Locative Inversion, VP-adjunction and Turkish relativization

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0 Introduction

Since the inceptive analysis of Turkish relativization within the generative framework (Underhill 1972), it has been a well-recorded fact that constituents of locative phrases in Turkish can be extracted with the relativization strategy that extracts “deep” subjects, i.e. definite subject D(eterminer) P(hrase)s of transitive, unaccusative and unergative structures. These “anomalous” cases of extraction are illustrated in (1) and (2):

(1) a. [Kafes-in iç- in- de] bir aslan uyu-yor.
cage-gen inside-3poss-loc a lion sleep-prog
   ‘A lion is sleeping inside the cage.’

   inside- 3poss-loc a lion sleep-part cage
   ‘the cage in which a lion is sleeping’

hut- gen side- 3poss-loc a dog stand-prog
   ‘A dog is standing next to the hut.’

   side- 3poss-loc a dog stand- part hut
   ‘the hut that a dog is standing next to’

Within the assumptions of transformational grammar, Underhill (1972) accounted for the facts of (1) and (2) in terms of rule ordering, wherein relativization was assumed to apply after the rule of subject incorporation that had the effect of incorporating an indefinite subject into the verb. To account for the same set of facts, Hanksamer & Knecht (1976) proposed a generalized principle which predicted the distribution of the two strategies in terms of the major constituent, i.e. the “mother node”, dominating the relativized element.

Recent research within the generative theory has revealed the significance of argument structure and thematic relations of DPs for syntactic op-
erations where a number of syntactic phenomena have been shown to be crucially sensitive to the θ-roles borne by arguments of verbs (Chomsky 1981; 1986; Levin & Rappaport 1986; Zubizarreta 1987; Grimshaw 1990). Within this framework, Bresnan & Kanerva (1989) propose to derive structures similar to (2a) in Chichewa by the application of a rule of Locative Inversion which basically has the effect of placing the locative phrase in [SPEC, VP] where it assumes the properties of subject. In a recent analysis of Turkish relativization, Poole (1992) suggests a similar derivation for (1) and (2). For cases exemplified in (2), this approach is assumed by Kennelly (1994) who argues for the v'-internal nature of the existential DPs in Turkish, where DPs appear caseless, licensed under strict government by the lexical verb. She further notes that, based on the unaccusative hypothesis, unergatives and transitives in Turkish are predicted not to have nonspecific subjects.1

This paper will basically show that the agentive DP in (1) is the indefinite subject of the unergative verb, possessing properties shared by indefinite DPs in Turkish. In line with Poole’s suggestion, it will also be claimed that in (1) Locative Inversion applies to move the locative DP into [SPEC, VP]. However, in the case of unergatives, Locative Inversion applies by VP-adjunction such that the indefinite subject of the unergative remains in its original [SPEC, VP] position, licensed by the zero case marker assigned by default to DPs in [SPEC, VP] which do not possess Φ-features, hence do not move to AGRSP at LF to check for feature matching. VP-adjunction adheres to the general principles of adjunction specified in Chomsky (1986; 1993) and as such does not violate any universal principles.

The paper is organized as follows: Section 1 introduces the two strategies of Turkish relativization. Section 2 discusses the instances of Locative Inversion in unergatives. Section 3 presents the analysis.

1 Turkish relativization

1.1 The two strategies

Turkish has two main strategies for forming relative clauses: the -(y)An strategy and the -DIK strategy, traditionally referred to as subject and object strategies respectively (cf. Underhill 1972).2 These are exemplified in (3) and (4):

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1 See Eng (1991) for a discussion of specificity in Turkish.

