

# Argument Structure, Animacy, Syntax and Semantics of Passivization in Turkish: A corpus-based approach

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## Abstract

This paper discusses the effect of animacy of DP arguments and their availability as referents of the implicit subjects of impersonal passive constructions involving unergative and unaccusative predicates. A three way distinction between the sources of animacy effects in language is proposed- inherent, teleological and inherited. Only those DPs that refer to inherently animate entities are accessible as referents of the implicit subjects of impersonal passive constructions. The paper also proposes a syntactic analysis of a construction that is closely related to animacy - the psych verb constructions in Turkish.

## I. Introduction

Cross-linguistic research has shown animacy to play an important role in determining the nature of a number of syntactic and morphological phenomena in natural languages. Studies such as Bock & Warren (2005), Gennari (2005). Zaenen et.al (2004) have shown animacy distinctions to be crucial in determining grammaticality in such syntactic and morphological constructs as case marking, voice selection, agreement systems. Branigan, et.al (2008) has established that there is a direct link between animacy, grammatical function assignment and word order. Rosenbach (2008) has investigated the status of animacy in the choice between the postnominal *of* construction and the prenominal 's construction in English genitive constructions, showing the effect animacy feature of nominals has on the nature of the grammatical constructions. Folli and Harley (2008) have investigated the role of animacy effects in the choice of external arguments and have argued that these have a syntactic reflex in determining the nature of the complement of  $v^0$ . Folli and Harlet have further argued that the source of animacy effects is the teleological capability of the referent of the nominal. Studies in theta role assignment have revealed the close link between the thematic role assigned to an argument in a given construction and the semantic features of the nominal. Van Valin and LaPolla (1997) have established the strong correlation between animacy and thematic roles. At the level of information structure, animacy hierarchy has been shown to be one of the accessibility scales hypothesized to have direct relevance for the grammatical prominence given to the realization of entities (Zaenen et.al 2004). The direct relevance of accessibility scales and animacy category has therefore been shown to constitute a significant aspect of the computational processing of natural language.

The effect of animacy within the grammar of Turkish was first investigated by Sezer (1980) who noted the crucial role the [ $\pm$ animate] feature of nominals plays in the morphosyntax of verbal agreement marking. Sezer showed that the overt marking of third

person plural agreement on the predicate is conditioned by the animacy feature of the subject phrase; [+animate] subject phrases trigger overt agreement, [-animate] subjects license abstract agreement. In a recent study, Nakipoğlu-Demiralp (2003) showed that in an impersonal passive construction in Turkish there is a close link between the tense/aspect marker on the verb and the referential properties of the implicit subject phrase: in those cases in which the verb is marked with the aorist marker, the implicit subject of the impersonal passive construction receives an indefinite interpretation. The implicit subject of the impersonal passive construction, on the other hand, receives a referential reading when the verb is marked with the past marker. Nakipoğlu-Demiralp (2003) has further argued that the distinction between unergative and unaccusative verbs is not a binary opposition but a continuum.

This paper investigates the relation between the animacy feature of argument nominals of unergative and unaccusative verbs in Turkish and their (in)accessibility as the implicit subject in the corresponding (impersonal) passive constructions. The Unaccusative hypothesis, initially proposed by Perlmutter (1978) and adopted by Burzio (1981), established that the two classes of intransitives - unergatives and unaccusatives - differ from each other with respect to their underlying syntactic configuration and the theta roles of their single argument. Given that the subjects of unergatives are assigned the theta role agent, the subjects of unaccusatives theme, the subjects of unergatives are typically nominals that refer to animate entities. Within the terminology of Levin and Rappaport-Hovav (1995), unergative verbs whose arguments are nominals referring to inanimate entities are labeled theme unergative verbs. Folli and Harley (2008) evoke Higginbotham's (1997) construct of 'teleological capability' to argue that the source of animacy effects in grammar is in fact "the inherent qualities and abilities of the entity to participate in the eventuality denoted by the predicate". Folli and Harley present evidence from sound emission predicates, possession constructions, causation chains and permission structures, to argue in favor of teleological capability as the source of the animacy effects.

Animacy of DPs as a means to constrain the application of passive in order to rule out overgeneration has recently been shown to be significant in a natural language processing project aimed at developing morphosyntactic tools to convert structures to paraphrasal constructions in Turkish texts (Meral, et.al. 2009). The project has thus revealed the significance of incorporating animacy accessibility into the computational processing of Turkish. The data also revealed a preliminary statistical account of the selectional properties of verb categories with respect to verbs which do not select between [±animate] nominals as their internal arguments. Such verbs statistically co-occur with [-animate] nominals as subjects of their passive counterparts.<sup>1</sup>

This paper argues for a 3-way distinction between sources of animacy of nominals in grammar: (i) inherent, (ii) teleological capability in the sense of Folli and Harley, and (iii) inherited animacy. Evidence for the 3-way distinction is presented by two animacy related phenomena in the grammar of Turkish. The first is the absence of a potential interpretation of an impersonal passive construction in which the implicit subject is understood to refer to a nominal which is not inherently animate but is nevertheless

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<sup>1</sup> The ratio of animate and inanimate nominals as subjects of passive sentences in the data was observed to be 6:1.

teleologically capable to function as the agentive subject of the corresponding active unergative predicate. The absence of such an interpretation of the implicit subject of an impersonal passive construction also holds for those nominals such as body parts which assume agentive properties not through teleological capability but through inheritance due to the whole-part relation they hold with an inherently animate nominal. What is significant is that the indefinite ‘agent’ interpretation the implicit subject of an impersonal passive sentence receives can only be assigned to inherently [+animate] entities. The data thus indicate that the animacy feature of the referent of the nominal is crucial in determining the referential properties of the implicit argument in an impersonal passive construction. Nouns which refer to inherently [-animate] entities possessing ‘teleological capability’ thus are able to function as the subject of the unergative predicate in the active construction are nevertheless not available as the referent of the implicit subject of an impersonal passive construction. DPs which can function as the subject of the unergative predicate in the active construction through inherited animacy can also not be interpreted as the referent of the implicit subject of an impersonal passive construction. The absence of a potential interpretation corresponding to the active counterpart in which the subject is a DP referring to an entity with the ‘teleological capability’ of an agent or which inherits animacy through whole-part relation indicates that the feature [ $\pm$ animate] is crucial in the syntactic processing of Turkish.

