ASPECTUAL AND LEXICAL SEMANTIC PROPERTIES OF TURKISH AND ENGLISH DENOMINAL VERBS

Yeşim Aksan
Mersin University

yaksan@mersin.edu.tr

Abstract

This study attempts to describe lexical and aspectual properties of Turkish and English denominal verbs. Using Clark & Clark's (1979) semantic classes for denominal verbs, the study limits its data with *location*, *locatum* and *goal* denominal verbs whose nominal bases denote a thing. In considering the analogy between mass/count distinction in the spatial dimension displayed by nouns and telic/atelic distinction in the temporal dimension exhibited by events, present study discusses the effect of inherent semantic features of base nouns in determining the aspectual properties of *location*, *locatum* and *goal* verbs in Turkish and in English. This study also focuses on the variable aspectual nature of locatum verbs with mass noun bases and explains this variability by using the means of scalar semantics.

1 Introduction

Denominal verbs are simply nouns that have come to be used as verbs. Denominal verb formation via zero morphology ($box_N \rightarrow box_V$) is extremely productive in English compared with any other language like Turkish. Turkish uses the suffix {-lA} (*kutu* $_N$ 'box' $\rightarrow$ *kutu*+lA$_V$ 'to box') most of the time, and frequently zero morphology (*boya* $_N$ 'paint'$\rightarrow$ *boya*-Ø $_V$ 'to paint') to produce noun based verbs. The preponderance of denominal verbs in English has inspired not only morphologists but also syntacticians and semanticians to make inquiries into their peculiar properties. That's why we can observe various different approaches to the same today.

Studies in morphology question basically the suffixation process in denominal verb formation: how far is zero derivation different from any other type of derivations? (Marchand, 1969, Lieber, 1992). Syntacticans like Hale and Keyser (1993, 1998) discuss the noun-verb conversion, and they have develop a syntactic theory of denominal verb formation on the basis of Lexical Relational Structure. Semanticians like Pinker (1989), Jackendoff (1990, 1991), Kageyama (1997), and Labelle (2000) propose different templates or semantic primitives for conceptual structures of denominal verbs. Pragmatic elucidation on denominal verb formation is posed by Clark & Clark (1979), who furnished the most comprehensive data of both lexicalized and innovative denominal verbs in English. They claim that denominal verbs as lexical items — contrary to denotational or indexical ones— can change their referents and senses in countless number of ways. Since their senses depend on the context in which they occur, they argue that denominal verbs should be called *contextuals*.

Clark & Clark (1979) classify English denominal verbs into 8 semantic categories as follows: *location* (shelve the book), *locatum* (spice the food), *goal* (group the actors), *source* (word

In: Cécile Meier, Matthias Weisgerber (ed.) 2004: *Proceedings of the Conference "sub8 – Sinn und Bedeutung".*
Arbeitspapier Nr. 177, FB Sprachwissenschaft, Universität Konstanz, Germany

the sentence), *instrument* (mop the floor), *duration* (summer in the France), *agent* (nurse the patient), *miscellaneous* (bandage his ankle). This study will carry out its analyses on the basis of these major categories, specifically on *location, locatum* and *goal* . It is noteworthy that Turkish has all these semantic classes in its denominal verb classification with different degrees of productivity except for the semantic category of *agent,*.

The aims of the present study can be summarized as follows:

(1) to explicate lexical conceptual structure of location, locatum and goal denominal verbs in Turkish and in English; (2) to demonstrate that aspectual nature of location, locatum and goal verbs can be identified via inherent semantic features of the base noun. Particularly, we expect to find a correlation between the (non)boundedness of the base nominal and the (a)telicity of the derived verb; (3) to illustrate that Turkish and English locatum denominal verbs with nonbounded nominal base provide evidence which reinforces the argument of scalar semantics that incremental theme by itself is not enough to determine the telicity of the predicate.

The study first determines the lexical properties of so-called denominal verbs. Then it presents the aspectual (or Aktionsart) analysis of location, locatum, goal verbs, and questions the effect of inherent semantic features of base nouns (i.e., countable nouns) in determining telicity of location, locatum and goal denominal verbs. The study will also discuss the exceptional cases in locatum verbs derived from countable nouns. It finally focuses on the variable aspectual properties of locatum verbs with nonbounded nominal bases (i.e., mass nouns), and points out briefly the explanatory power of scalar semantics in ascribing (a)telicity interpretations to such verbs.

2 Lexical Conceptual Structure of *Location, Locatum, Goal* Verbs

The conceptual meaning of verbs are represented in lexical conceptual structure (LCS) which structurally organizes finite set of primitive semantic predicates and their arguments. This section will of show that location, goal and locatum verbs are not just different realizations of the identical thematic structures as has been hypothesized in previous studies (Jackendoff, 1990). We claim that these verbs have distinct semantic predicates. For location and goal verbs there exists locative predicate; for locatum verbs there is possessional predicate 'WITH' (Kageyama, 1997, p. 48).

