ezafe to case-license its object, contrary to what we observed in (1b)/(3e). However, Samiian shows that the class of prepositions in Farsi is not uniform with respect to Ezafe. As shown in (8), some prepositions reject Ezafe (call these *Class 1*). By contrast, as shown in (9) and (10), other prepositions either permit Ezafe, or require it (call these *Class 2*):

(8) Class 1 Ps (reject Ezafe)

    a. be (*-yé) Hæsæn
        to (-ez) Hasan
        "to Hasan"

    b. æz   (*-é) Hæsæn
        from (-ez) Hasan
        "from Hasan"

    c. ba   (*-yé) Hæsæn
        with (-ez) Hasan
        "with Hasan"

    d. dær   (*-é) Hæsæn
        in/at/on (-ez) Hasan
        "in/at/on Hasan"

(9) Class 2 Ps (permit Ezafe)

    a. zir(-é) miz
        under (-ez) table
        "under the table"

    b. ru (-yé) miz
        on (-ez) table
        "on the table"

    c. bala (-yé) divar
        up   (-ez) wall
        "up the wall"

    d. jelo   (-yé) Hæsæn
        in front of (-ez) Hasan
        "in front of Hasan"

(10)   Class 2 Ps (require Ezafe)

    a.   beyn-é   mæn-o to
       between-EZ me-and you
       "between you and me"

    b.   væsæt-é   otâq
       in.the.middle-EZ room
       "in the middle of the room"

    c.   dor-é   estæxr
       around-EZ pool
       "around the pool"

    d.   bæqæl-é dær
       by-EZ   door
       "by the door"

Samiian shows that whereas Class 1 prepositions are true function words equivalent to English Ps, Class 2 prepositions are really noun-like elements. For example, Class 1 prepositions require an object, whereas Class 2 Ps do not (11a, b). Class 2 Ps can occur after determiners and can even bear plural morphology (whose function is apparently intensification) (11c, d), whereas Class 1 prepositions cannot. Finally, only PPs headed by Class 2 prepositions appear in case positions and are joined to nominals by Ezafe; Class 1 prepositions do not (11e, f).

(11)   a.   ræft ba   *(Hæsæn)
       went with Hasan
       "went with Hasan"

    b.   ræft bala (-yé deræxt)
       went up   -EZ tree
       "went up (the tree)"

    c.   in ru
       this top
       "up here"

    d.   un zir-a
       that under-PL
       "way down there"

    e.   æks-é   ru-yé miz
       picture-EZ on-EZ table
       "picture on the table"

   f.   *æks-é   dær-é ganje*
       picture-EZ in-EZ closet
       "picture in the closet"

The upshot is that, instead of being a counterexample to the case marker hypothesis, Farsi PPs appear to provide further support for it. It is exactly the noun-like (and presumably [+N]) prepositions that trigger the Ezafe phenomenon – exactly the prepositions that would not be expected to assign case, and whose projections would require it. As a point of comparison with English, we might note that Class 2 prepositions in Farsi appear to resemble complex English Ps like (12a, b), which contain an internal nominal element (*cause*, *spite*) and require an internal genitive case-assigner (*of*).

(12)   a.   [be [cause]] *(of) that fact
            (historically: by-cause-of)

       b.   [in [spite]] *(of) his reluctance

We find Samiian's analysis of Ezafe convincing; however, if the analysis is correct, important additional questions arise. Accepting that Ezafe occurs to case-mark complements of non-verbal elements, how do modifiers fit in? For example, even if adjectives, as [+N] categories, are case-bearing elements, why would modifiers need case?

3.3 Projecting DP-structure

The answer we suggest is based on the theory of DP structure originally proposed in Larson (2000*c*), which takes DP to be projected from the thematic structure of determiners, much like VP is projected from the thematic structure of verbs. A core element in this account is the semantic analysis of determiners introduced by Barwise and Cooper (1981) and Keenan and Stavi (1994), according to which determiners express relations between sets.

(13)   **Relational view of D**: Determiners express relations between sets.

Familiar determiner relations are given in (14a–e). Thus, the ALL-relation holds between two sets iff the second contains the first; the SOME-relation holds iff the two have a non-empty intersection, etc.[2]

(14)   a.   ALL(X,Y) iff $Y \subseteq X$

       b.   SOME(X,Y) iff $Y \cap X \neq \emptyset$

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[2] Standard relational notation R(X,Y) takes Y to be the first/internal argument of R, and X to be the second/external argument; hence with relational Ds, Y corresponds to the first/internal argument – the nominal restriction – and X corresponds to the second/external argument – the scope.
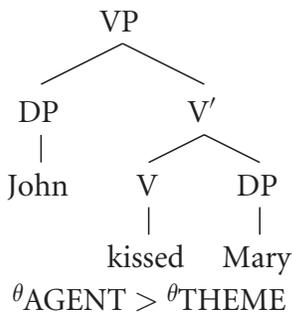
  c.   NO(X,Y) iff $Y \cap X = \emptyset$

  d.   MOST(X,Y) iff $|Y \cap X| > |Y - X|$

  e.   THE(X,Y) iff $Y \subseteq X$ & $|Y| = 1$

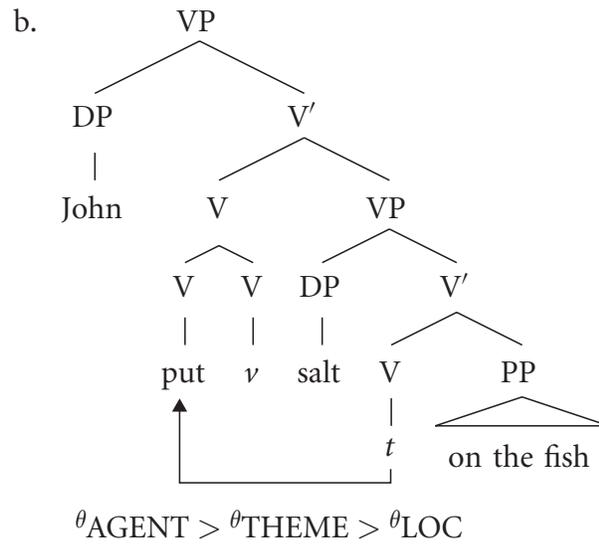### 3.3.1 *A thematic analysis of DP*

In DP quantification, the set Y is normally given by the internal argument of D: the nominal that D combines with, usually referred to as "the restriction on quantification." The set X is given by the external argument of D: the expression that DP is adjoined to, usually called "the scope of quantification." Larson (2000c) suggests that notions like scope and restriction be understood as thematic roles assigned by determiners to their set arguments, and ordered into a hierachy as shown in (15a). On this proposal, there is a hierarchy of θ-roles for D, parallel to, but distinct from, the hierarchy of θ-roles for V (15b).