The paper also argues that Turkish possesses unaccusatives which project  $vP$  but do not assign a theta role to their external argument. It is shown that lexical semantics as well as passive interact with the animacy feature of the internal argument to (i) change an achievement verb into a psychological predicate, and (ii) to yield constructions in which the experiencer argument which merges within VP moves to Spec,TP in the course of the derivation.

The organization of the paper is as follows. Section Two briefly introduces the personal and impersonal passive constructions in Turkish. In Section Three, evidence is presented from sense predicates, manner unergatives, directional and existential unaccusatives to show that animacy is a grammaticized construct in Turkish. The section also argues that the 3-way distinction between the sources of animacy effects is necessary to account for the interpretation of the implicit subject in an impersonal passive construction. Section Four discusses the psych-verb constructions in Turkish. Based on a structural difference between the Experiencer Subject and Experiencer Object verbs, psych verbs are shown to belong to two different categories. Section Five is the conclusion.

## **2. Passive and impersonal passive in Turkish**

As a morphosyntactic rule which interfaces lexical properties of predicates, argument structure, and morphosyntax of nominals and verbs (cf. Steedman, 2000), passive in Turkish is marked with the phonologically conditioned variant of the morpheme {-II} on

the verbal predicate of a corresponding transitive construction.<sup>2</sup> The theme argument of the active construction appears with nominative marking in the passive counterpart.

- (1)a. Bahçıvan çiçek-ler-i sula-dı.  
gardener flower-PL-ACC water-PAST  
‘The gardener watered the flowers.’
- b. Çiçek-ler ([bahçıvan tarafından]) sula-n-dı.  
flower-PL gardener by water-PASS-PAST  
‘The flowers were watered (by the gardener).’

In a passive construction, the agent typically appears in an oblique phrase. This is predicted in the analysis of passive proposed by Jaeggli (1975) according to which the passive morpheme absorbs the agent theta role, hence the theta role agent cannot be assigned to a nominal in the external argument position. Within the framework As (1b) illustrates, the agent in a personal passive construction in Turkish can optionally be expressed as the complement of the agentive postposition *tarafından*-phrase.<sup>3</sup>

Turkish also licenses impersonal passive constructions of unergative predicates (Özsoy, 1990, 1997). (2b) illustrates the impersonal passive construction of the unergative verb *dans et-* ‘dance’.<sup>4</sup>

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<sup>2</sup> The passive morpheme {-II} has three phonologically conditioned variants in Turkish. The distribution of the allomorphs of the passive morpheme and an illustrative example of each variant are as follows:  
[-n] after stems that end in a vowel *oku* ‘read’ – *oku-n* ‘be read’  
[-In] after stems with the lateral liquid *bil* ‘know’ – *bil-in* ‘be known’  
[-II] elsewhere *yaz* ‘write’- *yaz-ıl* ‘be written’

Within the verbal complex, passive morpheme is the innermost inflectional morpheme attached to the verbal stem.

<sup>3</sup> The nature of the Case marking on the complement of the *tarafından*-phrase is conditioned by the grammatical category of the nominal. Pronouns are overtly marked with the appropriate form of the Genitive marker {-(n)In}. Nouns are marked with the phonologically null abstract Genitive marking.

<sup>4</sup> The following impersonal passive of the unergative verb *koş-* ‘run’ illustrate her point.

- (i)a. Haftason-lar-ı göl çevre-si-nde koş-ul-ur.  
weekend-PL-POSS lake around-POSS-LOC run-PASS-AOR  
‘On weekends it is jogged around the lake.’ (Nakipoğlu 2003, ex.13a-b)
- b. Bazı insan-lar haftason-lar-ı göl çevre-si-nde koş-ar.  
some person-PL weekend-PL-POSS lake around-POSS-LOC run-PASS-AOR  
‘Some people run around the lake.’

Further, Nakipoğlu-Demiralp holds that in those cases in which the verb of the impersonal passive is marked with the past tense marker the implicit subject of the impersonal construction receives an indefinite interpretation.

- (ii)a. Dün iki saat koş-ul-du.  
Yesterday two hour run-PASS-PAST.3per  
‘Yesterday it was jogged for two hours.’ (Nakipoğlu 2003, ex.16a-b)
- b. Dün iki saat koş-tu-k.  
Yesterday two hour run-PAST-1per.pl  
‘Yesterday we jogged for two hours.’

- (2)a. Çocuk-lar bütün gece dans et-ti-ler.  
 child-PL whole night dance-PAST-PL  
 ‘We all danced the whole night.’  
 b. Bütün gece \*(çocuk-lar tarafından) dans-ed-il-di.  
 whole night child-PL by dance-PASS-PAST  
 ‘It was danced the whole night \*(by the children).’