2 Relativization in Turkish is an extraction process whereby the DP coreferential with head noun is extracted from the embedded clause, leaving behind a variable that is co-indexed with the operator, OP, in [SPEC, DP] relating the two θ-roles.
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(3) a. Aslan kafes-te uyu-yor.
   lion cage-loc sleep-prog
   'The lion is sleeping in the cage.'

b. [Op [ ei kafes-te uyu-yan] aslan]
   part lion
   'the lion which is sleeping in the cage'

c. *[Op [ ei kafes-te uyu-3poss sleep-3poss] aslan]
   part 3poss lion
   'the lion which is sleeping in the cage'

(4) a. Aslan geyiği koval-iyor.
   lion deer-acc chase-prog
   'The lion is chasing the deer.'

b. [Op [ aslan-me koval-3poss] geyik]
   part 3poss deer
   'the deer that the lion is chasing'

c. *[Op [ aslan ei koval-yan] geyik]
   part deer
   'the deer which the deer is chasing' (attempted reading)
   'the deer that is chasing a lion' (assigned reading)

In (3), the target of extraction is the subject, and in (4), the object. (3) is relativized with the -(y)An strategy and (4) with the -DIK strategy. The reversal of strategies is impossible in (3c) and results in ungrammaticality in the intended reading in (4c). (4c) is grammatical only in the reading in which the extracted constituent is interpreted as the subject, not the object, of the embedded sentence.

Note that the two strategies differ from each other with respect to their internal morphology. Unlike the internal morphology of the -DIK strategy, which is in line with that of complement clauses with its subject marked with GEN(itive) and the embedded verb with AGR(eement)-N(oun), the -(y)An strategy lacks agreement.

Note further that in the canonical cases of extraction from [SPEC, VP], i.e. extraction of DPs with Φ-features, the -(y)An strategy does not distinguish between the various 0-roles of DPs. Thus, while in (3) and (4) respectively, the subjects of transitive and unergative verbs, i.e. agents, have been extracted, (5a-c) illustrate the extraction of presuppositional subjects of ergative, and thematic subjects of unaccusatives (motion and passive verbs):

(5) a. [Op [ ei firtına-bat- an ] gemi]
   storm-loc sink-part 3poss boat
   'the boat that sank in the storm'
The fact that, similar to (3c), the reversal of the strategies in the examples above results in ungrammaticality proves that the -(y)An strategy operates on the syntactic relation of the subject DP, not its θ-roles.

Capturing the generalization of Hankamer & Knecht (1976) for the distribution of the -(y)An and -DIK strategies and assuming the analysis of DP structure for Turkish as proposed by Kornfilt (1984), which distinguishes between DPs that have overt agreement on [SPEC, DP] and the head of the DP as opposed to those DPs that do not have overt agreement markers, Poole (1992) proposes the following representations for the two relative clause strategies:

(6) -(y)An strategy

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\text{The crucial characteristic of this representation is the lack of AGRP over the DP node of the embedded clause (see appendix). The derivation of the strategy runs as follows: The VP-internal subject moves to [SPEC, IP] to be extracted by relativization. The variable in [SPEC, IP] is bound by the Operator.}
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in [SPEC, DP] which is coindexed with the head noun of the maximal DP. The embedded verb raises and adjoins to \( \tau \) to be marked with -(y)\( An \), or another one of the three participle suffixes: the -(y)\( An \) suffix for the tenseless structures, the -(y)\( AcAk \) and -(mls) suffixes for the relevant tense/aspect distinctions. Since there is no AGRSP dominating the DP, the lack of AGR-N features on the embedded verb is predicted.

Poole (1992) proposes the following derivation for the -DIK relativization:

\[
(7) \quad -DIK \text{ strategy}
\]

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  DP
   \arrow{SPEC}
     \arrow{D'}
       \arrow{AGR}
         \arrow{D^n}
           \arrow{SPEC}
             \arrow{AGR'}
               \arrow{geyik^n}
                 \arrow{aslan^n}
                   \arrow{DP}
                     \arrow{AGR-N^n}
                       \arrow{SPEC}
                         \arrow{D'}
                           \arrow{3sg}
                             \arrow{Op}
                               \arrow{IP}
                                 \arrow{D^n}
                                   \arrow{SPEC}
                                     \arrow{\tau^n}
                                       \arrow{VP}
                                         \arrow{\tau^n}
                                           \arrow{SPEC}
                                             \arrow{V^n}
                                               \arrow{DIK}
                                                 \arrow{t^n}
                                                   \arrow{DP}
                                                     \arrow{V}
                                                       \arrow{\alpha_i}
                                                         \arrow{kovala-}
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The derivation proceeds as follows: the VP-internal subject possessing \( \Phi \)-features is raised to [SPEC, IP], then to [SPEC, AGRSP] to check for feature matching. The Operator is in [SPEC, DP], binding the variable within the VP. Poole (1992) points out that the apparent violation of minimality is nevertheless ineffective since it becomes a serious offense to the derivation only in those cases in which there is also a violation of the ECP. The embedded
verb adjoins successively cyclically to 1', then to D' and finally to AGR-N' to check for feature matching.

