1. Introduction

In closing his chapter on Number, Jespersen (1924:210) notes that, "'one or more than one' is not incompatible with the idea expressed by the verb itself'. With the notion 'plural of the verbal idea' he distinguishes between the cases where the plural idea is in the subjects (verba tantum pluralia), and "the verbal idea itself that is made plural". Following Jespersen’s lead, the European tradition (Dressler 1968, Xrakovskij 1997) studied verbal plurality within the general category of Number. Typological studies on native languages of America also demanded a new approach to the category of Number as agreement patterns observed in these languages cannot be properly explained without reference to quantificational aspects of the verbs themselves (Durie 1986, Mithun 1988). It is postulated that this type of quantification relates to the repetition of events rather than nominal arguments. The structure seems to exist in many languages of North America1, in four major families of Africa, in certain Paleoasiatic languages, in languages of the Caucasus, in languages of South Central Dravidian group, in Austronesian, and in Papuan languages (Corbett 2000).

The formal means of encoding verbal plurality include, reduplicative constructions (Cuna, pioke 'beat' → pipioke 'beat and beat'), various derivational affixes (Madi, tsi ‘bite’ → o-tsi ‘gnaw’), suppletive forms (Klamath, dewy ‘fire a gun once’ → yo ‘shoot many times’), vowel alternation (Chechen, tatta ‘to push’ → titta ‘to push repeatedly’), and lexical items (English, flutter, wiggle). Historical antecedents of verbal plurality are iteratives, or compound verbs (Steever 1987).

1 Crevels (2006) adds Itanoma, a genetically unclassified language spoken in lowland Amazonian Bolivia among languages with verbal plurality markers.
It is assumed that the nature of plurality is essentially the same as with nominal and verbal categories: mass/count and bounded/unbounded distinctions equally hold in both domains. Typically, verbal plurals express actions performed by multiple agents, or actions performed over multiple entities, actions that are temporarily or spatially scattered.

The semantics of verbal plurality received relatively more attention and research on these predicates commonly concluded that verbal plurality is essentially a semantic phenomenon. Newman (1990) coins the term *pluractionality*\(^2\) to refer specifically to the derived plural verb stems that denote semantic plurality. The logical consequence of event plurality derives semantic types familiar from studies on aspect, including iterative, distributive, continuative and the like\(^3\). However, finer-grained semantic analyses of plurality in the verbal domain produce a more complex network of meanings and associated submeanings. Informally provided types and subtypes of these meanings are discussed in detail in Dressler 1968 and in Cusic 1981. Lasersohn (1995:242), on the other hand, attempts to formalize the semantics of verbal plurals (1) and concludes that their semantics is not perfectly uniform and it is possible to find variations from language to language and even within the same language.

\[
(1) \quad V-PA(X) \iff \forall e \in X \ [V(e)] \land \text{card}(X) \geq n
\]

Lasersohn concludes that the formal rule he provides holds true of any group of events and ignores possible individuation of events in the group, noting the need for a more adequate semantic analysis that would impose limitations on the range of possible readings.

One such analysis is presented in Tatevosov (2005, 2007) in which he discusses the possible range of meanings of a derivational morpheme in Chuvash, another Turkic language. According to Tatevosov, the pluractional marker -\textit{kala}- derives at least four different readings and each of these possible readings can be further explicated by the scalar semantics approach developed by Kennedy and McNally (1999, 2005).

In this paper, we will present a descriptive semantic analysis of pluractionality markers in Turkish. In the first section, we will mainly follow the classification of the types of meanings and submeanings proposed in Cusic 1981. In

\(^2\) The study of verbal plurality suffers terminological problems. Lasersohn (1995) points the existence of several distinct terms as well as different senses assigned to these terms by different authors. Corbett (2000) also complains the lack of standardized terminology in research on verbal number, noting that the term *pluractionality* is mostly preferred by Africanists. It seems like *pluractionality* is winning over as more and more authors currently use this term.