(15)   a.   D: $^\theta$SCOPE $> ^\theta$RESTRICT $> ^\theta$NOBLIQUE ("Nominal Oblique")

       b.   V: $^\theta$AGENT $> ^\theta$THEME $> ^\theta$GOAL $> ^\theta$OBLIQUE
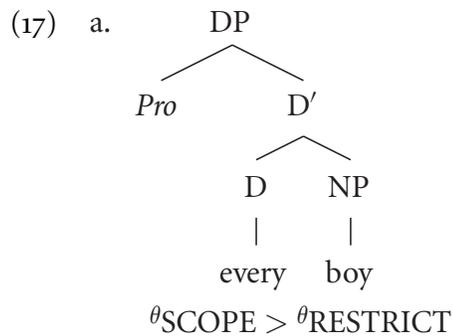
The parallel thematic analysis of D and V allows for a parallel account of structure. In the shell theory of Larson (1988, forthcoming), transitive VPs receive a simple binary branching structure (16a), whereas ditransitive Vs receive a structure containing a phonetically null "light verb" that triggers V-raising (16b).

(16)   a.

$^\theta$AGENT $> ^\theta$THEME

b.

```
                    VP
              ╱            ╲
           DP                V′
           │            ╱         ╲
         John         V              VP
                    ╱    ╲        ╱        ╲
                  V    V   DP         V′
                  │    │    │       ╱     ╲
                put   v  salt    V         PP
                                 │        ╱   ╲
                                 t    on the fish
```

$^\theta$AGENT $> {}^\theta$THEME $> {}^\theta$LOC

In both cases, arguments appearing higher in structure (as expressed by c-command) receive θ-roles that are correspondingly higher on the thematic hierarchy.

In a similar way, DPs can be assigned a structure that reflects the thematic hierarchy for D. Simple quantificational DPs correspond to transitive structures and receive the binary branching structure in (17a). "Ditransitive" (that is, triadic) determiners like *every…except* or *more…than* receive a structure containing a phonetically null "light determiner" that triggers D-raising (17b).

(17)   a.

```
              DP
           ╱      ╲
         Pro        D′
                  ╱     ╲
                 D       NP
                 │        │
               every     boy
```

$^\theta$SCOPE $> {}^\theta$RESTRICT

b.

DP
Pro   D′
D   DP
D   D   NP   D′
every   δ   boy   D   PP
t   except John

$^{\theta}$SCOPE > $^{\theta}$RESTRICT > $^{\theta}$NOBLIQUE
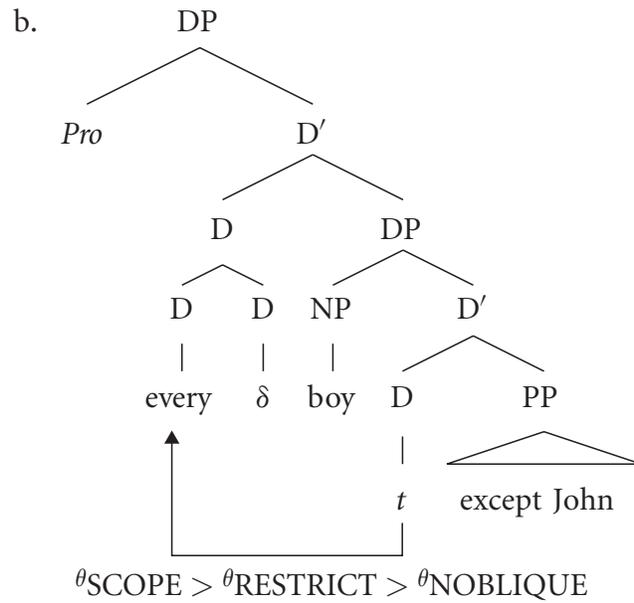
Here *Pro* is a pro-predicate argument corresponding to the scope, whose content is given by the phrase that DP is sister to at LF (18a–d).

(18)   a.

TP
VP
DP   V′
Pro   D′   swim
D   NP
all   whales

b.

TP
DP$_1$ TP
Pro   D′   VP
D   NP   DP$_1$ V′
all   whales   t   swim

c.

```
                        TP
              ┌──────────┴──────────┐
            DP₁                     TP
         ┌───┴────┐            ┌────△
       Pro        D'                VP
                ┌──┴──┐          ┌───┴───┐
                D     NP        DP₁      V'
                │     │          │       │
               all  whales       t      swim
```

$\{x: swims(x)\}$

d. $[_{\text{DPi}} \textit{Pro}[_{\text{D}'} \text{D} \quad \text{NP}]] [_{\text{XP}} \dots t_i \dots]$