1.2 Locative Inversion and the -(y)An strategy

As has already been noted in (1) and (2), what is significant in Turkish relativization is that the -(y)An strategy also applies to extract constituents of locative DPs of unergatives and unaccusatives in those cases in which the subject of the embedded clause is nonspecific, i.e. lacking Φ-features:

(8) a. [Kafes- in iç- in- de] (bir)aslan uyuyor.
    cage- gen inside-3poss-loc a lion sleep- prog
    'A lion is sleeping inside the cage.'
    b. [Oπ₁ [ eİ iç- in- de] (bir)aslan uyuyan] kafes₁
    side- 3poss-loc a lion sleep- part cage
    'the cage in which a lion is sleeping'

(9) a. [Kulübe-nin yan- in- da] (bir) köpek havlayyor.
    hut- gen side- 3poss-loc a dog bark- prog
    'A dog is barking next to the hut.'
    b. [Oπ₁ [ eİ yan- in- da] (bir) köpek havlayan] kulübe₁
    side- 3poss-loc a dog bark- part hut
    'the hut that a dog is barking next to = 'the hut next to which a dog is barking''

(10) a. Orman- da geyik var.
    forest- loc deer exist
    'There are deer in the forest.'
    b. [O₁ [ eİ geyik ol- an] ] orman₁
    deer be- part forest
    'The forest in which there are deer'

    forest- loc deer hunt- pass- prog
    'Deer are being hunted in the forest.'
    b. [O₁ [ eİ geyik avlay- n- an] orman₁
    deer hunt- pass- part forest
    'the forest in which deer are hunted'

(8) and (9) are instances of extraction of the locative DP of unergatives and (10) and (11) of existential and passive unaccusatives.

Poole (1993) proposes to derive these structures by means of Locative Inversion which has the effect of moving the LOC DP to [SPEC, VP], making
it possible for this DP to behave like a subject with respect to relativization. The V'-internal subject is nonspecific, i.e. unmarked for Φ-features, hence does not raise to [SPEC, AGRsp]. The locative DP moves to [SPEC, IP] through LOC INV. The DP in [SPEC, IP] is then extracted through relativization, leaving a variable in its deep position co-indexed with the Operator in [SPEC, DP].

In a recent analysis of unaccusatives with nonspecific subjects, Kennelly (1994) uses the extraction properties of the subjects of unaccusatives as diagnostic tools to argue that in the structures exemplified in (10) and (11), the subject DP is in V'-internal position as a sister of the verb. The DPs are caseless, licensed under strict government by the lexical head. The locative phrase is in [SPEC,VP], extracted by the -(y)An strategy.

We now turn to show that the agentive DPs overtly unmarked for case in (8) and (9) are indeed nonspecific, exhibiting the general characteristics of nonspecific DPs in Turkish.

2 Indefinite agentic subjects of unergatives

Note that the agentive DPs obligatorily occur in the immediately preverbal position in (8) and (9) where the reversal of the order of the agentive DP and the locative phrase results in a change in the assignment of referential properties to the former, as illustrated in (12) and (13):

(12) Aslan kafes- in iç- in- de uyu- yor.
     lion cage- gen inside- 3poss-loc sleep- prog
     ‘The lion is sleeping inside the cage.’

(13) Körpekulübe- nin yan- in- da havl- yor.
     dog hut- gen side- 3poss-loc bark- prog
     ‘The dog is barking next to the hut.’

That the agentive DP of an unergative verb which is not in the immediately preverbal position is necessarily interpreted as referential can be observed in the difference in the readings assigned to (8) and (9) as opposed to (12) and (13).