As the ungrammaticality of the postpositional phrase *çocuk-lar tarafından* ‘by the children’ in (2b) illustrates, the presence of an overt agentive phrase is banned in an impersonal passive construction of an underlyingly unergative predicate in Turkish.

Turkish also licenses impersonal passive constructions of unaccusatives as has been shown by Özkaragöz (1981).

- (3)a. İnsan bu göl-de boğul-ur.  
 human this lake-LOC drown-AOR  
 ‘A person can drown in this lake.’ (Özkaragöz, 1981)  
 b. Bu göl-de boğul-un-ur.  
 this lake drown-PASS-AOR  
 ‘One can drown in this lake./It can be drowned in this lake.’

No agentive phrase is licensed in the impersonal passive construction of an unaccusative predicate. (4) is ungrammatical in Turkish.

- (4) \*Bu göl-de insan-lar tarafından boğul-un-ur.  
 this lake person-PL by drown-PASS-AOR  
 ‘It can be drowned in this lake by people.’

Ergative-intransitive verbs do not undergo impersonal passivization. The (b) sentences in the examples below are ungrammatical.

- (5)a. Buz-lar eri-di.  
 ice-PL melt-PAST  
 ‘The ice melted.’  
 b. \*Buz-lar eri-n-di.  
 ice-PL melt-PASS-PAST  
 ‘It was melted the ice.’  
 (6)a. Oturum beş saat sür-dü.  
 session five hour last-PAST  
 ‘The session lasted five hours.’  
 b. \*Oturum beş saat sür-ül- dü.  
 session five hour last-PASS-PAST  
 ‘The session lasted five hours.’

In cases of verbal polysemy to disambiguate between the different meanings of the verb and determine the theta roles assigned to the arguments, encyclopedic knowledge plays a crucial role. In those cases in which the DP associated with the underlying subject of the predicate *sür-* is [+animate], the predicate is the two place predicate corresponding to the transitive verb ‘drive’ in English. In such cases the argument is predictably interpreted to receive the theta role *agent*. This is exemplified in (7).<sup>5</sup>

<sup>5</sup> Another instance of verbal polysemy involves the two predicates *kır-* ‘break’ and *bağla-* ‘tie’. The predicates *kır-* ‘break’ and *bağla-* ‘tie’ receive an accomplishment verb interpretation when their theme object is [-animate] but are interpreted as psychological predicates when their internal argument is [+animate].

- (i)a. Çocuk vazo-yu kır-dı. [-animate] internal arguments  
 Boy vase-ACC break-PAST

- (7)a. Araba sür-ül-dü.  
 car drive-PASS-PAST  
 ‘The car was driven.’  
 b. Araba soför tarafından sür-ül-dü.  
 car driver by drive-PASS-PAST  
 ‘The car was driven by the driver.’

As expected, the agentive phrase *soför tarafından* ‘by the driver’ is licensed in (7b).

- ‘The boy broke the vase.’  
 b. Satıcı paket-i bağla-dı.  
 Salesperson package-ACC tie-PAST  
 ‘The salesperson tied the package.’  
 (ii)a. O ben-i kır-dı. [+animate] internal arguments  
 s/he I-ACC hurt-PAST  
 ‘S/he hurt me.’  
 b. Adam kadın-ı kendi-ne bağla-dı.  
 man woman-ACC self-DAT attach-PAST  
 ‘The man attached the woman to himself (emotionally).’  
 The [±animate] feature of the argument nominal has an effect on the theta role the verb assigns to the nominal. In (ia-b), the verbs *kır-* ‘break’ and *bağla-* ‘tie’, the internal arguments receive the theme theta role, in (iia-b) in which the verbs are interpreted as psychological predicates corresponding to ‘hurt’ and ‘attach’ respectively, the internal argument receives the Experiencer theta role,. Note that the interpretation in which the animate internal argument receives the theta role theme is also available in the bizarre case of the man literally tying the woman to himself; however, this reading is at best secondary.  
 The difference in the semantics of the (a) and (b) sentences in (i) and (ii) also has its syntactic reflex. *kır-* ‘break’ and *bağla-* ‘tie’ as achievement verbs have their passive counterpart but as psych verbs they do not. (iia-b) exemplify the passive counterpart of *kır-* ‘break’ and *bağla-* ‘tie’ as achievement verbs.  
 (iii) a. Vazo çocuk tarafından kır-ıl-dı.  
 Vase boy by break-PASS-PAST  
 ‘The vase was broken by the boy.’  
 b. Paket satıcı tarafından bağla-n-dı.  
 Package salesperson tie-PASS-PAST  
 ‘The package was tied by the salesperson.’  
 (iiia-b) illustrate that *kır-* ‘break’ and *bağla-* ‘tie’ as psychological predicates do not have passive counterparts.  
 (iv)a. Ben o-na kır-ıl-dı-m.  
 I s/he-DAT hurt-PASS-PAST  
 ‘I am hurt (because of his/her actions).’  
 b. \*Ben o-nun tarafından kır-ıl-dı-m.  
 I s/he-GEN by hurt-PASS-PAST  
 ‘I was hurt by him/her.’  
 .b. \*Kadın adam tarafından bağla-n-dı.  
 woman man by attach-PASS-PAST  
 ‘The woman was attached by the man (emotionally).’  
 (v)a. Çocuk kol-u-nu kır-dı.  
 Boy arm-3POSS-ACC break-PAST  
 ‘The boy broke his arm.’  
 b. Kol-u kır-ıl-dı.  
 Arm-3POSS break-PASS-PAST  
 ‘His/her arm was broken.’