Location verbs describe an act of 'putting something in a location', where the location is described by the base noun that is interpreted as thematic goal or place. Location verbs take as direct object the entity-theme which is located or moved with respect to the base noun. To sum up, the noun describes the final location of an entity in locative verbs. All the following representations capture the notion of movement and spatial location inherent in locative verbs.

(1) Ali bilgisayar-ı kutu-la-dı.
Ali computer-ACC box-LA-PAST-Ø
'Ali boxed the computer.'

Clark & Clark (1979): Ali did something to cause it to come about that [the computer was in the box]

Jackendoff (1990): CAUSE ([Thing ∀], [Event GO ([([Thing ∃], [path TO ([place IN ([Thing BOX])])])])])

Kageyama (1997):[ ]$_x$ CAUSE [BECOME [[ ]$_y$ BE AT- [N]$_z$]]

Ali CAUSE [BECOME [computer BE AT -IN BOX]]

In goal verbs " the shape, entity, form, or role denoted by the parent noun come to exist by virtue of the action denoted by the verb" (Clark & Clark, 1979, p.774). The base nouns are in the goal case.

(2) Deniz öğrenci-ler- i grup-la-dı.
Deniz student-PL-ACC group-LA-PAST-Ø
'Deniz grouped the students.'

Clark &Clark (1979)**:** Deniz did something to cause to come about that [the students were grouped]

Kageyama (1997)**:** [$_X$ CAUSE [BECOME [$_Y$ BE AT-IN-[$_{property}$ N]

[Deniz CAUSE [BECOME [students BE AT-IN-[$_{property}$ GROUP]]]]

Locatum verbs describe an act of 'putting a theme somewhere'. The theme argument is identified by the base noun. Such verbs take as direct object the entity interpreted as the final location of the base noun. According to these explanations, for instance, in the predicate 'polish the table', the locatum noun (i.e., theme argument) 'polish' goes onto the goal, 'the table'.

(3) Deniz masa-yı cila-la-dı.
Deniz table-ACC polish-LA-PAST-Ø
'Deniz polished the table.'

Clark & Clark (1979)**:** Deniz did something to cause it to come about that [the table had polish on it]

Jackendoff (1990)**:** CAUSE ([Thing ∀], [$_{Event}$ INCH [BE ([$_{Thing}$ BUTTER], [$_{Place}$ ([ON ([Thing])])])])])

Kageyama (1997)**:** [ ]$_X$ CAUSE [BECOME [[ ]$_Y$ BE WITH [NOUN]$_Z$]]

[Deniz] CAUSE [BECOME [[table]] BE WITH [POLISH]]]

At this point, Kageyama's objection to the LCS representation of locatum verbs should be noted. Kageyama (1997, pp. 54-55) argues against the movement of locatum nouns and he

does not find the LCS proposed in this line adequate.[1] Inherent lexical meaning of these verbs reveals that when we *spice the food,* or *saddle the horse* it is not just that 'spice is on the food' or 'saddle is on the horse' rather it indicates that 'spice is mixed with the food and adds spicy property to it'or 'the saddle is fixed on the relevant part of the horse's body so that the horse becomes ready to ride'. Thus, what is crucial in locatum verbs is "the coming together of theme and the place in such a way that they essentially form one unit" (Buck, 1993, p.143). This is named as "affectedness" by Buck. Yet, if LCS of locatum verbs is hypothesized as in Jackendoff's representation, it is not clear where the affectedness comes from. Hence, Kageyama (1997) proposes a new semantic predicate 'WITH' which signifies *possession* in a broad sense. For instance, in the predicate *spice the food* the semantic predicate WITH SPICE is interpreted as the 'state of being covered with spice' or in the predicate *saddle the horse* WITH SADDLE means 'ready to ride with the saddle on'. Our study sides with Kageyama's LCS representation of locatum verbs.

Briefly, LCS of denominal verbs are constructed on the prototypical schemes motivated for basic verb forms of English and Turkish. In this sense, these verbs belong to accomplishment verbs class[2] exhibiting either change of state or change of position.

3 Denominal Verbs and their Aspectual Properties

Second argument of this paper is on the determination of the aspectual, or Akitonsart properties of Turkish and English denominal verbs. First, we shall brifely comment on aspectual composition and related aspectual principle.

The relation between the verb and its arguments determine the aspectual classes of the predicates which are identified via aspectual feature of *telicity*. Telicity shows *terminativity* or *quantization* of the internal contour of an event described. As maintained by Krifka (1989), telicity includes a mapping between the structure of an argument of a verb and the structure of the event indicated by the verb. The semantic nature of the object argument has a direct effect on telicity. Telic interpretation originates when the object or incremental theme argument is quantized as in (4a). Since 'a plate of rice' denotes a quantized amount of substance, an endpoint for the described event in (4a) can be detected as the point at which all the substance in question is consumed. On the other hand, verbs with mass or uncountable objects (4b) do not allow a telic interpretation.