\(^3\) Dolinina (1999) distinguishes two types of approaches to verbal plurality. The Pro-Aspect view argues that quantificational features are influenced by or influence the aspectual features of the verb, whereas, Pro-Number view argues that quantification is a semantico-logical parameter, independent of other parameters.
the second part of the paper, we will present a formal representation following a scalar semantic analysis for some of the meanings expressed by the verbal plurality markers in Turkish. The analysis presented here will be limited to morphological and postverbal means of encoding event plurality. The two most frequent plurality markers in the verbal domain are the suffixes -ala- and -akla-, and the postverbal construction that will be analyzed as plurality marker is -ıp dur-. The type of semantic analysis presented can easily be extended over other means of pluraactionality in Turkish. We believe that the types of meanings described here possibly hold true for types of meanings expressed by other lexical, morphological and grammatical means mentioned above.

2. Two forms of pluraactionality in Turkish

The two most common affixes of verbal plurality in Turkish are -ala- and -akla- The number of derivatives, including the samples given in the grammars, does not exceed sixty derived stems. Although these suffixes are given exactly in the same form as above in many contemporary grammars, it is also often indicated that they are in fact “compound” morphemes, composed of a common denominal verbalizer -la proceeded by -a and -ak respectively. Both are apparently affixed to verbal roots, deriving the appropriate nominal base for the following verbalizer4. It is assumed that -a is affixed to a verb root and functions more like a base-extender, and -ak is affixed to a verbal root to derive a result nominal implying a diminutive meaning as well. Both affixes are exemplified in (2):

(2) a. gez- ‘to wander’ → gez-ele ‘to wander aimlessly’

wander-VRBL

4 Given the limitation of space, we will not present a morphological analysis for these compound affixes, nor discuss the possible alternative analyses concerning their morphological makeup, as they often call for arguments regarding their historical development. Here, we will refer to only two to provide a general idea. Banguoğlu (1956) claims that -iştir- and -ala- are the two contemporary productive suffixes of iteration. He notes that they are synonyms and do not differ in their contexts of use, as they are commonly affixed to the same verb roots: serp-iştir — serp-ele ‘sprinkle repeatedly’; it-iştir — it-ele ‘push repeatedly’ etc. In his analysis, -akla- is a ‘variant’ of -ala- resulting from the loss of velar plosive. Thus they are synonyms as well and are affixed to identical verb roots as in the pairs, dur-akla — dur-ala, ‘hesitate’; it-ele — it-ele. Tietze (2000) assigns two functions for -iştir-: iterativum and intensivum. For -akla-, he claims that the compound affix is made up of a verbalizer -la and a preceeding deverbal verb deriving suffix, -ak. This suffix has two functions, iterativus and intensification, and -ala-, functions to derive verbum diminutivum which he claims is a function of iterativum. He further indicates that -işle- also derives verbum diminutivum by iterativum. To complicate matters more, Turkish allows all these affixes on the same verb root. The act of proding/poking may be expressed by all: dür-ükle, dür-üşle, dür-ele, dür-iştir. The differences in meaning are very hard to detect. In a sense, they all are in free variation.
b. *it- 'to push' \( \rightarrow \) it-ekle- 'push repeatedly, do small pushes'  
push-VRBL

The second type of construction that we argue to encode verbal plurality is called the *postverb* construction. Johanson (2000:55) indicates that periphrastic or derivational markers that express modes of action function like adverbials, modifying the meaning of the basic actional phrase, and corresponding to *preverbs* of many Indo-European languages; in Turkic languages there are *postverbs*. The construction consists of a converb suffix and a following desemanticized auxiliary verb. The quantificational semantics of postverbs encodes meanings like frequency, duration, and degree of accomplishment. The postverb construction that will be discussed in this paper, namely, *-ıp dur-*, is commonly identified as a marker of continuation.

(3) serp-ip  
   dur-du-m.  
   sprinkle-CN V  stand-PST-1SG  
   'I kept on/continued sprinkling.'