GETS VALUE FROM

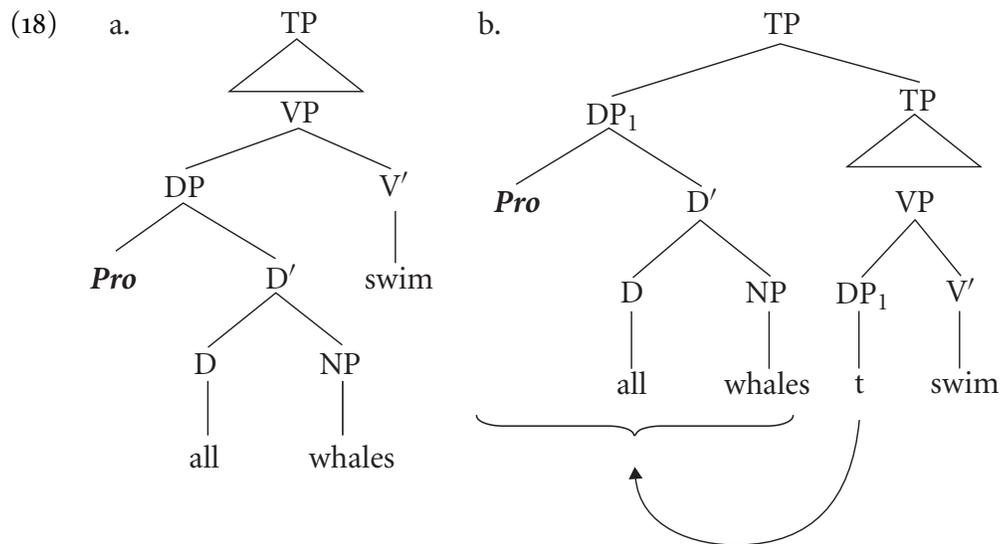The same analysis applies straightforwardly to examples with a quantified DP object. Again note that in (17a, b) (set) arguments appearing higher in structure (as expressed by c-command) receive θ-roles correspondingly higher on the thematic hierarchy.
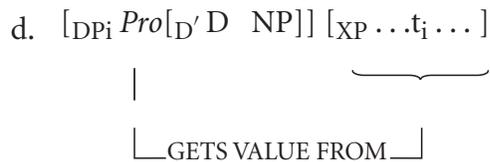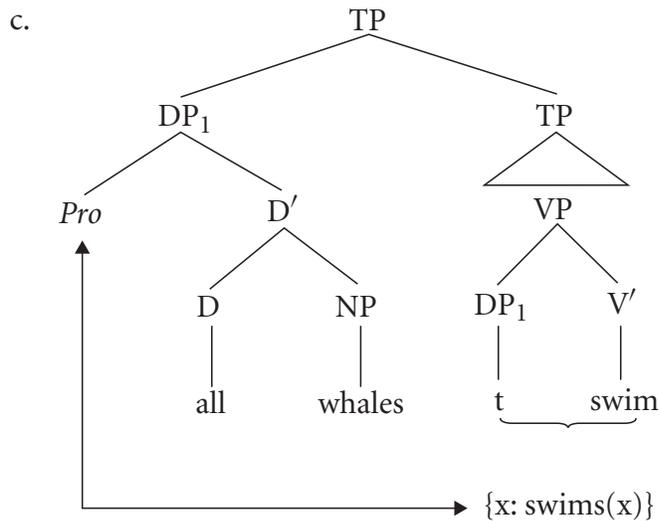
3.3.2 *The position of modifiers*

Within this general framework, verbal and nominal modifiers like those in (19) are not analyzed as adjuncts, attached high on the right, but rather as oblique complements, which actually combine with the head before other arguments.

(19) a.

```
              VP
           /      \
         DP        V′
         |       /    \
       John    V        VP
              / \      /    \
             V   V    DP     V′
             |   |    |     /   \
         kissed  v   Mary  V     PP
                           |    /  \
                           t   on the street
```

$^{\theta}\text{AGENT} > {^{\theta}\text{THEME}} > {^{\theta}\text{LOC}}$

b.

```
              DP
           /      \
        Pro        D′
                 /    \
               D        DP
              / \      /    \
             D   D    NP     D′
             |   |    |     /   \
         every  δ    boy   D     CP
                           |    /  \
                           t   that I know
```
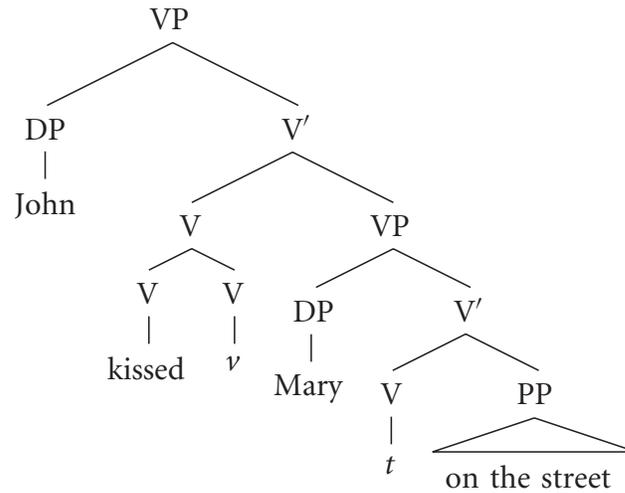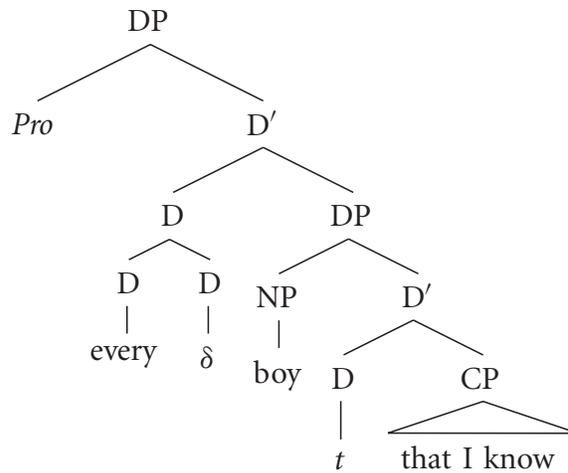
$^{\theta}\text{SCOPE} > {^{\theta}\text{RESTRICT}} > {^{\theta}\text{NOBLIQUE}}$

This approach has a variety of advantages. For example, it allows us to capture certain discontinuous dependencies that appear to hold between the head (V or D) and a modifier. Thus (20a–d) give various cases in which a verb and an oblique PP form a notional unit that is discontinuous in surface syntax. (21a–d) and (22a–c) give familiar parallel cases for DP. The first is Kuroda's observation that indefinite nouns like *way* are licit with a demonstrative determiner, but not with a simple definite; however, the combination of a definite determiner and a restrictive modifier are acceptable with such a noun.

(22a–c), noted by Jackendoff, make a similar point in connection with proper nouns.

(20) a. $_{VP}$ **treat** John **with kid gloves** ("treat carefully")   MANNER

b. $_{VP}$ **rub** John **the wrong way** ("bother")   MANNER

c. $_{VP}$ **put** John **on the spot** ("confront")   LOCATION

d. $_{VP}$ **kill** John **with kindness** ("be very solicitous toward")

INSTRUMENT

(21) I earned it …

a. … that way.

b. … *the way.

c. … **the old-fashioned** way.