### 3. Animacy effects and implicit arguments

The subject of an unergative verb is an agent and agents are typically animate entities. It is however a well-attested fact that DPs referring to inanimate entities can also function as subjects of unergative predicates. Levin and Rappoport-Hovav (1995) label such unergative verbs as ‘theme unergatives’. In a recent analysis investigating the relation between the animacy of the referents of DPs and the ability of the DPs to occur as arguments of unergative verbs, Folli and Harley (2008) have proposed that it is teleological capability, rather than animacy of the referent of the nominal which gives rise to animacy effects. Folli and Harley show that it is the inherent ability of inanimate entities denoted by DPs to realize the eventuality of the predicate, is the notion that licenses such DPs to function as subjects of unergative predicates. The evidence provided by the subjects of sense predicates in Turkish however indicates that a further distinction has to be made between the sources of animacy effects. The difference lies in what I will refer to as the distinction between inherent and inherited animacy.

#### 3.1. Inherent versus inherited animacy: sense predicates

Sense predicates such as *titre-* ‘shiver’, *üşü-* ‘be cold’, *terle-* ‘sweat’ are unergative verbs whose subjects are agentive, but not intentional. That only animate nominals can be the subjects of sense predicates is evinced by the contrast between the (a) and (b) sentences in (8-9) in which the two sets of sentences differ from each other with respect to the value of the animacy feature of their subject nominal.

(8)a. Herkes soğuk-ta üşü-yor-du ./ titr-iyor-du.  
everyone cold-LOC be.cold-PROG-PAST/ shiver-PROG-PAST  
‘Everyone was feeling cold/shivering in the cold.’

b. \*Masa soğuk-ta üşü-yor-du ./ titr-iyor-du  
table cold-LOC be.cold-PROG-PAST/ shiver-PROG-PAST  
‘\*The table was feeling cold/shivering in the cold.’

(9)a. Herkes sıcakta terl-iyor-du.  
everyone/car heat-LOC sweat-PROG-PAST  
‘√Everyone was sweating in the heat.’

b.\*Araba sıcakta terl-iyor-du.  
car heat-LOC sweat-PROG-PAST  
‘\*The car was sweating in the heat.’

A nominal expressing inalienable possession referring to a body part can function as the subject of a sense predicate.

(10)a. İnce, uzun parmaklı el-ler-i titr-iyor-du.  
thin long fingered hand-PL-3POSS shiver-PROG-PAST  
‘His thin and long fingered hands were shivering.’

b. Ayak-lar-ım üşü-dü.  
foot-PL-1POSS be.cold-PAST  
‘My feet are cold.’

c. Yüz-ün terl-iyor.  
face-2POSS sweat-PROG  
‘Your face is sweating.’

The grammaticality of (10a-b) in which the subject of the respective unergative sense predicates *titre-* ‘shiver’, *üşü-* ‘be cold’ and *terle-* ‘sweat’ is a body part, namely *el-*

*ler-i* ‘his/her hands’, *ayak-lar-ım* ‘my feet’ and *yüz-ün* ‘your face’, contrasts with the ungrammaticality of (9a-b) in which the subject nominal is inherently [-animate]. The contrast between (10a-b) and (9a-b) is evidence that a nominal referring to a body part is taken to have the feature [+animate]. The source of the [+animate] feature in (10a-b) is inherited by the nominal referring to the body part by means of the whole-part relation the organ shares with the body it is attached to. As the discussion below will illustrate, there is a syntactic reflex of the distinction between the two sources of agency as inherent teleological capability versus inherited animacy. Source adverbials can occur only in constructions which have agentive subjects through inheritance, not teleological capability.

Given that unergative predicates typically have agents as subjects, constructions such as (11) exemplify that Turkish also licenses inanimate nouns to function as subjects of unergative predicates. That a teleologically capable inanimate entity in the sense of Folli and Harley (2008) can function as the subject of an unergative predicate in Turkish is observed in (9) in which an inanimate entity, i.e. *bardak* ‘glass’, is functioning as the subject of the unergative predicate *terle-* ‘sweat’.

- (11) Bardak terle-miş.  
 glass sweat-P  
 ‘The glass has sweated.’

(11) is felicitous under the condition which induces a change on the surface of the glass simulating the effect that heat has on most humans as in the case when the difference between the temperature of the contents of the glass and of its surrounding air is sufficiently large inducing condensation leading to the formation of small drops on the surface of the glass. In other words, (11) is felicitous as long as conditions under which a change simulating the effect that heat has on most humans obtain.

As predicted, *bardak* ‘glass’ cannot be the subject of a predicate like *üşü-* ‘feel cold’ or *titre-* ‘shiver’ given that these predicates express events in which the effect of the predicate generally involves tremor of the body or its part as well as a possible change in the physical appearance, i.e. color, of the organ.

- (12)a. \*Bardak üşü-müş/titr-iyor.  
 glass cold-REP/shiver-PROG  
 ‘The glass is cold/is shivering.’

That there is a difference between a construction in which an inanimate DP such as *bardak* ‘glass’ functions as the subject of the unergative predicate *terle-* ‘sweat’ and one in which the subject is a DP referring to a body part such as *el-* ‘hand’ is evident in the syntactic difference exhibited by the two constructions. No source adjunct can occur in the construction with *bardak* ‘glass’.

- (13)a. \*Bardak sıcakta terle-miş.  
 glass heat-LOC sweat-P  
 ‘The glass has sweated in the heat.’  
 b. El-im sıcak-ta terle-miş.  
 Hand-1POSS heat-LOC sweat-P  
 ‘My hand has sweated in the heat.’