In the following section, we will first review the semantics of pluractionals. We will display basic properties of Turkish derivational and postverbal expression of pluractionality, concentrating mainly on their quantificational properties.

### 3. Semantics of pluractionality

Cusic (1981) presents by far the most comprehensive semantic analysis of pluractionals, mainly following the proposals of Dressler (1968). He takes verbal plurality as a semantic category and argues that it should be construed broadly to include the multiplicity of actions, events, occurrences, occasions with the addition of "whatever indicates extensions or increase, whether in time or space, of actions or states of affairs" (1981:64). So construed, plurality of events in this sense does not express plurality as ordinarily understood but expresses a wide range of plural meanings. The list he gives includes *repetitiveness, repeated occasions and events, persistent consequences, habitual agency, distributed quality, inchoativity, cumulative result, intensity, plurality of sites of action, duration, continuity, conation, distribution, celerativity, retardativity, augmentation, and diminution.*

To categorize systematically these plural meanings Cusic defines four parameters:

1. the event ratio parameter
2. the relative measure parameter
3. the connectedness parameter
4. the distribution parameter
The event ratio parameter distinguishes between internal and external plurality; the relative measure parameter relates event plurality to general plural functions; the connectedness parameter relates event plurality to the mass/count distinction, and the distribution parameter relates to temporal and spatial extension as well as to the number in associated noun phrases. Each of these parameters captures different dimensions of implicit quantificational relationships of the pluralized events and they are not completely distinct but are closely related.

Event ratio parameter identifies two major types of verbal plurality as repetitive and repeated actions. A repetitive action encodes an event-internal plurality, or phase repetition in which the conceived units of action are confined to a single occasion and to a single event on that occasion. Event-internal plurality is mass-like since the number of repetitions are large or uncountable. Repeated action, on the other hand, encodes an event-external plurality in which the units of action are potentially but not necessarily distributed over occasions. Repeated actions combine together the event-external/occasion-internal and event-external/occasion-external plurality.

The cross-classification of repetitive/repeated distinction with relative measure parameter defines two major classes. Repetition may derive two opposing quantitative notions simultaneously: increase and decrease. Repeated actions also derive two measure concepts: small or precise count and large or indeterminate count. The typology of meanings of repetitive actions include (Cusic 1981:88):

<table>
<thead>
<tr>
<th>size of units</th>
<th>decrease</th>
<th>increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>diminutive</td>
<td>augmentative⁵</td>
<td></td>
</tr>
<tr>
<td>degree of effort</td>
<td>tentative</td>
<td>intensive</td>
</tr>
<tr>
<td>appropriateness</td>
<td>excessive</td>
<td></td>
</tr>
<tr>
<td>production of result</td>
<td>conative, incassative</td>
<td>cumulative</td>
</tr>
<tr>
<td>time</td>
<td></td>
<td>durative-continuative</td>
</tr>
</tbody>
</table>

And the typology of meanings of repeated actions include (Cusic 1981:96):

<table>
<thead>
<tr>
<th>precise</th>
<th>small count</th>
<th>large count</th>
</tr>
</thead>
<tbody>
<tr>
<td>precise</td>
<td>1. duplicative</td>
<td>5. customary/occupational/habitual general repeated action</td>
</tr>
<tr>
<td>2. alternative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. reversative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>indefinite</td>
<td>4. discontinuous/dispersive</td>
<td></td>
</tr>
</tbody>
</table>

⁵ There seems to be a typological error in the original text. Augmentative although listed, discussed and exemplified where it is introduced, it does not appear in the table that summarizes the typology of meanings. Intensive occurs twice, so must be replaced by augmentative.
With respect to event ratio parameter, morphological and postverbal event pluralities are both *repeated* actions in Turkish. They encode plural events on a single occasion, expressing *event-external repeated* action.

    prod-PST  
    ‘Ali proded Hasan (once).’

b. Ali Hasan-ı dürt-ükle-di  
    prod-PA-PST  
    ‘Ali proded Hasan repeatedly (once or multiple times).’

    prod-CONV stand-PST  
    ‘Ali kept on proding Hasan.’