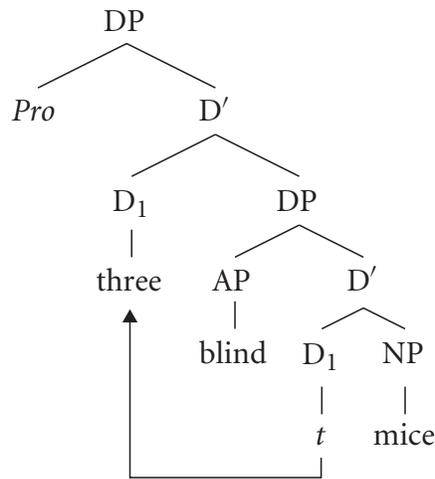d. … **the** way **that one should.**
(from Kuroda 1969)

(22) a. *the Paris

b. **the old** Paris

c. **the** Paris **that I love**
(from Jackendoff 1977)

Under the shell theory both receive a similar treatment: the elements forming a notional unit comprise an underlying syntactic unit as shown in (23a, b); the latter is subsequently broken up when the overt head raises to the light head.[3]

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[3] The idea of relative clauses as semantic D arguments is first proposed (to our knowledge) by Bach and Cooper (1978), who suggest, within the framework of Montague Grammar, that alongside standard IL translations like (ia–c), Ds be assigned interpretations like (iia–c). Here R is a variable over properties that is "filled in" by the denotation of an RC or other restrictive modifier.

(i) a. *every* $\lambda Q \lambda P \forall x [Q(x) \rightarrow P(x)]$
  b. *some* $\lambda Q \lambda P \exists x [Q(x) \rightarrow P(x)]$
  c. *the* $\lambda Q \lambda P \exists y \forall x [[Q(y) \leftrightarrow y = x] \wedge P(x)]$
(ii) a. *every* $\lambda Q \lambda P \forall x [[Q(x) \& R(x)] \rightarrow P(x)]$
  b. *some* $\lambda Q \lambda P \exists x [[Q(x) \& R(x)] \rightarrow P(x)]$
  c. *the* $\lambda Q \lambda P \exists y \forall x [[[Q(y) \& R(x)] \leftrightarrow y = x] \wedge P(x)]$

In Larson (2000c) restrictive D arguments are accommodated semantically by means of a valence-changing operation defined over binary determiner meanings. Specifically, if δ is a binary determiner, then we can define δ' a ternary determiner, such that for all α, β, γ of type $< e, t >$, $\delta'(\gamma)(\beta)(\alpha)$ iff $\delta(\zeta)(\alpha)$, where $\zeta' = \lambda x [\beta'(x) \& \gamma'(x)]$. This relation is defined over two-place determiners, whether basic or derived, hence if δ is a three-place D that has already combined with a restrictive argument,

(23)   a.   [$_{VP}$ ... [$_{V'}$ *v* [$_{VP}$ John [$_{V'}$ **put** [$_{PP}$ **on the spot**]]]]]

                              ↑_____|

      b.   [$_{DP}$ ... [$_{D'}$ δ [$_{DP}$ way [$_{D'}$ **the** [$_{CP}$ **that one should**]]]]]

                              ↑_____|

3.3.3 *The problem of prenominal modifiers*

The view sketched above can be extended to other postnominal modifiers including PPs, as in (24a), reduced relative clauses, as in (24b), and combinations of them as in (24c). The latter involve recursive DP shells and multiple raising to light heads, as shown in (25).

(24)   a.   the man [$_{PP}$ at the podium]

      b.   three women [$_{RC}$ capable of lifting a sofa]

      c.   every book [$_{PP}$ on the shelf] [$_{RC}$ published since WWII]

(25)   [$_{DP}$ *Pro* [$_{D'}$ every$_i$ [$_{DP}$ book [$_{D'}$ t_i [$_{DP}$ [$_{PP}$ on the shelf]
        [$_{D'}$ t_i [$_{RC}$ published since WWII]]]]]]]]

But what about prenominal modifiers, APs like those in (26), which are semantically equivalent to copular relative clauses?[4]

(26)   a.   the tall woman   (cf. *the woman who is tall*)

      b.   every beautiful house   (cf. *every house that is beautiful*)

      c.   three blind mice   (cf. *three mice that are blind*)

One possibility is base generation along the lines in (27).

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there will be a δ′ that adds another set-argument to it. This accommodates the recursive character of restrictive D-arguments.

   [4] We are not suggesting, of course, that all prenominal modifiers are equivalent to relative clauses. In fact there are well-known differences between them. For more on this topic see Larson (1998) and Larson and Takahashi (2007).

(27) **Base Generation** ?? $\Rightarrow$

```
                    DP
              ╱          ╲
           Pro            D′
                      ╱        ╲
                    D₁          DP
                    │        ╱      ╲
                  three    AP        D′
                           │       ╱    ╲
                         blind   D₁     NP
                                 │       │
                                 t     mice
```

On reflection, however, this idea is problematic. Given a θ-role-based approach, in order to project AP in the site shown in (27), we would apparently have to allow for an optional oblique θ-role between two obligatory roles in our hierarchy, as in (28).
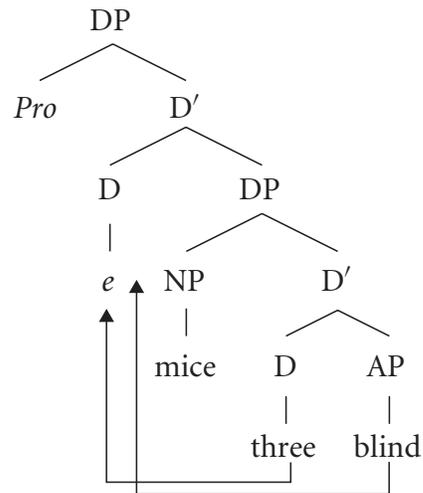
(28) $^{\theta}\text{SCOPE} > (^{\theta}X) > {}^{\theta}\text{RESTRICT}$