(4) a. Deniz *bir tabak pilavı* bir saatte yedi.

'Deniz ate a plate of rice in an hour.'

b. Deniz bir saat boyunca *pilav* yedi.

---

1 The following points are the counter evidence propsed by Kageyama (1997) against the movement of locatum nouns in denominal locatum verbs. If we treat locatum verbs as the movement of the locatum entity, how can you explain the locatum nouns like *button hole* or *dog ear,* whose substance does not exist before the action carried out? Since *buttonholes* can not exist independently of clothes, it is meaningless to say *move buttonholes on the shirt*. Jackendoff's interpretation of locatum verbs as " cause N to come to be all over" does not apply to *diaper the baby, saddle the horse, tag the box, string the guitar*, through which the whole entity in question is not covered up.

2 LCS of accomplishment verb class,i.e., [[x ACT] CAUSE [y BECOME [y BE at-Z]]] properly fits the conceptual structure which underlies in location, locatum and goal denominal verbs.

'Deniz ate rice for half an hour.'

This fact about the aspectual interpretation of predicates displays the obvious parallel between the nominal meaning and verbal meaning. The mass/count distinction in the spatial dimension shown by things is similar to the telic/atelic distinction in the temporal dimension exhibited by events (Krifka, 1989, Brinton, 1991, Jackendoff, 1991, Dowty, 1991, Verkuyl, 1993, Tenny, 1994 , Jackendoff, 1991,1996 Ramchand, 1997).

In this line, Jackendoff (1991) proposes the semantic function of boundedness [± BOUNDED] to distinguish between count and mass nouns. Count nouns are described as [+BOUNDED] and mass nouns as [-BOUNDED]. The basic idea is that count nouns are units: if we divide an apple by slicing we do not get further instances of the basic unit. Mass nouns are not units and they can be divided into further instances of themselves: if you divide a five litre of water into one liter bottles, each of one liter bottle can still be referred as 'water'. Apart from the boundedness feature, Jackendoff also presents the semantic feature of [± INTERNAL STRUCTURE] to distinguish between plural count nouns and mass nouns. Plural count nouns can be divided into their composite units. It means that they are composed of individual units. Thus, mass nouns are [-i], plural count nouns are [+i]. In short, typology of semantic classes of nouns according to Jackendoff is as in (5).

(5)

count nouns (individuals):	[+b, -i] *araba 'a car'*, *muz 'a banana'*
collective nouns (groups):	[+b, +i] *hükümet 'government'*
mass nouns (substances):	[-b, -i] *su'water' , oksijen 'oxygen'*
plural nouns (aggregates):	[-b, +i] *muzlar 'bananas'* , *arabalar 'cars'*

3.1 *Location, Locatum, Goal* Verbs and Telicity

Drawing on the analogy between the nominal and verbal meaning, we argue that aspectual (Aktionsart) properties of denominal verbs can be identified via inherent semantic features of the base noun. Following Harley (1999, 2003), we assume that location (*kitabı kutula- 'box the books', belgeyi dosyala-'file the document'*), locatum (*atı eyerle- 'saddle the horse',yatağı çarşafla- 'sheet the bed'*) and goal *(öğrencileri grupla- 'group the students' kitapları sınıfla- 'cluster the books')* denominal verbs derived from count nouns (like box, saddle, group) will be telic. Thus, they are classified as *accomplishment verbs*, which is compatible with their LCS analysis. On the other hand, the ones derived from mass nouns (like butter, polish, cream) will be atelic, hence they belong to *activity verb* class.

The present study verifies the above mentioned assumptions on data built upon Clark and Clark's subcategories of location, locatum and goal verbs. 200 canonical examples of location, locatum and goal verbs whose nominal base denote a thing constitute our database. All sorts of metaphorical extensions of determined denominal verbs are excluded from the database. To test the aspectual well-formedness of the predicates, standard telicity tests, namely temporal entailments [3] and distribution of temporal adverbs (x-boyunca '*for x-time'* / x-de *'in x-time'*)

[3] The entailment test used in identifying aspectual properties of predicates is that:

(i) If Ø is an accomplishment verb, then *x is (now) Øing* entails that *x has not (yet)Øed.*

(ii) If Ø is an activity verb, then *x is (now) Øing* entails that *x has Øed.*

are used. One last point about the tendecies of languages in denominal verb formation is that Turkish does not lexicalize the same nouns as English does in denominal verb formation and English does not have some of the Turkish denominals either. These different lexicalizations are given under appropriate subclasses of relevant semantic categories as Tr. and Eng. Question mark displays non-occurring denominal verbs. The # notation by the temporal adverb testers indicates the unavailability of the produced readings.