In the Turkish case, the plural events encoded by derived verbs are interminatives that denote series of micro-actions. These micro-actions are repeated regularly after intervals and they are all identical to themselves in the entire period of their performance. The intervals are perceived as short and equal (Xrakovskij 1997). It is not possible to individuate the events that are pluralized by *postverb* construction, in other words, the type of plurality is *mass*-like. The individual events in the series do not undergo any change in their basic argument structure, however, they may differ from each other in terms of their duration, hence are not necessarily identical to themselves. Furthermore, they are not necessarily regularly repeated, hence the intervals may not be identical in the entire period of their performance. More specifically, the intervals are not perceived as short and are immeasurable in length. In accordance with the *Pluralized Event Theory* of Ojeda (1998:267), we may say that verbal pluralization is the pluralization of the event argument.

Despite the observation that Turkish pluractionals are repeated events rather than repetitive events, they express meanings associated with repetitive events. Even more interesting is the fact that none of the meanings associated with repeated events that are listed above are expressed either by derivational affixes or by postverbal constructions in Turkish.

Note that in the Turkish data presented so far, the derived nominal is more like a cognate object. We believe that this similarity of the form with the verb and its object renders individually repeated actions more like phases of a single action encoded by the root verb. Given that these micro-actions are short and repeated regularly, their semantics takes on the semantic types of the repetitive action.

Coming back to the meanings determined by the relative measure parameter, other than *conative* and *cumulative*, all remaining meanings in the list are expressed in Turkish by derived pluractionals. Postverbal pluractionality, on the other hand, can express only *durative-continuative* meaning.
Diminutive meaning is expressed when the repetition decreases the size or importance of the units of action\(^6\). In this reading, the overall quantity of the action is kept constant while the number of parts are increased. Morphological pluractionals that express diminutive meaning in Turkish include, it-ele-mek ‘to push repeatedly’, it-ekle-mek ‘to push repeatedly’, kir-ıkla-mak, ‘to break into pieces’ did-ıkle-mek ‘to pick repeatedly’.

break-PA-IMP
‘Crumble the biscuits. Mix the pieces with butter thoroughly.’

Tentative meaning is expressed when the amount or expected degree of effort regarding the action is decreased by repetition. The action is interpreted as being performed half-heartedly or with less effort than expected: Gev-ele-mek ‘mumble’, savs-akla-mak, ‘to disregard’, say-ıkla-mak, ‘to rave’ are such de­rived verbs in Turkish.

(6) Herkes ağzında birşeyler gev-eli-yor ancak ne demek
mumble-PA-PROG-3 PL
istediklerini tam anlamıyla söylemiyorlar.
‘Everyone mumbles something in his mouth but no one actually says what they mean.’

Decrease is also associated with the result of the action when repetition signals lack of an attempt to do anything in particular. In incassative the action is performed aimlessly or it is undirected. Gez-ele-mek, ‘to wander, to drift’, pinek­lemek ‘to sit idly’, çiz-ıkle-mek ‘to sketch’ are among such verbs.

(7) Yazınızı okudum, hayretler içine düştüm, acaba hayal mi görüyorum
dedim, biraz ge­z-ele-di-m geldim, ve tekrar okudum.
wander-PA-PST-3 PL
‘I read your article, I was shocked, I thought I am daydreaming, I wandered for a while, came back and read it again.’

Intensive reading is expressed when the importance or size of parts of action increases. There is an increased effort in the action or quantity of the action is increased. Intensive meaning is encoded morphologically in verbs like ov-ala­mak, ‘to rub forcefully’, çaba-la-mak ‘to strive’, kov-ala-mak ‘to pursue incessantly’, silk-ele-mek ‘to shake off’ in Turkish.

(8) Sert bir havluya vücudunu kızartınciya kadar ov-ala-di.
rub- PA-PST
‘He rubbed his body with a rough towel until his skin reddened.’