Worse yet, given the wide range of modifiers available in the prenominal site, we would seem to have to allow for a very large number of optional oblique θ-roles between our two obligatory ones (29). This looks unpromising.
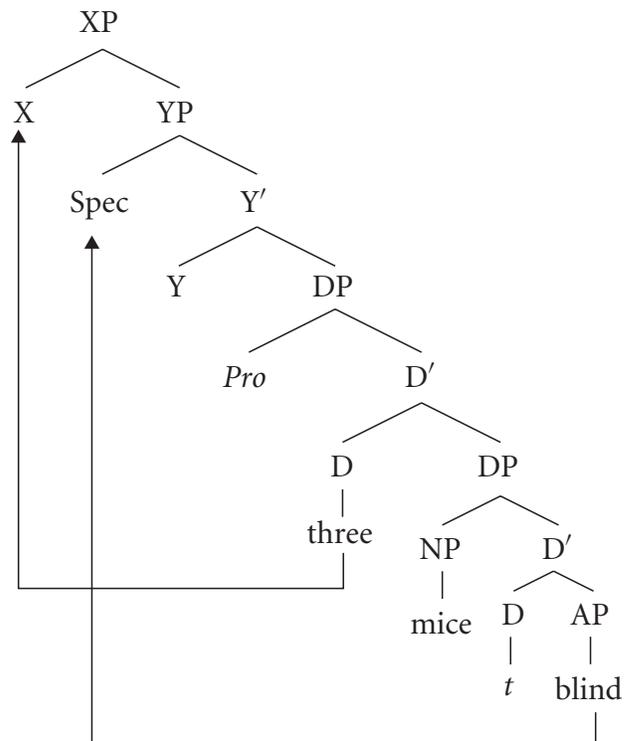
(29)   a. three **German** mice

   b. three **blind German** mice

   c. three **grey blind German** mice

   d. three **furry grey blind German** mice

   e. three **small furry grey blind German** mice

   f. three **excellent small furry grey blind German** mice

The only plausible alternative we see is that prenominal position is not a base position for adjectives in English, but rather a derived one. That is, we are led to resurrect the view of early transformationalists: that intersective attributive APs originate in the position of RCs, and obtain their surface position by movement, along the lines shown in either (30a) or (30b).

(30)   a.

```
                    DP
              ┌──────┴──────┐
            Pro            D′
                    ┌───────┴───────┐
                   D              DP
                   │         ┌─────┴──────┐
                   e  ↑    NP           D′
                          │        ┌────┴────┐
                        mice      D        AP
                                  │         │
                                three    blind
```

   b.

```
                        XP
                  ┌──────┴──────┐
                 X            YP
                        ┌──────┴──────┐
                      Spec          Y′
                              ┌──────┴──────┐
                             Y            DP
                                    ┌──────┴──────┐
                                  Pro           D′
                                          ┌──────┴──────┐
                                         D            DP
                                         │       ┌─────┴─────┐
                                       three    NP          D′
                                                │      ┌─────┴─────┐
                                              mice    D          AP
                                                      │           │
                                                      t         blind
```

However, this raises the natural question as to why restrictive adjectives must move from their base position. Why can't they remain in postnominal position like PPs, finite and reduced relative clauses?

3.4 Case in DP

We believe the Ezafe construction suggests an answer to this question. On the picture sketched above, DP is like VP in that:

- D selects thematic arguments.
- DP syntax is right-descending.
- DP modifiers are lowest complements of the head – all begin in post-head position.

Suppose now that DP is also like VP in deploying its own system of Case-marking; specifically suppose that:

- [+N] complements of D need Case – they bear a Case feature that must be checked.
- D/δ can (in general) check Case on its internal argument, just as V/*v* checks one Accusative on an internal argument of V.

Then we will have the following consequences:

- D will in general check Case on its NP restriction.
- DP-modifiers that do not have Case features to be checked (PPs, CPs, and disguised CPs) will remain *in situ*.
- DP-modifiers that bear Case features (APs) will be required to move to a site where they can check Case (e.g., by Concord).

So the general picture we have is as in (31). The determiner *every* checks its one structural Case on its nominal restriction (*woman*), exhausting its Case-checking potential. English postnominal PPs and CPs do not bear Case features, and therefore can stay in their base position. Likewise for reduced relative clauses, which we analyze as covert CPs, following Kayne (1994).[5] However APs that do not occur inside reduced relatives cannot remain in place, and must move to a site where their Case can be checked.[6]

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[5] "Reduced relative clause" is not a uniform notion. English reduced RCs appear to be full finite clauses, as evidenced by the fact that they can contain a clausal negation licensing negative polarity items (e.g., *the men [not present in any of the pictures]*). Under a number of proposals, the presence of clausal negation always implies a c-commanding tense (Laka 1990; Zanuttini 1996, 1997). By contrast, in many languages, including nearly all with prenominal relatives (e.g., Turkish), reduced RCs are clearly less than full finite CPs (see Krause 2001).

[6] The mechanism of case-checking for languages with prenominal APs is discussed in Larson (2006), for the eastern Indo-Iranian language Pashto, which behaves like English in relevant respects. The derivation of a Pashto nominal *agha təge peghla* 'that thirsty girl':

(31)

$[_{DP}$ *Pro* $[_{D'}$ every $[_{D'}$ woman $[_{D'}$ *t* $\left\{\begin{array}{l}[_{PP}\text{ with blue-eyes}]\\{}[_{CP}\text{ who has blue-eyes}]\\{}[_{CP}\text{ ... invited ... }]\end{array}\right\}]]]]$

CASE

$[_{AP}$ blue-eyed $]$

3.4.1 *Ezafe construction again*

Suppose now that a language had in its D-system the equivalent of a "generalized genitive preposition" – an item that could be inserted to check Case on [+N] determiner complements. A single, additional Case would then become available for each such Case-marker, allowing APs/NPs/nominalPPs to remain *in situ*. Relative clauses and non-nominal PPs would not require such an element, and so none would appear.

We propose that this is what's happening in the Ezafe construction. Modifying NPs, APs, and (nominal) PPs are selected by D and generated postnominally as usual. As [+N] elements they bear Case features, and are Case-licensed by Ezafe in their base-position. We will tentatively consider Ezafe to form an XP phrase with its complement, but to cliticize onto the preceding [+N] element for phonological reasons. So the picture, for a simple Farsi NP like (32a), is as in (32b). The definite determiner *in* checks its one Case feature on its restriction. Ezafe is inserted and licenses the remaining modifiers in their base positions.