• Location verbs

Storage places (on 'üstünde'): Tr: *sepeti sırtla- '?shoulder the basket', meyvaları tezgahla- '?stand the fruit'...* **Eng:** *shelve the books '?kitapları rafla-', land the boat '?tekneyi kıyıla-'...*

(6) a. Ali sepeti 2 dakikada / # 2 dakika boyunca sırtladı.
'Ali shouldered the basket in 2 minutes / # for two minutes.'
b. John shelved the book in 2 minutes / # for two minutes.

Storage places (in 'içinde'): *mısırı depola- 'silo the corn', yazıyı dosyala- 'file the document', telefonu ceple- 'pocket the cell-phone'...*

(7) a. Deniz yazıyı 2 dakikada / # 2 dakika boyunca dosyaladı.
'Deniz filed the report in 2 minutes / # for 2 minutes.'
b. Çiftçi mısırı bir saatte / # bir saat boyunca depoladı.
'Farmer siloed the corn in an hour / # for an hour .'

Containers (in 'içinde'): *şarabı fıçıla- 'barrel the wine', bilgisayarı kutula- 'box the computer' şarabı şişele- 'bottle the wine'...*

(8) a. Ali bilgisayarı 2 dakikada / # 2 dakika boyunca kutuladı.
'Ali boxed the computer in 2 minutes / # for 2 minutes.'
b.Ali şarabı 2 dakikada / # 2 dakika boyunca şişeledi.
'Ali bottled the wine in 2 minutes / # for 2 minutes.'

• Locatum verbs

Coverings (on 'üstünde')

Temporary: *yatağı çarşafla- 'sheet the bed', bebeği kundakla-,'swaddle the baby', zemini keçele- '? felt the floor'...*

(9) Deniz yatağı 2 dakikada / # 2 dakika boyunca çarşafladı.
'Deniz sheeted the bed in 2 minutes / # for 2 minutes.'

Individual objects: dress, animal paraphernalia: *bebeği bezle-'diaper the baby' yüzünü peçele- 'veil your face', atı nalla- 'shoe the horse', atı eyerle - 'saddle the horse'...*

(10) Ali atı 10 dakikada / # 10 dakika boyunca nalladı.
'Ali shoed the horse in 10 minutes / # for 10 minutes.'

Location and locatum verbs derived from countable nouns, which are independent units by themselves yield telic interpretations [4] with respect to standard telicity tests, as seen in the example sentences. They are all compatible with a time span adverbial (in-x time) which occurs only with telic predicates.

• Goal verbs

Groups: *öğrencileri grupla- 'group the students', sınıfı sırala-'line up the class ', kitapları sınıfla 'cluster the books'...*

(11) Deniz öğrencileri grupluyor. DOES NOT ENTAIL Deniz öğrencileri grupladı.
'Deniz is grouping the students DOES NOT ENTAIL Deniz has grouped the student.'

Masses: *kağıtları destele- 'bundle the papers', giyisileri kümele-'pile the clothes', çiçekleri demetle- 'bouquet the flowers'...*

(12) Ali kağıtları desteliyor.≠> Ali kağıtları desteledi.
'Ali is bundling the papers. ≠> Ali has bundled the papers.'

Shapes: *ipi düğümle- 'knot the string'* **Eng:** *loop the rope '?ipi ilmekle-', coil the rope '??ipi kangalla-', braid her hair '?saçını örgüle-'...*

(13) Ali ipi düğümlüyor. ≠> Ali ipi düğümledi.
'Ali is knotting the string. ≠> Ali has knotted the string.'

Goal verbs have either collective (*group*) or countable (*bundle*, *cluster*, *pile*, *mass*) base nominals. Under Jackendoff's account, countable nouns are units, so they are bounded; collective nouns contain individual units like bare plurals, so they have [+i]. However, if we divide a group into smaller segments, we can not name each of the results as a 'group'. Thus, such nouns are also [+bounded]. As is expected, goal denonimal verbs derived from collective nouns and countable nouns are bounded in time. With respect to entailment tests, they give

[4] One could argue that the telicity of these events described by denomial location and locatum verbs (in 6-10) derives from the boundedness of their object arguments. When compared with the indeterminate nature of the predicate *eat*, the events denoted by these verbs have inherent endpoints. To put it in other words, the telicity inherent in the events described by the location and locatum verbs themselves is "intuitively obvious" (Harley, 1999: p.77, see also Tenny, 1994, p. 212). This explanation becomes more meaningful when we analyse the telicity status of denomial locatum verbs whose nominal bases are mass nouns (like polish, butter) in section 3.4. The activites illustrated by these verbs have no inherent endpoints, thus both telic and atelic readings are equally possible.

rise to telic interpretations. As is seen in (11-13), telic predicates are not entailed by their progressive forms. Due to this principle, for instance in (11) 'Deniz is grouping the students' entails that 'Deniz has not yet grouped the students'.