The nonspecific DPs in (8) and (9) are, however, not incorporated into the verb in the sense of Baker (1988). Note that the same argument proposed by Kural (1992) for existential DPs in Turkish also holds for subject DPs of unergatives; the emphatic element bile ‘even’, and the additive particle DA can occur between the subject DP and the verb:
   cage- gen inside- 3poss-loc lion add sleep- prog
   'A lion also is sleeping in the cage.'
   cage- gen inside- 3poss-loc lion even sleep- prog
   'Even a lion is sleeping in the cage.' = 'There is even a lion sleeping in the cage.'

Note further that the agentive DPs of unergatives in (8) and (9) behave as indefinite DPs in complement clauses as well. Similar to the nonspecific DPs of unaccusatives, the nonspecific agentive DPs of unergatives are also not marked with the Genitive case:

(15) a. Çocuk- lar [bahçe- de kuş- (un) öt- tüğ- ün-] ü duy- du- lar.
   child- pl garden- loc bird- (gen) chirp- nom- 3poss-acc hear- past- pl
   'The children heard a-(the) bird chirp in the garden.'
   visitor- pl cage- loc lion- (gen) sleep- nom- 3poss-acc notice- past-pl
   'The visitors noticed that a lion was sleeping in the cage.'

Those cases in which the agentive DP is marked with the Genitive marker are the specific readings of the DPs. In these cases, the agentive DP moves to [SPEC, VP] to have its features checked with AGRSP at LF.

Thus, having shown that the agentive DP in unergative structures behaves as a typical indefinite DP, let us now turn to an analysis of the structures in an attempt to explain how it is that extraction from the locative phrase is permitted in (8) and (9).

3 Analysis

3.1 V'-internal subjects

One possible analysis is to assume that unergative structures in Turkish are underlingly derived from a structure in which the agentive DPs in (8) and (9) are in V'-internal position. However, unlike unaccusatives, the V'-internal position of the DP is not sister of V but, as an adjunct DP, licensed by the zero adjunct case assigned to nonspecific DPs in that position. In those cases in which the agentive DP possesses Φ-features, it would move to [SPEC, VP] to have its features checked at LF by AGRSP. In those cases where the DP does not possess Φ-features, i.e. is nonspecific, it would remain in situ in its adjunct position, licensed by the adjunct case. In these latter cases, Locative Inversion would apply, moving the locative DP into
[SPEC, VP] where it would have its features checked by AGRsP (cf. Kennelly 1994).

The implausibility of such an argument is obvious, however. Note that such an argument would be positing a class of verbs which subcategorize only for an adjunct, an obvious violation of the universal nature of argument structure. Within this approach, unergatives, similar to unaccusatives, would constitute another class of DPs which do not assign θ-role to their [SPEC, VP]; however, unlike unaccusatives, they would not subcategorize for an internal argument, resulting in an analysis in which a class of verbs with only oblique arguments is posited. Further, the asymmetry implicit in the treatment of agents of transitives and unergatives under such an analysis would be assuming a semantic difference between the two sets of agentive DPs.

Note that in this analysis, the lack of an overt case marker on DPs would have the following sources:

(i) NOM checked for by [AGRsP]
(ii) caseless V'-internal thematic DPs of unaccusatives licensed under strict government by the verb
(iii) zero adjunct case of V'-internal nonspecific agentive DPs of unergatives

In those cases where there is no locative DP to invert, [SPEC, VP] is filled by pro. Note that, as illustrated in (16a-b), the plural nonspecific DPs do not trigger subject verb agreement, providing evidence that there is pro in the subject position of these sentences:

(16) a. pro köpek- ler havl- iyor- *lar.
    (street-loc) dog- pl bark- prog
    'In the street, dogs are barking.'
    dog- pl street- loc bark- prog- pl
    '(The) Dogs are barking in the street.'