(32) a. in   ketâb-é sabz-é   jâleb
          DEF book-EZ green-EZ interesting
          "the interesting green book"

      b. $[_{DP}$ *Pro* $[_{D'}$ in $[_{DP}$ ketâb $[_{D'}$ *t* $[_{DP}[_{XP}$ é sabz$]$ $[_{D'}$ *t* $[_{XP}$ é jâleb$]]]]]]]]$

          CASE   CASE   CASE

(i) a. $[_{DP}$ $[_{NP}$ peghla$]$ $[_{D'}$ agha $[_{AP}$ təge$]]]$ *Merge Initial arguments of D; D agrees with AP on T*

     b. $[_{dP}$ d $[_{DP}$ $[_{NP}$ peghla$]$ $[_{D'}$ agha $[_{AP}$ təge$]]]]$ *Merge little* d

     c. $[_{dP}$ agha-d $[_{DP}$ $[_{NP}$ peghla$]$ $[_{D'}$ agha $[_{AP}$ təge$]]]]$ *Raise D*

     d. $[_{dP}$ $[_{AP}$ təge$]$ $[_{d'}$ agha-d $[_{DP}$ $[_{NP}$ peghla$]$ $[_{D'}$ agha $[_{AP}$ təge$]]]]]$ d *attracts AP*

     e. $[_{dP}$ d $[_{dP}$ $[_{AP}$ təge$]$ $[_{D'}$ agha-d $[_{DP}$ $[_{NP}$ peghla$]$ $[_{D'}$ agha $[_{AP}$ təge$]]]]]]$ *Merge* d

     f. $[_{dP}$ agha-d-d $[_{dP}$ $[_{AP}$ təge$]$ $[_{D'}$ agha-d $[_{DP}$ $[_{NP}$ peghla$]$ $[_{D'}$ agha $[_{AP}$ təge$]]]]]]$ *Raise head*

     g. $[_{dP}$ *Pro* $[_{D'}$ agha-d-d $[_{dP}$ $[_{AP}$ təge$]$ $[_{D'}$ agha-d $[_{DP}$ $[_{NP}$ peghla$]$ $[_{D'}$ agha $[_{AP}$ təge$]]]]]]]$

                                                                                    Project DP Subj

The crucial parametric property of Pashto (and, by extension, English) is hypothesized to be an EPP/Edge feature on little *d*. For details see Larson (2006).

Again, relative clauses (CPs) and non-nominal PPs do not require Case. Hence they can appear in their base site (like English RCs and PPs) without the need for a licensing Ezafe.

Under this proposal, Ezafe languages are special insofar as they reveal the deep position of all nominal modifiers. They can do so because they have a special Case-marking device.

Interesting evidence for the tie between D and Ezafe comes from Kurmanji, which also has the Ezafe construction, but which differs from Farsi in important subtleties. In brief, Kurmanji exhibits an alternation in the form of Ezafe according to definiteness. Kurmanji definite DPs with iterated modifiers show so-called *primary Ezafe* between the noun and its first modifier, but a distinct *secondary Ezafe* thereafter (33a). By contrast, Kurmanji indefinite DPs with iterated modifiers show *secondary Ezafe* throughout (33b).

(33) a. kitêb-**ên**   bas-**î**   nû
          book-1EZ(PL) good-2EZ(PL) new
          "the good new books"

      b. xani-n-**e**   bas-**î**   nû
          house-INDEF(PL)-2EZ(PL) good-2EZ(PL) new
          "some good, new houses"

Definiteness is very widely held to be an interpretable/meaningful property of determiners insofar as it is the semantics of D that establishes whether a nominal is definite or indefinite (Barwise and Cooper 1981; Diesing 1992; Keenan and Stavi 1994). Thus Kurmanji, which exhibits a distinct Ezafe for definiteness, would seem to indicate a relationship between Ezafe and D. In the theory developed here, the relation between Ezafe and (null definite/indefinite) D is in fact selectional: D selects EzP, hence this link is captured directly.

3.4.2 *Extending the analysis*

Our analysis has consequences beyond languages with the Ezafe construction. We will consider here three further extensions: to English, to Modern Greek, and to Japanese.

3.4.2.1 *Postnominal adjectives in English*   English shows one environment where adjectives that normally occur only prenominally can occur after N. This is the so-called indefinite pronoun construction (IPC).[7]

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[7] The terminology "indefinite pronoun" is adopted here from the literature (see, for example, Haspelmath 1997), despite our reservations about expressions like *everything* and *nothing* being referred to as "pronouns."

Thus adjectives like *interesting* and *tall* normally must occur prenominally (34); however, when they occur with indefinite pronouns like *everything/something/anything/nothing*, *everyone/someone/anyone/no one*, etc., they must occur in postnominal position, as seen in (35).

(34) a. i. every **interesting** book
          ii. *every book **interesting**

      b. i. a **tall** person
          ii. *a person **tall**

(35) a. i. ***interesting** everything
          ii. everything **interesting**

      b. i. ***tall** someone
          ii. someone **tall**

Many have tried to analyze the postnominal adjectives with indefinite pronouns as prenominal adjectives that have been stranded by N-raising (36):

(36) [$_{DP}$ every -thing [$_{NP}$ interesting [$_{NP}$__]]]

(Abney 1987, Kishimoto 2000)

However, as Larson and Marušič (2004) show, this analysis cannot be correct: adjectives in indefinite pronoun constructions do not behave like underlying prenominal adjectives, but as underlying postnominal adjectives.

To give an illustration of the arguments, English measure adjectives show a difference in inflection when they occur pre- vs. postnominally, as noted by Sadler and Arnold (1994). In postnominal position, the unit phrase shows plural inflection (37a, 38a), whereas in prenominal position, it is uninflected (37b, 38b). If adjectives with indefinite pronouns were stranded prenominal modifiers, we would expect the inflectionless form (39). But this is not what we see. The form we get is the inflected one, characteristic of postnominal adjectives (40). This argues against the N-Raising analysis.

(37) a. a rope [23 **inches** long]

      b. a [23 **inch** long] rope

(38) a. a river [two **miles** wide]

      b. a [two **mile** wide] river

(39) [$_{DP}$ any **thing** [$_{NP}$ **23 inch long** [$_{NP}$ __]]]

(40) a. anything 23 **inch<u>es</u>** long /*23 **inch** long

  b. everything two **mile<u>s</u>** wide/*two **mile** wide

Another problem for the raising analysis concerns modifier recursion. Although indefinite pronoun constructions allow adjectives to occur post-nominally that ordinarily could not occur there, only a single such form is permitted. As (41a, b) show, more than one such adjective yields ungrammaticality. Two postnominal adjectives are permitted when one of them would independently be allowed in the postnominal slot, as in (42a) and (43a), but here again there is a restriction. The adjective that is ordinarily disallowed in postnominal position must occur adjacent to the indefinite pronoun (42b, 43b).

(41) a. everyone **tall** (***heavy**)

  b. everyone **heavy** (***tall**)

(42) a. everyone [**tall**] [**present**] (cf. every woman present/*tall)

  b. *everyone [**present**] [**tall**]

(43) a. something [**large**] [**spotted**] (cf. some object spotted/*large)

  b. *something [**spotted**] [**large**]

None of this is predicted by the stranding analysis. Since adjectives stack in the prenominal position it is a mystery why two prenominal adjectives would be forbidden postnominally: the noun should just be able to raise around them (44).