3. 2 Aspect Shift: Repeated Event

A change in the semantic properties of object noun in telic location and locatum verbs affects the aspectual interpretation of the verb. When a bare plural appears in the direct object position of telic verbs like *saddle* or *box*, the event receives the interpretation of repeated instances of saddling or boxing, i.e, each repeated event is completed.

(14) a. Ali # bir saatte / bir saat boyunca at eyerledi.
'Ali saddled horses # in an hour / for an hour.'
b. Ali # bir saatte / bir saat boyunca bilgisayar kutuladı.
'Ali boxed computers # in an hour / for an hour.'

Bare plurals bear a high potential for creating ambiguity. Many of them can be understood either as denoting a collection of individuals or quantifiying over the members of that collection, and thus they give rise to *collective / distributive* ambiguity. In our case, speakers resolve such ambiguity by relying on their world knowledge or generic knowledge. In (14 a, b), by virtue of generic knowledge *saddle the horses* would normally mean there was one saddle for each horse (distributive reading), not that there was one or more saddles for the horses taken as a set (collective reading). On the other hand, *box the computers* can be taken either way: it could be collective (15 a) when one or more boxes for the computers is understood as a set or it could be distributive (15b) when one box is assigned for each computer.

(15) a. Ali bilgisayarların tümünü bir kutuya koydu.
'Ali put all the computers in a box.'
b. Ali bilgisayarları ayrı ayrı kutulara koydu.
'Ali put each computer in a different box.'

3. 3 Exceptional Data in *Locatum* Verbs

Verbs categorized under the semantic classes of symbols *çeki imzala- 'sign the check', çeki tarihle- 'date the check' pasaportu damgala- 'stamp the passport'* and labels *kavanozu etiketle- 'label the jar'* , *mektubu mühürle- 'seal the letter'* have exceptional cases in terms of telic interpretation. Although these locatum verbs have bounded nominal bases, like *sign*, *label*, *stamp* which give rise to telic predicates, our world knowledge tells us that the event of labeling, stamping, signing, sealing can be carried out more than once on a particular entity. Given the appropriate context, events described by such denominal verbs can have an atelic interpretation as well as the more usual telic interpretation.[5]

[5] Regarding the contextual explanation developed for subcategories of *symbol* and *label* locatum verbs, one can claim that under appropriate context, locatum verbs from semantic subclasses of *temporary dress* (like diaper

(16) a. Ali 5 dakika boyunca / 5 dakikada belgeyi imzaladı.

'Ali signed the document for 5 minutes / in 5 minutes.'

Possible interpretations:

Ali signed different places of the same document for 5 minutes.

Ali signed one particular place of the document in 5 minutes.

b. Ali 5 dakika boyunca / 5 dakikada kavanozu etiketledi.

'Ali labelled the jar for 5 minutes / in 5 minutes.'

Possible interpretations:

Ali labelled different sides of the same jar for 5 minutes.

Ali labelled one particular side of the jar in 5 minutes.

Locatum verbs categorized under the semantic class of decoration constitute another group of exception. Again, the locatum verbs in this category derived from count nouns like *resim 'picture'*, *desen 'pattern', süs 'ornament'* are supposed to be telic. Yet, it is very likely to interpret the event described by these verbs as atelic, simply because nominal bases of locatum verbs of decoration class are plural in their inherent lexical senses.[6] For instance, resimle- 'picture' means "draw, paint or print on a surface a lot of pictures". This inherent plural sense of these derived verbs enforces us to make undelimited, or atelic readings. When we utter 'Deniz pictured the book', the process of picturing the book involves drawing more than one picture (or a series of pictures) in a book.

(17) Deniz kitabı bir saatte/ bir saat boyunca resimledi.

'Deniz pictured the book in an hour/for an hour.'

---

the baby) and *animal paraphernalia* (like saddle the horse) may allow atelic interpretations. However, such a claim does not hold for the above mentioned subcategories. In the same vein, denominal location verbs with countable nomial bases do not have such a tendency since they are inherently telic . The only way to change their telicity is to manipulate the boundedness feature of their arguments. On the other hand, our world knowledge naturally triggers the relevant context which makes atelic reading possible with locatum verbs from the semantic subclasses of *symbol* and *label* .

6 Followings are inherent lexical meaning of locatum verbs categorized under the semantic class of decoration :

desenle- 'pattern': a pattern is an arrangement of lines or shapes, especially a design in which the same shape is repeated at regular intervals over a surface.

süsle- 'festoon ' (n-count, usually plural): If sth. is festooned with -eg. lights, balloons or flowers-, a large number of things are hung from it or wrapped around it, especially in order to decorate it.

işle- 'garland ' (n -count, usually plural): circular decoration made from flowers and leaves.

pulla- 'sequin ' (n-count, usually plural): sequins are small shiny discs that are sewn on clothes to decorate them.