The claim here is that the difference between (13a) and (13b) is due to the fact that the [animacy] feature of the body part is the result of the whole-part relation it is in with the animate entity of which it is a part and the properties of the whole are transferred to the part. An inanimate entity which does not stand in a whole-part relation with

another entity with respect to the eventuality denoted by the predicate, on the other hand, can only

Significantly, an inherently [-animate] nominal which can function as the agentive subject of an unergative verb or a nominal which inherits agentivity through the whole-part relation it holds with an inherently [+animate] entity cannot be interpreted to be the implicit subject of an impersonal passive. That is to say, in (14b) the implicit subject of the predicate titre- ‘shiver’ cannot be interpreted as a body part, i.e. *eller* ‘hands’ of (14a).

- (14)a. İnce, uzun parmaklı el-ler-i soğuk-ta titr-iyor-du.  
thin long fingered hand-PL-3POSS cold-LOC shiver-PROG-PAST  
‘His thin and long fingered hands were shivering.’  
b. Soğuk-ta titre-n-iyor-du.  
cold-LOC shiver-PASS-PROG-PAST  
‘It was shivered in the cold.’

The only interpretation of the implicit subject available in (14b) is one in which it refers to an inherently [+animate] entity.

Note that the unergative predicate *ağrı-* ‘ache’ which can only occur with a DP referring to a body part does not have an impersonal passive variant but only occurs in active form.

- (15)a. Baş-ım ağr-ıyor.  
Head-1POSS ache-PROG  
‘My head aches./I have a head ache.’  
b. \*Ben ağrı-yor-um.  
I ache-PROG-1SG  
‘I ache.’  
c. \*Ağrı-n-iyor.  
ache-PASS-PAST

The absence of the impersonal passive construction with the predicate *ağrı-* ‘ache’ is predicted given that the verb does not select a DP referring to an inherently animate entity, hence the implicit subject will not be interpreted.

### 3.2. Manner unergatives

Another class of unergatives which license DPs referring to [-animate] entities are manner predicates. *Uç-* ‘fly’ is one such predicate.

- (16) Uçak uç-uyor.  
plane fly-prog  
‘The plane is flying.’

(16) is an instance of teleological capability as proposed by Folli and Harley (2008). Planes are vehicles specifically designed for flying.

As (17) illustrates, DPs referring to [-animate] entities that are not necessarily designed for flying can also function as the subject of the verb *uç-* ‘fly’.

- (17) El-i-nin bir hareket-iyle çakmağ-ı kay-mış, masa-dan  
hand-3POSS-GEN one move-INST lighter-3POSS slip-REP table-ABL  
aşağı-ya uç-muş-tu.  
down-DAT fly-REP-PAST

‘With one movement of his hand his lighter had slipped, fallen down from the table.’

Significantly, the implicit subject of the impersonal passive construction of the predicate *uç-* ‘fly’ can only be interpreted as an inherently [+animate] entity. Thus, the

implicit subject of (18) can only be interpreted as the passengers on the plane to Tokyo, not the vehicle itself.

(18) Tokyo-ya uç-ul-du.  
-DAT fly-PASS-PAST  
'Tokyo was flown to.'

The unacceptability of the impersonal passive counterpart of (17) is hence predicted, given that only inherently animate entities can be interpreted as the underlying subject of an unergative predicate.

(19) \*El-i-nin bir hareket-iyle çakmağ-ı kay-mış, masa-dan  
*hand-3POSS-GEN one move-INST lighter-3POSS slip-REP table-ABL*  
aşağı-ya uç-ul-muş-tu.  
*Down-DAT fly-PASS-REP-PAST*

### 3.3. Animacy and unaccusatives

Directional and existential predicates are two classes of unaccusative predicates which are typically associated with [+animate] DPs but also license [-animate] DPs.

#### 3.3.1. Directional unaccusatives

Directional unaccusatives typically select animate arguments. Two canonical directional predicates are *gel-* 'come' and *git-* 'go'.

(20) a. Herkes Ankara-ya gel-di.  
everyone -DAT come-PAST  
'Everyone came to Ankara.'  
b. Yolcu-lar Ankara-ya tren-le git-ti-ler.  
passenger-PL -DAT train-INST go-PAST-3PL  
'The passengers went to Ankara by train.'

Directional unaccusatives also license [-animate] DPs as their argument.

(21) a. Tren Ankara-ya gel-di.  
train -DAT come-PAST  
'The train came to Ankara.'  
b. Otobüs Muğla-ya git-ti.  
bus -DAT go-PAST  
'The bus went to Muğla.'

Teleological capability also seems to account for the acceptability of (20a-b) in which a train and a bus respectively function as the argument of a directional predicate. Given that both trains and busses are vehicles equipped with properties which make it possible for them to move, i.e. they have engines and wheels which enable them to move in a certain direction, the acceptability of directional motion predicates occurring with DP arguments referring to inherently [-animate] entities is accounted for.

The implicit subject of a directional predicate in an impersonal passive construction can however only be interpreted as [+animate]. Thus (22a-b) can only be interpreted as the implicit subject being an entity that is inherently capable of changing direction.

(22) a. Ankara-ya gid-il-di.  
-DAT go-PASS-PAST  
'It was gone to Ankara/People went to Ankara.'  
b. Gar-a gel-in-di.

Station-DAT come-PASS-PAST

‘It was come/people came to the station./?The train came to the station.’

In (22a-b) and similar constructions, the reading in which the phonetically null argument of the impersonal passive unaccusative verbs is [+animate] is not available. As was shown by Nakipoğlu-Demiralp (2003), the past marker on the impersonal passive verb renders a referential reading of the suppressed argument of the passivized unaccusative verb *gel-* ‘come’.