\(^6\) Unless otherwise indicated, all paraphrases of meanings are from Cusic (1981).
Augmentative is expressed when the repetition implies increased emphasis or quantity. In this reading, the amount of activity and also the amount of substance implied as being acted upon are increased: *kır-ıkla-mak* ‘to break into pieces’, *did-ıkle-mek* ‘to pick repeatedly’.


break-PA-IMP

‘Crumble the biscuits. Mix the pieces with butter thoroughly.’

The increased amount of energy exerted in the action yields excessive reading. Turkish verbs in this class generally take onomatopoeic roots: *pat-ıkla-mak, hırp-ala-mak, tep-ele-mek* ‘to hit severely, to rough up, to beat repeatedly.’

(9) Babam yerinden fırlayıp beni bir iyi pat-ıkla-yacak sanıyordu.

hit-PA-FUT

‘I thought my father would jump off and give me a good beating.’

The final category in the increase class is *durative-continuative* reading. Here, the increased quantity of action implies an increase in the time the action occupies.

With respect to the remaining two other parameters, we have little to say in this paper. Both morphological and postverbal verbal plurality in Turkish have little, if any, implications in terms of separation in time, space or separation of actor from object, object from object. As the name implies, the connectedness parameter concerns the relative prominence of bounds at phase and event levels. Its relation to repetitive and repeated events suggests that repetitive events are continuous or connected since they represent single events, while repeated events are commonly discontinuous. The connectedness parameter does not provide categories of meaning but rather measures out the degree of connectedness and places the classes provided by relative measure parameter along a scale of continuum. Other than cumulative and durative-continuative readings, all classes of meanings defined by relative measure are neutral with respect to degree of connectedness.

### 4. Scalar representation of verbal plurality

In this section, we will explicate some of the semantic functions of verbal plurality through scalar semantic representation. According to scalar semantics, the semantic component of language involves means to relate objects to abstract representation of measurements or scales. As Kennedy (2004) explains, there are three parameters that constitute scales: a set of *degrees* that represents measurement values; a *dimension*, which indicates the property being measured (volume, speed, height, etc.); and an *ordering* relation on the set of the degrees, which distinguishes between predicates that describe increasing and decreasing properties. Scalar meaning involves comparison scales that have default standards (standard of comparison).
Tatevosov (2005) proposes that -kala- in Chuvash is not only a pluractionality marker but also a degree restrictor. -kala- assigns "less than the standard" meaning over the values set by different parameters and they are given in (10a-d) below:

(10) Vasja uj-a suxala-kala-r-č.
    vasja   field-DA  plow-kala-PFV-3SG
    (a) ‘Vasja plowed the (same) field making pauses (one part after another).’
    (b) ‘Vasja plowed the field slowly.’
    (c) ‘Vasja plowed the field for a short time.’
    (d) ‘Vasja partly plowed the field.’

The formal representation of “less than the standard” meaning is given in (11):

(11) \[ -\text{kala} - \mid = \lambda P \lambda e \exists d \left[ F_c(P)(e) = d \land d < \text{STANDARD}(F_c)(C) \right] \]

\[ -\text{kala} - \mid \] introduces a free variable \( F_c \) over degree functions that specifies the degree \( d \) to which an event \( e \) of the type \( P \) possesses a relevant gradable property. The value of \( F_c \) is fixed contextually. \[ -\text{kala} - \mid \] also ensures that \( d \) is less than the standard of comparison determined by the STANDARD relation for a given degree function with respect to the comparison class. \( C \) is a free variable over comparison classes whose value is fixed contextually.