Again the well known collective / distributive interpretation occurs with the plural sense of the predicate resimle- 'to picture'. Telic reading of sentence (17) considers pictures in a book as a set, whereas atelic reading views each picture in the book separately .

3. 4 Aspectual Vagueness in *Locatum* Verbs

Final part of this study focuses on the aspectual vagueness of locatum verbs in Turkish and in English derived from mass nouns. Most of the locatum verbs have mass nouns as nominal roots which describe the movement of a spatially unbounded substance. According to our assumption, these locatum denominals should be atelic. However aspectual tests illustrate that locatum verbs derived from mass nouns allow both telic and atelic readings.

i. Coverings (on 'üstünde')

Permanent: *rafı kağıtla- 'paper the shelf', mobilyayı vernikle-'varnish the furniture', duvarı kireçle- 'lime the wall'* **Tr:** *tarlayı ilaçla-'?medicine the field', dolabı naftalinle- '?naphthalene the wardrobe'...*

(18) Deniz masayı 10 dakikada/ 10 dakika boyunca cilaladı.
'Deniz polished the table in 10 minutes / for 10 minutes.'

Permanent solid: Tr: *zemini ziftle- '?pitch the floor', yolu katranla- '?tar the road'...* **Eng:** *roof the house '?evi çatıla-', tile the floor '?zemini karola-', seed the lawn '?bahçeyi tohumla-'...*

(19) İşçiler yolu 2 günde / 2 gün boyunca asfaltladı.
'Workmen asphalted the road in 2 days / for 2days.'

Viscous: *ekmeği yağla- 'butter the bread', yüzünü kremle- 'cream your face', yarayı merhemle- 'balm the wound ',* **Tr:** *vazoyu tutkalla-'?glue the vase'...*

(20) Deniz yüzünü 10 dakikada / 10 dakika boyunca kremledi.
'Deniz creamed her face in 10 minutes / for 10 minutes.'

Powdery: *yüzünü pudrala- 'powder your face,' balığı unla-'flour the fish'...*

(21) Deniz balığı 5 dakikada / 5 dakika boyunca unladı.
'Deniz floured the fish in 5 minutes / for 5 minutes.'

ii. Coverings (in 'içinde')

Condiments *yemeği biberle-'pepper the food', salatayı limonla- 'lemon the salad'...*

(22) Deniz salatayı 2 dakikada / 2 dakika boyunca limonladı.

'Deniz lemoned the salad in 2 minutes / for 2 minutes.'

As we maintained before, what is crucial in locatum verbs is the semantic relation of WITH possession which signifies addition of a relevant property to the object. For instance, the locatum verb *polish* in the predicate *polish the table* implies 'polish is mixed with the surface of the table and adds polished property to it'. Thus, these verbs are change of state verbs which display variable telicity along the line of other change of state verbs as in degree achievements (e.g, *cool, lengthen, widen*).

Finally, our study paves the way to a discussion of telicity interpretation in the verb classes which display variable telicity. What is crucial in the sample sentences (18-22) is that they involve incremental theme arguments, but these arguments do not affect telicity of the predicates, which is quite contrary to the claims of Krifka (1989) and Dowty (1991).

We explicate this fact by using the means of *scalar semantics* which reanalyzes and extends the notion of incremental theme in terms of scalar representation. Scalar semantics elucidates the grading relations in lexical categories, basically adjectives and verbs, whose canonical examples involve grading. For instance, consider the verb *build*, which describes a kind of "process of creation", and therefore supports an ordering of objects according to how far along in a scale of completion they are (Kennedy, 2000).

Locatum verbs with mass noun bases displaying a variable telicity describe an event in which direct object arguments undergo a gradual change. This is characterized in a scalar representation as a change in the degree to which the direct object arguments possess some gradable property. For instance, with the predicate *polish the table* two scales are possible:

1. Intensity scale: brightness of the table. The desired result may be the brightest table, with the scale being one of brightness.

2. Quantity scale: extent / surface area of the table. The process of polishing is conceived to be complete when the act of polishing has covered the entire table.

As stated in Kennedy & Levin (2000), if any identifiable degree of change is assigned to one of the above scales, this immediately determines the telicity of the predicate. That is to say:

(i) When the degree of change has a quantized scalar structure, an endpoint to the event can be identified, and the predicate is telic.

Intensity scale: scale of brightness

(23) a. Deniz masayı 2 dakikada / # 2 dakika boyunca *pırıl pırıl* cilaladı.
Deniz table-ACC two minute-LOC / # 2 minute long brightly polish-PAST-Ø
'Deniz polished the table *smooth* in 2 minutes / # for 2 minutes.'

Quantitiy scale: *scale of extent*

b. Deniz masanın *tamamını* 2 dakikada / # 2 dakika boyunca cilaladı.
Deniz table-ACC completely two minute-LOC / # 2 minute long polish-PAST Ø
'Deniz *polished up* the table in 2 minutes / # for 2 minutes.'