The notion teleological capability can however account for only a subset of instances in which the directional predicate *gel-* ‘come’ occurs with an inanimate argument. This is evident in the fact that a construction such as (23) in which the subject of the predicate is *sıra* ‘turn’ is also acceptable in Turkish.

(23) Ardından gene, ... , genç kız-lar-a gel-iyor-du sıra.  
After.that again young girl-PL-DAT come-PROG-PAST turn  
‘After that, the turn was coming to the young girls again.’

(24a-b) illustrate that the animacy of the theme argument of *gel-* ‘come’ is crucial in determining whether passive can apply to an unaccusative construction. Note that the theme arguments of (24a) and (24b) are respectively [+animate] and [-animate]. The implicit subject in (24a) is understood to be *herkes* ‘everyone’, i.e. an inherently [-animate] entity, while the implicit subject in (24b) is intended to be the inherently [-animate] *sıra* ‘turn’.

(24)a. Ankara-ya gel-in-di.

Ank-DAT come-PASS-PAST

‘It was come to Ankara.’

b.\*Ardından gene, .....genç kız-lar-a gel-in-iyor-du.

after.that again young girl-PL-DAT come-PASS-PROG-PAST

‘\*After that, it was come to young girls again.’

Another instance of encyclopedic knowledge interacting with syntax is the interpretation of the implicit subject of the directional predicate *geç-* ‘go on; pass’.

(25)a. Öyle **geç-er** yaşam .

so go-AOR life

‘So goes on life.’

b.\*Öyle **geç-il-ir**.

so go-PASS-AOR

The ungrammaticality of (25b) is under the intended reading in which the implicit subject is interpreted to correspond to *yaşam* ‘life’. The sentence is grammatical in the reading of the transitive verb ‘pass (a vehicle)’.

### 3.2.2. Existential unaccusatives

(26) and (27) illustrate constructions in which the subject of an existential predicate is a nominal referring to an inanimate entity.

(26) Birden Erkekler Parkı ön-ümüz-de **belir-di**.

suddenly Erkekler Park front-1PLPOSS-LOC appear-PAST

‘Suddenly Erkekler Park appeared before us.’

(27) Yürü-düğ-ümüz sokak gittikçe **daral-ıyor-du**.

Walk-PART-3POSS street more narrow-PROG-PAST

‘The street we walked on was narrowing more.’

(26’) and (27’) are the impersonal passive counterparts of (26) and (27).

(26’)\*Birden ön-ümüz-de **belir-il-di** .  
*suddenly front-1PLPOSS-LOC appear-PASS-PAST*

(27’)\*Gittikçe **daral-in-ıyor-du**.  
*more narrow-PASS-PROG-PAST*

(26’) is ungrammatical in the attempted reading as the impersonal passive counterpart of (26), i.e. the reading in which the implicit subject is the inanimate nominal *Erkekler\_Parkı*. The sentence is licit in the reading in which the implicit subject is interpreted to be an animate entity.

Another passive unaccusative predicate whose implicit subject can only be interpreted as [+animate] is *kaybol-* ‘be lost’; *kaybol-* ‘be lost’ can be passivized only if its single argument is animate, as (28a-b) illustrate.

(28)a. Herkes o akşam karanlık yol-lar-da **kaybol-muş-tu**.  
*Everyone that night dark road-PL-LOC get.lost-REP-PAST*  
‘Everyone had gotten lost on the dark roads that night.’

b. O akşam karanlık yol-lar-da **kaybol-un-muş-tu**.  
*that night dark road-PL-LOC get.lost-PASS-REP-PAST*  
‘It was gotten lost on the dark roads that night.’

In (29a), the single argument of *kaybol-* ‘be lost’ is *güneş* ‘sun’. (29b) in which the attempted sentence is the passive counterpart of (29a) is ungrammatical.

(29)a. Güneş yeniden bulut-lar-ın kalın örtü-sü ardında **kaybol-muş-tu** .  
*sun again cloud-PL-3GEN thick cover-3POSS behind lose-REP-PAST*  
‘The sun had again disappeared behind the thick cover of the clouds.’

b.\*Yeniden bulut-lar-ın kalın örtü-sü ardında **kaybol-un-muş-tu**  
*again cloud-PL-3GEN thick cover-3POSS behind lose-PASS-REP-PAST*

The unavailability of the attempted reading of (29b) with the implicit argument of *kaybol-un* ‘be lost’ being interpreted as *güneş* ‘sun’ is evidence that the single argument of the unaccusative predicate has to be inanimate.

#### 4. Psych verbs

One of the syntactic constructions in which animacy of arguments is crucially involved with the syntactic properties of verbs is the psychological predicate constructions. The two classes of psychological predicates in Turkish - Experiencer Subject (ES) and Experiencer Object (EO) (*fear*-class and *please*-class of Chomsky, 1995, which I will refer to as the *kork*-class and *üz*-class respectively) are exemplified in (30a-b).

(30)a. Çocuk köpek-ten kork-tu.  
Boy dog-ABL scare-PAST  
‘The boy was scared of the dog.’

b. Bu söz-ler-iniz biz-i çok üz-dü.  
this word-PL-2POSS we-ACC a.lot sadden-PAST  
‘Your words saddened us very much.’