The informally paraphrased meanings in (10) are then assigned to their relative functions as in (12):

(12) \[ \lambda y \lambda e \exists d \left[ F_{\text{CONTINUITY}} \left( \left[ \text{plow}(e) \land \text{Theme}(y)(e) \right] = d \land d < 1 \right) \right] \]
    \[ \lambda y \lambda e \exists d \left[ F_{\text{SPEED}} \left( \left[ \text{plow}(e) \land \text{Theme}(y)(e) \right] = d \land d < \text{SPEED} \right) \right] \]
    \[ \lambda y \lambda e \exists d \left[ F_{\text{DURATION}} \left( \left[ \text{plow}(e) \land \text{Theme}(y)(e) \right] = d \land d < \text{DURATION} \right) \right] \]
    \[ \lambda y \lambda e \exists d \left[ F_{\text{AFFECTIONEDNESS}} \left( \left[ \text{plow}(e) \land \text{Theme}(y)(e) \right] = d \land d < 1 \right) \right] \]

In an appropriate context, free variable \( F_c \) can be assigned to one of the functions measured on a scale as in (13). This indicates that degree functions measure events along different dimensions such as continuity, speed, duration and affectedness. Tatevosov also assumes that the ordering relation imposed by scales on relevant properties are positive\(^7\).

(13) \( F_{\text{CONTINUITY}} \): maps its argument onto the \( S_{\text{CONTINUITY}} \) scale; measures continuity of the event;
    \( F_{\text{DURATION}} \): maps its argument onto the \( S_{\text{DURATION}} \) scale; measures the duration of the event;

\(^7\) For \( F_c \) and its relevant scales, degrees are formalized as positive intervals on a scale. They lack negative counterparts quite contrary to the fact observed in polar adjectives.
Degree Modification and Event Semantics

\( F_{\text{SPEED}} \): maps its argument onto the \( S_{\text{SPEED}} \) scale; measures the velocity of the event;

\( F_{\text{AFFECTEDNESS}} \): maps its argument onto the \( S_{\text{AFFECTEDNESS}} \) scale; measures the extent to which the participant is affected by the event.

The scale typology in (14) distinguishes 4 types of scales: upper closed scale possesses a maximal degree which must be equal to 1 (\( d_{\text{max}} = 1 \)); lower closed scale possesses a minimal degree which must be bigger than 0 (\( d_{\text{min}} > 0 \)); closed scale possesses both; open scale possesses neither. Degrees are real numbers between 0 and 1. R and \( \Delta \) represent the ordering relation and dimensions for the scale respectively.

(14) A typology of scale structures

\[ < D (0,1), R, \Delta > \quad \text{OPEN SCALE} \]
\[ < D [0,1), R, \Delta > \quad \text{LOWER CLOSED SCALE} \]
\[ < D (0,1], R, \Delta > \quad \text{UPPER CLOSED SCALE} \]
\[ < D [0,1], R, \Delta > \quad \text{CLOSED SCALE} \]

Analogous to scale structure of gradable adjectives\(^8\), it is assumed that open scales are associated with relative or context-dependent standards of comparison, closed scales are associated with absolute or context-independent standards of comparison. Different scale structures for different functions (\( F_{\text{C}} \)) are determined on the basis of the above mentioned scales typology. Under this account, it is assumed that the standard degree for \( \text{continuity} \) function associated with a maximal value on a scale. Since uninterrupted and totally continuous event is measured with respect to a maximal value, \( S_{\text{CONTINUITY}} \) sets up an upper closed scale. Likewise, \( S_{\text{AFFECTEDNESS}} \) measures the degree of affectedness of internal argument in a verbal predicate. It is sensitive to quantized properties of this argument and totally affected internal argument corresponds to maximal value on the affectedness scale. Thus, \( S_{\text{AFFECTEDNESS}} \) with quantized predicates forms upper closed scale. On the other hand, \( \text{speed} \) and \( \text{duration} \) functions are relative because they can vary from one circumstance to another. Since their standards of comparisons are determined contextually, they set up open scales.