3.2 An alternate analysis

What is alternately suggested here is that subject DPs of unergatives are generated in [SPEC, VP], similar to the agentive DPs of transitive structures. In the case that the agentive DP of the unergative is not marked for Φ-features, there hence being a potential mismatch during the feature-checking process at LF as a result of which the derivation would collapse, Locative Inversion applies by means of VP-Adjunction to move the Locative DP to [SPEC, VP]
position. The agentive DP remains in its deep [SPEC, VP] position where it is assigned the default zero case of DPs in [SPEC, VP] which cannot move to [SPEC, AGRsP] to have their features matched at LF; the adjunction of the locative DP to the [SPEC, VP] through adjunction blocks the LF movement of the nonspecific agentive DP. Feature checking at LF is satisfied since AGRSP also checks for locative features in Turkish (cf. Kennelly 1994). Hence, the following representation is proposed for extraction from the locative DP of unergatives:

(17)  

```
      DP
     / \  
    SPEC D'
     /  
   DP  D''
  /    |
SPEC D' aslan
    Oph IP
        /  
       D''
      /    
     SPEC F
      /  
    a VP
     /  
   p'  
  /    
SPEC VP (y)An
      /  
    V'  
```

In the above representation, the agentive DP of the unergative is generated in the "deep" subject position of [SPEC, VP]. Lacking Φ-features, it does not move to [SPEC, AGRsP] at LF. The locative phrase, therefore, adjoins to VP, raising to [SPEC, AGRsP] at LF to check for feature matching and to legitimate the structure. The nonspecific agentive DP in the lower [SPEC, VP] is licensed by the default case assigned to DPs in [SPEC, VP] which cannot raise to [SPEC, AGRsP] to check for feature matching.

Note that VP-adjunction would not violate any universal principles since it does not involve adjunction to complementation and it is structure-preserving in the sense of Chomsky (1993).

The analysis would also explain the at best marginal nature of those structures in which the nonspecific DP of an unergative is not preceded by a locative phrase, as observed by Kural (1993):
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(18) a. *Bir tavuk piş-iyor.
   a chicken cook-prog-agr
   'A chicken is cooking.'

b. *Bir bardak kır-ı-miş.
   a glass break-pass-past-agr
   'A glass is broken.'

c. ?*Bir adam uyuy-muş.
   a man sleep-past-agr
   'A man slept.' (Kural 1993)

The presence of a nonspecific DP in [SPEC, VP] would offend the derivation since feature checking at LF would not be matched.

Note further that the proposed analysis also explains the constraint on extraction from locative DPs of unergatives prohibiting the extraction of the head of the locative phrase with the -(y)Ani strategy:

    cage-loc lion sleep-prog
    'A lion is sleeping in the cage.'

b. *[Op] aslan uyuy-yan kafes
    lion sleep-part cage
    'the cage in which a lion is sleeping' (attempted reading)

c. [Op] aslan-ın uyuy-duğ-u kafes
    lion-gen sleep-part-3poss cage
    'the cage in which the lion is sleeping'

(20) a. [Kulübe-de] köpek havl-iyor.
    hut-loc dog bark-prog
    'A dog is barking in the hut.'

b. *[Op] köpek havla-yan kulübe
    dog bark-part hut
    'the hut in which the dog is barking' (attempted reading)

    dog-gen bark-part-3poss hut
    'the hut in which one (specific) dog is barking'

Since Locative Inversion applies to place a DP with Φ-features in [SPEC, VP], it seems that extraction of the head of the locative DP does not satisfy feature checking at LF. The presence of a phonologically overt DP in those cases where the AGRsp is checking for locative agreement in unergative structures seems to be necessary to overrule the effect of the agentive DP in the SPEC position of the lower VP. The head deletion constraint is not rele-
vant in the case of unaccusatives, since the unmarked DP is the caseless V'-internal thematic argument of the verb licensed under strict government by the lexical head.