*kork-* and *üz-*classes have different representations in Turkish; specifically, *kork-*class verbs are unergative, while the *üz-*class verbs are unaccusative. The two arguments of the *üz-*class verbs merge in VP, with the Experiencer argument checking Accusative case in vP. In this sense, *üz-*class verbs present a counter-example to Burzio’s (1981) generalization that a verb which does not assign a theta role to its external argument also

does not check Accusative case. In this sense, the EO verbs in Turkish behave in a manner similar to Dutch OE<sub>1</sub> verbs as argued by Bennis (2004). Turkish psych verbs exhibit properties that are typical of unergative predicates, as argued by Pesetsky (1995) and unaccusatives as initially proposed by Belletti and Rizzi (1988).

The evidence for the different nature of the two classes of psych verbs is presented by their different behavior with respect to passivization, causitivation and participle constructions.

#### 4.1. Experiencer object psych verbs

Some of the Experiencer object psych predicates in Turkish are *üz-* ‘sadden’, *sık-* ‘upset’, *kır-* ‘hurt’..

- (31)a. Bu söz-ler-iniz                biz-i    çok    üz-dü/kır-dı.  
 this word-PL-2POSS    we-ACC a.lot sadden-PAST/hurt-Past  
 “These words of yours saddened us very much.”  
 b. Bu olay    biz-i    çok    sık-tı.  
 this event    we-ACC a.lot upset-PAST  
 “This event upset us a lot.”

The structures in (31a-b) have counterparts in which the possessor of the entity that gives rise to the emotion appears as the subject (CAUSER) and the entity itself as an oblique object, i.e. EO verbs license constructions in which the Possessor of the Theme argument is the subject. In such cases the Theme argument can be expressed as the complement of a postpositional phrase.

- (32)a. Siz bu söz-ler-iniz-le                biz-i    çok    üz-dü-nüz.  
 you this word-PL-2POSS-INSTR    we-ACC a.lot sadden-CAUSE-PAST  
 “You saddened us very much with your words.”  
 b. Onlar bu olay-la    biz-i    çok    sık-tı.  
 they this event    we-ACC a.lot upset-CAUSE-PAST  
 “They upset us a lot by this event.”

(31) and (32) illustrate that the experiencer argument is the object of the psych-verb *üz-* ‘make sad’. (33a-b) are the passive counterparts of (32a-b). The thematic Experiencer is the subject of the construction; the verb is marked with the passive morpheme and the appropriate agreement marker.

- (33)a. Biz bu söz-ler-iniz-e                çok    üz-ül-dü-k.  
 we this word-PL-2POSS-DAT very sadden-PASS-PAST-1PL  
 “We were very saddened by your words.”  
 b. Biz bu olay-a    çok    sık-ıl-dı-k.  
 we this event-DAT a.lot woory-PASS-PAST-1PL  
 “We were worried very much by this event.”

The availability of the passive construction, we take as evidence that in the examples in (31) and (32) the Experiencer object is merged inside the VP of the verb *üz-* and checks for case in Spec,vP. The presence of the passive morpheme in (33) absorbs the Accusative case in the sense of Baker, Johnson and Roberts (1989). The EO therefore raises to Spec,TP to check for Case. In (33a-b), the OBLIQUE argument which remains in situ is marked DATIVE. As (34a-b) illustrate, the OBLIQUE argument in such constructions cannot occur in the *tarafından* ‘by’ phrase which is the canonical agentive phrase in a Turkish passive construction, but its possessor can, indicating that (32a-b) are canonical transitive structures .

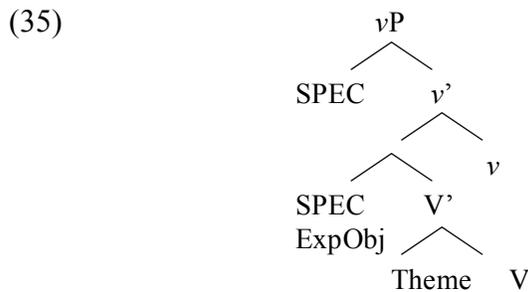
- (34)a. Biz ?siz-in tarafınızdan/\*bu söz-ler-iniz                tarafından    çok    üz-ül-dü-k.  
 we    you-GEN by    this word-PL-2POSS by                very sadden-PASS-PAST-1PL

“We were very saddened by you/your words very much.”

- b. \*Biz bu olay tarafından çok sık-ıl-dı-k.  
 we this event-by very woory-PASS-PAST-1PL  
 “We were upset by this event very much.”

We take these facts as evidence that the Experiencer object construction in (31) is derived from a structure in which the two arguments of the psych verb are merged as constituents of VP. The Experiencer object bears the Accusative case marker, indicating that Turkish possesses a  $\nu$ P projection which checks Accusative Case but does not assign a theta role to its external argument position.

The representation of the experiencer object construction in (31) is given in (35).



The theme object, i.e. the entity that gives rise to the emotion, merges as sister of V. The Experiencer object merges in Spec,VP from where it moves to Spec,  $\nu$ P to check its Accusative case. The movement of V-to- $\nu$ -to-T makes it possible for the theme argument to move to Spec, TP. Given that the both arguments of (31) are generated within VP and that there is a  $\nu$ P projection which checks Accusative case indicates that This indicates that there are two unaccusative constructions in Turkish:

- (i) Those which do not have a  $\nu$ P-projection
- (ii) Those that have a  $\nu$ P-projection, but no external argument

In constructions in which the psychological predicate is marked with the passive marker, the passive absorbs the Accusative case, therefore the EXPERIENCER object cannot check its case. It therefore moves to Spec,TP to check case.

As predicted, EO predicates do not have Causative<sup>6</sup> counterparts.