(ii) When the degree of change does not have a quantized scalar structure as in 'Deniz polished the table', an endpoint to the event can not be identified, and the predicate is atelic.

In short, telicity corresponds to the degree of change which is a scalar property of verb meaning. It is determined in terms of mapping between the "structure of the degree of change and the structure of the event" (Kennedy & Levin, 2000). On the other hand, incremental theme argument itself does not directly determine telicity.[7] As is pointed out in Hay et. al. (1999) and in Kennedy & Levin (2000) "incremental theme indirectly determines telicity to the extent that its structure affects possible values of the degree of change. " Briefly, on their view, incremental theme is seen as a measure of a property of an argument of a verb, not actual argument.

When we attempt to formalize the notion of "gradual change" observed in denominal locatum verbs, the formula developed by Kennedy & Levin (2000) in (24) displays the proposed underlying semantics for these verbs. VΔ illustrates the verbs of gradual change , where Pv is gradable property associated with the verb.

(24) a. VΔ = λxλ dλtλe. CHANGE (Pv (x) (t)) (d) (e)

b. [CHANGE (P (x) (t)) (d) (e)] = 1 iff P (x) (BEG (e)) + d= P (x) (END (e))

In prose, CHANGE a gradable property P of an object *x* to degree *d* is ture of an event *e* just in the case to which the degree to which *x* possesses property P at the beginning of an event plus *d* equals the degree to which *x* possesses property P at the end of an event.

By applying this formula to the predicates in (23), one can represent the lexical semantics of verbs of gradual change as such. Note that the following representations ignore the external arguments.

(25) [polish (d-much of) x]= λe. CHANGE (POLISHED (x) (t)) (d) (e)

a. Deniz polished the table smooth.

λe. CHANGE (POLISHED (table) (t)) (smooth) (e)

b. Deniz polished up the table.
λe. CHANGE (POLISHED (table) (t)) (entire) (e)

A last word is on the telic reading of the sentences without a delimiter. Although the degree of change does not have quantized scalar structure in atelic interpretations of locatum verbs with mass nouns, we can still assign telic interpretations to such predicates. This is imposed by our world knowledge of the specific process (e.g., polishing) and the object involved (e.g., table). In other words, context supports the inference of a quantized degree of change. That is to say, real world knowledge tells us that there is conventional maximal degree of brightness / of being covered up with polish for tables. In the sentence 'Deniz polished the table in 10 minutes', the event is considered to have been completed when the table reaches to a point which would *conventionally* be considered "polished" (Hay et.al., 1999, Smollett, 2001 and Ramchand, 2001).

[7] Such an account clarifies the relationship between telicity and the incremental theme argument. It is implicitly assumed that only telic events have incremental themes (see Dowty, 1991). However, scalar representation of denominal locatum verbs demonstrates that telicity and incremental theme are independent, which is something parallel with the proposals in Krifka (1992), Jackendoff (1996), Ramchand (1997, 2001), Levin (2000), Smollett (2001).

Here, we see the role of conversational implicatures in generating telic interpretations in verbs of gradual change, which are compatiable with both durative and time span adverbials (recall the sentences in 18-22). On Hay et.al.'s account, such an adverb duality occurs when the degree of change is inferred, because only then the principles of conversational implicature are employed. According to the principle of informativity, the sentence 'Deniz polished the table' is most informative in a telic interpretation: Deniz polished the table until it reaches to a conventionally specified degree of brighthess. This "degree of brighthess" has some sort of a bound; it is not indefinitly unbounded. Since a telic reading is the most informative one, a time span adverbial is acceptable, as 'Deniz polished the table in 10 mintues'. On the other hand, we see that the same predicate, 'polish the table' can be felicitous with a durative adverbial, 'Deniz polished the table for 10 mintues'. This is also acceptable because " the durative adverbial has the effect of cancelling the telicity implicature" (Hay et.al, 1999). As a result, the sentence is interpreted as such, the table gradually becomes polished, but only to some unspecified degree. We should keep in mind that adverbial duality immediately disappears when the degree of change has a quantized scalar structure as illustrated in (23).

4 Conclusion

• It is possible to determine the aspectual properties of derived denominal verbs in Turkish and in English by regarding the semantic features of the base nominal to some extent. As is discussed, denominal location, locatum and goal verbs derived from countable base nouns are most of the time telic, quite contrary to Harley's (1999, 2003) remark that they are "necessarily" telic. We exemplified that each class of denominals involve exceptions to the telicity claim, e.g., plural senses of decoration denominals. Moreover, collective / distributive interpretations caused by plural arguments of the verbs easily affect the aspectual properties of location, locatum and goal verbs. Consequently, generalizations about the semantic effect of the base noun on the related verb's telicity is not as straightforward as Harley suggests.