3.3 Residue-transitive structures

This analysis also explains the apparent difference in the behavior of agents of unergatives and transitives with respect to extraction from locative DPs. As illustrated in the examples below, extraction of a locative phrase with the -(y)An strategy is generally not allowed in transitive structures:

(21) a. *[OP [geyiğ- i e aslan kovala- yan]orman
deer- acc lion chase- part forest
‘the forest in which a lion is chasing the deer’

b. *[OP [ e aslan geyik kovala- yan]orman
lion deer chase- part forest
‘the forest in which a lion is chasing a deer’

In these constructions, the locative phrase can be extracted only with the -DIK strategy:

(22) a. [Op[ aslan-ın e] geyik kovala- digi- ]ı ormanı
lion- gen deer chase- part- 3poss forest
‘the forest in which the lion is chasing (a) deer’

lion- gen deer chase- part- 3poss forest
‘the forest in which the lion is chasing the deer’

Note that extraction of the specific object with the -(y)An strategy in those cases in which the subject of the transitive is nonspecific violates the argument prominence relations of Grimshaw (1990) and hence is prohibited:

(23) *[orman- da aslan kovala- yan]guyik
forest- loc lion chase- part deer
‘the deer that a lion is chasing in the forest’

Note further that subjects of transitive complement clauses do not behave in a manner similar to the nonspecific agentive DPs of unergatives:

(24) [Orman- da aslan- *(m) geyik- (i) kovala- digi- m-ı]ı gör- dü- m.
forest- loc lion- *(gen) deer- (acc) chase- nom- 3poss-acc see- past- 1sg
‘I saw that a lion was chasing a deer in the forest.’
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The agentive DP of a transitive verb is generally obligatorily marked with the Genitive marker, indicating that it is inherently specific.

However, there are few instances in which the agentive DPs of transitives exhibit behavior similar to that of nonspecific agentive DPs of unergatives and nonspecific thematic DPs of unaccusatives, hence possibly presenting evidence against the argument proposed here. Consider the following:

(25) a. [Çocuğun kolunu an soktuğunu gördüm.]
    child-gen arm-3poss-acc bee sting-nom-3poss-acc see-past-1sg
    'I saw a bee sting the child's arm.'

b. [ Köpeğin irs- an adam hastane- ye koştu.]
    dog bite-part man hospital-dat run-past
    'The man whom a dog bit ran to the hospital.'

It is certain that the analysis of such cases will reveal more about specificity in general and the syntactic properties of (non)-specific DPs in Turkish.

Appendix

In fact, a more uniform analysis for Turkish DPs can be posited. Turkish possesses two paradigms of AGR-N; (i) strong AGR-N and (ii) deficient AGR-N. Strong AGR-N is the canonical agreement paradigm in Turkish in which the agreement marker that is associated with the Φ-features of the head noun is overtly marked on the noun and the element in [SPEC, DP] is marked with the Genitive marker, as in (i) a-c:

(i) a. ben-im köpeğ-im
    b. sen-in köpeğ-in
    c. o-nun köpeğ-i

The second AGR-N paradigm in Turkish is a deficient paradigm in which the agreement marker is not overtly marked on the head. This paradigm which lacks phonological content of AGR-N is observed in DP s whose heads are certain terms of alienable possession, expressing close affinity to possessions or locations referred to. In this deficient paradigm, [SPEC, DP] is marked with the Genitive marker, but the head of the DP lacks an overt agreement marker:

(ii) a. ben-im ev
    b. sen-in arab
What is suggested here is that the two relativization strategies in Turkish are in fact derived from the same underlying structure. This structure is similar to the one posited for the -DIK strategy by Poole (1993) in that its [SPEC, DP] is topped with AGR-N. The representation is given below:

(iii)

```
  DP
   \---- SPEC
        \---- AGRP
             \---- SPEC
                  \---- AGR'
                       \---- DP
                            \---- SPEC
                                 \---- O_p
                                          \---- IP
                                               \---- SPEC
                                                    \---- t
                                                        \---- VP
                                                             \---- SPEC
                                                                  \---- DP
geyik
                                                                  \---- v
                                                                        \---- (y)An
                                                                             \---- kovala-
```

Where this representation differs from that of the -DIK strategy is that the AGRsP that tops the [SPEC, IP] is the deficient AGR-N which has no phonological content for the agreement marker, while the one in the -DIK representation is the strong AGR-N, in the sense of Kornfilt (1984), which overtly marks the head noun with the appropriate agreement marker that matches the Φ-features of the lexical item.
References