- (36)a. \*Bu söz-ler-iniz biz-i çok üz-dür-dü.  
 this word-PL-2POSS we-ACC a.lot sadden-CAUSE-PAST  
 “Your words saddened us very much.”  
 b.\*Bu olay biz-i çok sık-tır-dı.  
 this event we-ACC a.lot upset-CAUSE-PAST  
 “This event upset us a lot.”

<sup>6</sup> The CAUSE morpheme *-Dir* has four alternants; *-t* after stems whose last segment is a vowel, *-Ar/İr* after most monosyllabic roots where the distribution of the two alternants with high and low vowel is morphologically conditioned, *-It* after monosyllabic roots that end in a consonant cluster, *-Dir* elsewhere.

- (i)a. Sekreter mektub-u yaz-dı.  
 Secretary letter-ACC write-PAST  
 ‘The secretary wrote the letter.’  
 b. Müdür sekreter-e mektub-u yaz-dır-dı.  
 Manager secretary-DAT letter-ACC write-PAST  
 ‘The manager had the secretary write the letter.’

The ungrammaticality of (36a-b) in which the psych predicates are marked with the Cause morpheme *-Dir* is predicted given that there is no external argument of an EO verb which can function as the theme of *-Dir*.

#### 4.2. Experiencer subject verbs

ES verbs behave as typical unergative predicates with respect to passivization, causativization and participle constructions. Some of the ES verbs in Turkish are *kız-* ‘be angry’, *bık-* ‘be tired of’, *kork-* ‘be afraid’, *sevin-* ‘be pleased’, *şaş-/şaşır* ‘be surprised’.

- (37)a. Çocuk köpek-ten kork-tu.  
 Boy dog-ABL scare-PAST  
 ‘The boy was scared of the dog.’  
 b. Biz bu iş-e şaş-tı-k.  
 We this event-DAT surprise-PAST-1PL  
 ‘We are surprised at this event.’  
 c. Ben o-na çok kız-dı-m.  
 I s/he-DAT very angry-PAST-1SG  
 ‘I am very angry at him/her.’

The theme argument in ES verb constructions is inherently case-marked with Dative or Ablative.

ES constructions are typical transitive constructions, with the ES generated in Spec,vP. Embedded under CAUSE, the ES bears the Accusative case marker. In constructions in which the embedded vP checks Accusative, the subject of the predicate embedded under Cause checks Dative case, otherwise it checks Accusative as illustrated in (38-40).

- (38)a. Çocuk köpek-ten kork-tu.  
 Boy dog-ABL scare-PAST  
 ‘The boy was scared of the dog.’  
 b. Köpek çocuğ-u kork-ut-tu.  
 Dog boy-ACC scare-CAUSE-PAST  
 ‘The dog scared the boy.’  
 (39)a. Biz bu iş-e şaş-tı-k.  
 we this deal-DAT surprise-PAST-1PL  
 ‘We are surprised at this deal.’  
 b. Bu iş biz-i şaşır-t-tı.  
 this deal we-ACC surprise-CAUSE-PAST-1PL  
 ‘This deal surprised us.’  
 (40)a. Ben o-na çok kız-dı-m.  
 I s/he-DAT very angry-PAST-1SG  
 ‘I am very angry at him/her.’  
 b. O ben-i kız-dır-dı.  
 s/he I-ACC anger-CAUSE-PAST  
 ‘S/he angered me.’

Experiencer subject psych predicates can also appear in impersonal passive constructions.

- (41)a. Çocuk köpek-ten kork-tu.  
 Boy dog-ABL scare-PAST  
 ‘The boy was scared of the dog.’  
 b. Köpek-ten kork—ul-ur.

- dog-ABL scare-PASS-PAST  
‘It is scared of dogs./Dogs are feared.’
- (42)a. Biz bu iş-e şaş-tı-k.  
we this event-DAT surprise-PAST-1PL  
‘We are surprised at this event.’
- b. Bu iş-e şaş-ıl-dı.  
this event-DAT surprise-PASS-PAST  
‘This event is surprised at./One gets surprised at this event.’
- (43)a. Ben o-na çok kız-dı-m.  
I s/he-DAT very angry-PAST-1SG  
‘I am very angry at him/her.’
- b. O-na çok kız-ıl-dı.  
s/he-DAT very angry-PASS-PAST  
‘S/he was angered at./One got very angry at her/him.’

Referentiality conditions on the interpretation of the implicit subject of impersonal passives as stated by Nakipoğlu-Demiralp (2003) hold for implicit subjects in (41-43) as well. In line with Nakipoğlu-Demiralp’s analysis, the implicit subject of the psych verb marked with the aorist is interpreted non-referentially while that of a psych verb marked with the past marker is interpreted referentially.

Another piece of evidence to the effect that the Experiencer argument is the subject of *kork-* ‘scare’ is the participle construction. The Experiencer is relativized with the *-(y)An* suffix, which is the subject participle suffix in Turkish.

- (44)a. köpek-ten kork-an çocuk  
dog-ABL scare-PART boy  
‘the boy scared of dogs’
- b. bu iş-e şaş-an insan-lar  
this event-DAT surprise-PART person-PL  
‘people surprised at this event’

These properties we take as evidence that ES psych-verbs are underlyingly transitive constructions. EO verbs are, however, unaccusative verbs which project *vP* but do not have external arguments.

## 5. Conclusion

This paper argued that Turkish distinguishes between three types of animacy, inherent, teleological and inherited animacy. The paper showed that the difference between the three types of animacy is grammaticalized. The paper further proposed an analysis of psychological predicates in Turkish. It argued that there is a structural difference between two classes of psychological predicates in Turkish.

## Notes

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