(15) \( S_{\text{CONTINUITY}} \) and \( S_{\text{AFFECTEDNESS}} \) (with quantized predicates) are upper closed scales
\( S_{\text{DURATION}} \) and \( S_{\text{SPEED}} \) are open scales

\(^8\) \text{Dry, empty, straight are canonical closed-scale adjectives because in principle it is possible for something to be so dry or empty that it cannot be any more drier or emptier. The second type of adjectives are open-scale adjectives which map their arguments on a scale with no maximal value. For adjectives like long, wide, short it is not in principle possible to identify maximal values on the scale.}
For a non-derived verb, in the neutral context, degree of standard is set to 1 for upper closed scales, and for open scales, contextually fixed degree for particular event type determines the degree of standard.

\[
\begin{align*}
F_{\text{CONTINUITY}} & \quad \text{yields} \quad 1 (= \max (S_{\text{CONTINUITY}})) \\
F_{\text{AFFECTEDNESS}} & \quad \text{yields} \quad 1 (= \max (S_{\text{AFFECTEDNESS}})) \\
F_{\text{SPEED}} & \quad \text{yields} \quad C_{\text{SPEED}} \\
F_{\text{DURATION}} & \quad \text{yields} \quad C_{\text{DURATION}}
\end{align*}
\]

5. Degree modification and verbal plurality in Turkish

5.1. Morphological derivations

We noted previously that the range of meanings expressed by repeated events can be grouped under two broad quantificational categories, namely increase and decrease. In accordance with this general classificational criterion, we argue that meanings encoded in Turkish pluraonals can also be subsumed under these two notions thus two broadly construed semantic functions. As opposed to Chuvash case, Turkish -ala-/akla- derivations express both increase and decrease with respect relevant dimensions. Adopting the scalar approach, we also define -ala-/akla- as degree modifiers.

The DECREASE function of -ala-/akla- suffixes with respect to size, effort and aim is presented in (17). (18) is the formal semantic representation of these degree modifiers:

\[
(17) F_{\text{DECREASE}}: \text{maps its argument onto the } S_{\text{DECREASE}} \text{ scale; measures diminution in the realization of the event.}
\]

\[
(18) ||-ala-/akla-||= \lambda \mathcal{P} \mathcal{E} \exists d \left[ F_{c}(P)(e) = d \land d < \text{STANDARD} \left( F_{c}(C) \right) \right]
\]

-ala-/akla- assign the “less than the standard” meaning along the measurable dimensions of CONTINUITY, DURATION, AFFECTEDNESS to the event predicate as in (19) and (20) respectively. Compared to base verb itmek ‘to push’, in itelemek/iteklemek ‘to push repeatedly’, the agent carries out the action repeatedly with short pauses, the duration of the event takes short time and the theme argument does not undergo a complete change of location.

\[
(19) \quad \text{Taner masa-\text{-}yı it-ele-di.}
\]

T. table-ACC push-PA-PST-3SG

(a) ‘Taner pushed the (same) table repeatedly (with short pauses).’
(b) ‘Taner pushed the table for a short time.’
(c) ‘Taner pushed the table for a short distance.’

\[
(20) \quad \lambda y \lambda e \exists d \left[ F_{\text{CONTINUITY}} \left( \left[ \text{push}(e) \land \text{Theme}(y) (e) \right] = d \right) \land d < 1 \right]
\]

\[
\lambda y \lambda e \exists d \left[ F_{\text{DURATION}} \left( \left[ \text{push}(e) \land \text{Theme}(y) (e) \right] = d \right) \land d < C_{\text{DURATION}} \right]
\]

\[
\lambda y \lambda e \exists d \left[ F_{\text{AFFECTEDNESS}} \left( \left[ \text{push}(e) \land \text{Theme}(y) (e) \right] = d \right) \land d < 1 \right]
\]
Degree Modifîcation and Event Semantics

as one of the functions associated with a closed scale, maintains that -ala- derivation involves less than a maximal degree of continuity. Maximal value (max=1) on the $S_{continuity}$ is the standard degree identified for $F_{continuity}$. It means that the event of *immek* ‘to push’ possesses a maximal value on the continuity scale, since it is usually fulfilled without any interruption, i.e., it involves no pauses. In contrast, *iteklemek* ‘to push repeatedly’ is carried out with short pauses. The discontinuity observed in this event is represented as less than the maximal degree on the $S_{continuity}$.