(44) *[DP every **one** [NP **tall** [NP **heavy** [NP ___]]]]

  (cf. *every tall heavy person*)

Likewise, it's unclear why there should be any ordering restriction.

   Our Case-analysis permits a surprisingly simple account, however. Suppose that a determiner's NP restriction – its internal argument – could incorporate into it, just as verbs are known to be able to incorporate their objects. Following Baker's (1988) analysis of object incorporation in Southern Tiwa, we might expect the determiner's single Case feature to be "freed up" for checking on a single additional argument.

   We propose that this is what is happening with APs in English IPCs. The indefinite N (*-one, -thing, -place, -where*) incorporates into D, freeing its single Case feature for alternative checking. Exactly one AP is then licensed in the postnominal position by the free Case feature, as displayed in (45):

(45)   [DP *Pro*[D′ every-one [AP tall]]]

                     CASE

The ordering restriction we observe on the postnominal adjectives can then be understood as a version of the usual adjacency/minimality requirement on Case-checked items vis-a-vis their Case-checkers (46):[8]

(46)   [DP *Pro*[D′ every-one [CP ... present ...][AP tall]]]

                          ✕
                         CASE

3.4.2.2 *Polydefiniteness/D-spreading in Modern Greek*   Like English, Modern Greek shows prenominal restrictive adjectives that cannot typically appear postnominally. This is illustrated in the contrast between (47a) and (47b).[9]

(47)   a. to meghalo petrino spiti
           the big   of.stone house
           "the big stone house"

       b. *to spiti   meghalo petrino
           the house big   of.stone

But postnominal APs can be licensed in Modern Greek definite DPs via the phenomenon of "determiner spreading," in which the definite determiner is essentially duplicated between each of the modifiers. Thus either (48a) or (48b) is possible (Androutsopoulou 1994, 1995; Alexiadou and Wilder 1998; Kolliakou 1998; Marinis and Panagiotidis 2004).

(48)   a. **to** spiti **to** meghalo **to** petrino
           the house the big   the of.stone
           "the big stone house"

       b. **to** spiti **to** petrino **to** meghalo
           the house the of.stone the big
           "the big stone house"

Interestingly, the possibility of D-spreading imposes at least two constraints. First, the adjective must be interpreted restrictively. Second, only intersective/predicating As are permitted. These facts are illustrated in (49–51). In

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[8] By contrast, postnominal modifiers that do not require case are predicted to stack freely and show no ordering restrictions.

[9] Chris Kennedy (p.c.) raises the interesting question of whether verb-copying is available for case-marking in the verbal domain as well. The phenomenon of verb serialization in West African languages suggests a possible general analogy.

(49a) (from Marinis and Panagiotidis 2004) the prenominal A *ikani* 'competent' appearing in the boldfaced DP is interpreted either restrictively or unrestrictively. Thus DP can be understood as referring only to the competent researchers, or to all the researchers (who are understood to be competent). By contrast in (49b), with D-spreading, only the former, restrictive interpretation is available for the postnominal A.

(49) a. O dhiefthindis dhilose oti **I   ikani**
          the manager   declared that the competent

          erevnites tha eprepe na   apolithun.
          researchers FUT had.to SUBJ fired.3PL

          "The manager declared that the competent researchers should be
          fired." (restrictive or non-restrictive interpretation)

      b. O dhiefthindis dhilose oti **I   erevnites   I**
          the director   declared that the researchers the

          ikani   tha eprepe na   apolithun.
          competent FUT had.to SUBJ fired.3PL

          "The manager declared that just the competent researchers should
          be fired." (only restrictive interpretation)

The second constraint – that only intersective/predicating As can appear - is demonstrated in (50) and (51) (from Alexiadou and Wilder 1998). (50a, b) show that the non-intersective adjective *ipotithemenos* 'alleged' can appear in prenominal position, but not in the D-spreading construction. Similarly for (51a, b), which involve the non-predicating nationality adjective *italiki* 'Italian'.

(50) a. o **ipotithemenos** dolophonos
          the alleged   murderer
          "the alleged murderer"

      b. *o dolophonos o **ipotithemenos**
          (cf. *O dolophonos itan ipotithemenos. "The murderer was
          alleged.")

(51) a. i   **italiki** isvoli
          the Italian invasion
          "the Italian invasion"

      b. *i isvoli   i   **italiki**
          the invasion the Italian
          (cf. * I isvoli stin Alvania itan italiki. "The invasion of Albania was
          Italian.")

The facts of Modern Greek raise simple and immediate questions: How does D-spreading license a postnominal A that would have otherwise been disallowed? And why must A be read restrictively/predicatively? Again the D-shell analysis offers an attractive answer.

On our proposal, multiple modifiers involve multiple DP-shells through which D raises recursively. Suppose that as D raised through the DP-shells, it were permitted to leave behind a copy whose formal but not semantic features were active. Assuming, as we have, that D checks the Case features on its complements, we would expect a single additional D Case to become available for each copy of D, allowing an AP to remain *in situ* for each copy.

We suggest that this is exactly what is happening in the Greek polydefiniteness construction. When definite D raises, it has the option of leaving copies behind (52a); this licenses exactly one AP/NP in each shell by each copied head (52b).

(52)

a. [$_{DP}$ *Pro*[$_{D'}$ **to** [$_{DP}$ spiti [$_{D'}$ **to** [$_{DP}$ [$_{AP}$ meghalo] [$_{D'}$ **to** [$_{AP}$ petrino]]]]]]]

     the   house   the   big   the   of.stone

b. [$_{DP}$ *Pro*[$_{D'}$ **to** [$_{DP}$ spiti [$_{D'}$ **to** [$_{DP}$ [$_{AP}$ meghalo] [$_{D'}$ **to** [$_{AP}$ petrino]]]]]]]

         CASE   CASE   CASE

In the case where no copies are left, no Case is assigned to the APs/NPs, and they must raise (53a, b).