• Our data from Turkish provide evidence for

(i) Levin's (2000) claim that verb classes sharing the same lexical conceptual structure do not display unification in terms of aspectual properties. For example, locatum denominals belong to either accomplishment or change of state verb classes. In other words, locatum verbs constitute a grammatically-relevant, semantically-coherent verb class that nevertheless contains some verbs that are necessarily telic, and others display variable telicity.

(ii) Scalar representation of predicates displaying variable telicity.

• The discussion in our study emphasizes that world knowledge and contextual conditions are very influential in carrying out effective interpretations on the aspectual nature of predicates. In other words, we have illustrated that telicity is not strictly determined by linguistic means, whereas contextual cues take their place in the speaker's interpretations of predicates.

References

Brinton, L.: 1991, The mass/count distinction and aktionsart, *Belgian Journal of Linguistics* **6**, 47- 49.

Buck, R.: 1993, Affectedness and other semantic properties of English denominal locative verbs, *American Speech* **68**, 139-160.

Clark, E.V. and Clark, H. H.: 1979, When nouns surface as verb, *Language* **55**, 767-810.

Dowty, D. 1991: Thematic proto-roles and argument selection, *Language* **67**, 547-619.

Hale, K. and Keyser, J. : 1993, On argument structure and the lexical expression of syntactic relations, *in* K. Hale and S.J. Keyser (eds.), *A view from the building 20*, Cambridge University Press, Cambridge, pp. 53-109.

Hale, K. and Keyser, J.: 1998, The basic elements of argument structure, *MIT Working papers in linguistics* **32**, 73-118.

Harley, H. 2003: How do verbs get their names?, *in* N. Shir and T. Rapoport (eds.), *Papers from 2001 Israel workshop on aspect* , Kluwer, Dordrecht (in press).

Harley, H. 1999: Denominal verbs and aktionsart, *MIT Working Papers in Linguistics* **35**,73-85.

Hay, J. et.al. 1999: Scalar structure underlies telicity in 'degree achievements', *in* T. Matthews and D. Strolovich (eds.), *Proceedings of SALT* 9, Cornell University, Ithaca, NY.

Jackendoff, R. 1990: *Semantic structures*, MIT Press, Cambridge, Mass.

Jackendoff, R. 1991: Parts and boundaries, *in* B. Levin and S. Pinker (eds.), *Lexical and conceptual semantics*, Blackwell , Cambridge, pp. 9-46.

Jackendoff, R. 1996: The proper treatment of measuring out, telicity, and perhaps even quantification in English, *NLLT* **14**, 305-351.

Kageyama, T. 1997: Denominal verbs and relative salience in lexical conceptual structure, *in* T. Kageyama (ed.), *Verb semantics and syntactic structures*, Kurosio, Tokyo, pp. 45-94.

Kennedy, C. 2000: Scalar representation in natural language semantics, NSF Career BCS.

Kennedy, C. and Levin, B. 2000: Telicity corresponds to degree of change, Michigan State University, Nov. 30, 2000. www. ling.nwu.edu/~kennedy/.

Krifka, M. 1989: Nominal reference, temporal constitution and quantification in event semantics, *in* R. Bartsch et al. (eds.), *Semantics and contextual expression*, Foris , Dordrecht, pp.75-115.

Krifka, M. 1992: Thematic relations as links between nominal reference and temporal constitution, *in* I.A. Sag and A. Szabolcsi (eds.), *Lexical matters*, Stanford, CSLI, 29-54.

Labelle, M. 2000: The semantic representation of denominal verbs, *in* P. Coopmans, M. Everaert and J. Grimshaw (eds.), *Lexical specification and insertion*, John Benjamins, Amsterdam, pp. 213-240.

Levin, B. 2000: Aspect, lexical semantic representation, and argument expression, *BLS* **26**, 413-430.

Lieber, R. 1992: *Deconstructing morphology: word formation in syntactic theory*, University of Chicago Press, Chicago.

Marchand, H. 1969: *The categories and types of present-day English word-formation*, C. H. Beck, Münih.

Pinker, S.1989: *Learnability and cognition: The acquisition of argument structure*, MIT, Cambridge.

Ramchand, G.: 1997: *Aspect and predication*, Oxford University Press, Oxford.

Ramchand, G. 2001: Aktionsart, l-syntax and selection, Utrecht conference on aspect, ms. http:// users.ox.ac.uk/~gcram/research/utproc.pdf.

Smollett, R. 2001: Quantized direct objects don't delimit after all, Utrecht conference on aspect, ms. http:// users.ox.ac.uk/~gcram/research/utproc. pdf.

Tenny, C. 1994: *Aspectual roles and the syntax-semantics interface,* Kluwer, Dordrecht.

Verkuyl, H. 1993: *A theory of aspectuality,* Cambridge University Press, Cambridge.