(53)   a. **to**   meghalo petrino spiti
           the big   of.stone house
           "the big stone house"

      b. ***to** spiti   meghalo petrino
          the house big   of.stone

3.4.2.3 *Japanese adjectival morphology*   The Ezafe construction and the general approach to DP structure pursued here suggest many intriguing connections, of which we will sketch just one. The Indo-Iranian language Zazaki exhibits the Ezafe construction in a significantly more complex form than Modern Persian. Whereas Ezafe is invariant (up to phonological alternation) in Persian, in Zazaki the Ezafe element inflects according to the number (sg/pl) and the gender (masc/fem) of the modified noun. Furthermore, and

TABLE 3.1. Zazaki Ezafe morphemes

	Descriptive	Genitive
Masculine Cons. Stem	*-o*	*-e*
Masculine Vowel Stem	*-yo(2)*	*-y*
Feminine Cons. Stem	*-a*	*-a*
Feminine Vowel Stem	*-ya*	*-y(a)*
Plural Cons. Stem	*-e*	*-e*
Plural Vowel Stem	*-y*	*-y*

more importantly for our purposes, Zazaki distinguishes between a *descriptive Ezafe*, which links a modified noun with an adjective, and a *genitive Ezafe*, which links a noun to another noun in the possessive relation. Table 3.1 gives the set of Zazaki Ezafe forms, drawn from Todd (1985).[10] Examples are provided in (54–55) also from Todd (1985).

(54) a. ban-**e**   min
           house(MASC)-EZ me(OBL)
           "my house"

    b. ling-**a**   min
           foot(FEM)-EZ me(OBL)
           "my foot"

    c. ling-**e**   min
           feet(PL)-EZ me(OBL)
           "my feet"

(55) a. pir'tok-**o**   find
           book(MASC)-EZ good
           "good book"

    b. top-**a**   wer'd-i
           ball(FEM)-EZ small-FEM
           "small ball"

    c. pir'tok-**e**   gird-is
           book(PL)-EZ big-PL
           "big books"

[10] Table 3.1 leaves out what Todd labels the *subordinated* Ezafe series, which occur in the context of certain oblique case environments. That Ezafe alternates in this circumstance again suggests that it is a form of case-marking. See Larson and Yamakido (2005) for more on subordinated Ezafe.

Under the view of Ezafe as a Case-marker, this suggests that Zazaki distin-
guishes at least two cases within the nominal: one with which it marks NP/DP
modifiers in a genitive relation N (54), and a second that it uses for adjectival
modifiers in a descriptive relation (55).

Given this result, it is interesting to observe that Japanese appears to make
a very similar distinction in its system of marking for prenominal modifiers.
Japanese contains a morpheme *-no* that is used to link a noun with an NP/DP
in a genitive or modifying relation (56a–c).

(56) a.   Taroo-**no** kyoodai
           Taroo-GEN sibling
           "Taroo's siblings"

      b.   Taroo-**no** hon
           Taroo-GEN book
           "Taroo's book"

      c.   Nihonzin-**no** gakusee
           Japanese-GEN student
           "Japanese student (student who is Japanese)"

In addition, Japanese contains morphemes that are used to link a noun with
an attributive AP, an AP in a descriptive/modifying relation. There are in fact
two such morphemes, *-i* and *-na*, corresponding to the two classes of Japanese
adjectives, so-called "true adjectives" (57a, b) and "nominal adjectives"
(57c, d).

(57) a.   utukusi-**i** tori
           beautiful-? bird
           "beautiful bird"

      b.   taka-**i**   hon
           expensive-? book
           "expensive book"

      c.   kiree-**na** uti
           clean-?   house
           "clean, tidy house"

      d.   sizuka-**na** umi
           quiet-?   sea
           "quiet sea"

While the morpheme *-no* in (56) is standardly classified in Japanese grammar
books as a genitive case-marker, the status of *-i* and *-na* has been much more

controversial. A large number of linguists have assumed that these morphemes represent tenses, copulas, or tensed forms of the copula, implying that (57a–d) all represent covert relative clause constructions (58a–d).

(58) a. utukusi-**i**   tori
          beautiful-cop bird
          "bird that is beautiful"

      b. taka-**i**   hon
          expensive-cop book
          "book that is expensive"

      c. kiree-**na**   uti
          clean-cop house
          "house that is clean, tidy"

      d. sizuka-**na** umi
          quiet-cop sea
          "sea that is quiet"

However, Yamakido (2000, 2005, 2007) argues convincingly that the relative clause analysis cannot be correct. One simple piece of evidence is the existence of non-predicating Japanese AP constructions like (59a, b).

(59) a. huru-**i** tomodati
          old   friend
          "longtime friend" (cf. # "friend who is longtime")

      b. kanzen-**na** baka
          complete   fool
          "complete fool" (cf. # "fool who is complete")

If the adjectival linking morphemes are not tenses, copulas, or tensed copulas, then what are they? Yamakido (2005) argues that these elements are in fact case morphology. Hence if she is correct, then not only do *-no*, *-i*, and *-na* form a set, their pattern (abstracting from number and gender) is essentially identical to that of Zazaki: *-no* represents the Japanese genitive Ezafe morpheme used to link a noun with a modifying NP/DP in a possessive relation, and *-i*/*-na* represents the Ezafe morpheme used to link a noun with a modifying AP in a descriptive relation.

3.5 Summary

In this chapter we introduced the Ezafe construction, in which NPs, APs, and some PPs are "unexpectedly" postnominal. We explored a theory of DP

structure in which all DP modifiers begin postnominally as complements of D, and we suggested that Case is behind pre-/postnominal distribution: APs, NPs, and nominal PPs need Case, but can't normally get it *in situ*.

We analyzed Ezafe as a special device for making Case available in the base site, thus allowing the underlying postnominal position of nominal modifiers to emerge. We argued that our Case-theoretic approach has potential relevance not only to "exotic" Indo-Iranian languages with the Ezafe construction, but also to the peculiar distribution of postnominal adjectives in the English indefinite pronoun construction, and to the polydefiniteness construction of Modern Greek. These represent alternative case-mechanisms allowing the [+N] modifiers to remain in place. The first was suggested to represent a case of NP incorporation, parallel to object incorporation in the verbal domain. The second was proposed to represent a case of copy raising. Finally, we suggested that reflection on more complex forms of the Ezafe construction offers interesting analytical possibilities for other languages. In particular the distribution of Ezafe in Zazaki nominals containing a modifying NP or AP appears remarkably similar in pattern to Japanese inflection in nominals containing a possessive nominal or a descriptive AP. These elements, whose analysis is otherwise problematic, can be viewed as Case-marking, following Yamakido (2005, 2007).