$F_{duration}$ measures the event *iteklemek* on $S_{duration}$ which is an open scale. Root verb *immek* ‘to push’ sets the the standard of comparison and it provides the mean of degrees to the event to be measured. In a commonly understood act of pushing a normal-sized table by an average person in an average-sized room, the event would last ten or fifteen seconds. Keeping all the ingredients of the event constant, in the repeated version of the act of pushing, each micropushes would last shorter. Thus -ala- modification restricts the duration of an event and encodes that the event of *iteklemek* ‘to push repeatedly’ expands a shorter period of time than the event of *immek* ‘to push’.

INCREASE with respect to effort, (i.e., intensity), quantity, and appropriateness (i.e., excessiveness) is defined in (21) and formally represented in (22):

\[(21) \quad F_{INCREASE}: \text{maps its argument onto the } S_{INCREASE} \text{ scale; measures augmentation in the realization of the event.}\]

\[(22) \quad ||-ala/-akla-|| = \lambda P \exists d [F_c (P)(e) = d \land d > STANDARD (F_c) (C)]\]

$||-ala/-akla-||$ introduces a free variable $F_c$ over degree functions that specifies the degree $d$ to which an event $e$ of the type $P$ possesses a relevant gradable property. -ala/-akla- assert that $d$ is more than the standard of comparison determined by the STANDARD relation for a given degree function with respect to the comparison class.

We propose that various meanings encoded by pluractionals that express increase along different dimensions can be subsumed under INTENSITY function:

\[(23) \quad F_{INTENSITY}: \text{maps its argument onto } S_{INTENSITY} \text{ scale; measures the extent to which the event is intensive, forceful, effortful.}\]

\[(24) \quad \text{Taner tava-yı sünger-le ov-ala-di.} \quad (\text{T. pan-ACC sponge-vvith rub-PA-PST-3SG})\]

‘Taner rubbed the pan with a sponge (with more energy exerted).’

Compared to the standard, i.e., the rubbing event (*ovmak* ‘to rub’), the event of *ovalamak* ‘to rub repeatedly, effortfully’ involves more force, pressure and
friction. This time -ala- indicates that the degree of intensity in the fulfillment of the rubbing event exceeds the standard value. In the context of (24), the intensive event with more effort is determined by the comparison class through which the standard relation is set. In (24), while the agent exerts intense force to rub the pan, the same agent does not have to exert excessive force to rub his eyes (gözlerini ovaladı ‘rub his eyes’). We can say that \( F_{\text{INTENSITY}} \) may vary with respect to different circumstances and the value of standard variable is fixed by the context. Therefore, \( F_{\text{INTENSITY}} \) is associated with an open scale:

(25) \( S_{\text{INTENSITY}} \) is open scale

\[ F_{\text{INTENSITY}} \text{ yields } C_{\text{INTENSITY}} \]

Under this scalar description, (24) has the following form:

(26) \( \lambda y \lambda e \exists d \left[ F_{\text{INTENSITY}} \left( [\text{scrub}(e) \land \text{Theme}(y)(e)] = d \right) \land d > C_{\text{INTENSITY}} \right] \)

5.2. Postverb construction

Traditionally, -ıp dur- construction is discussed in relation to aspeсtual notions such as \textit{continuity}, \textit{frequentative}, \textit{habitual} and the like9. From the perspective of this paper, we take this construction as representing pluractionality and serving as a degree modifier as well. As opposed to morphological derivations, -ıp dur- construction can combine with almost all verb roots, except those that are aspectually specified. While morphological forms express both “more than” and “less than” meanings, postverbal pluractionality can express only “more than” or INCREASE meaning as represented in (27).

(27) \( \|\text{-ıp dur-}\| = \lambda P \lambda e \exists d \left[ F_{c}(P)(e) = d \land d > \text{STANDARD}(F_{c})(C) \right] \)

There are two subfunctions of \( F_{\text{INCREASE}} \): \( F_{\text{CONTINUITY}} \) and \( F_{\text{DURATION}} \). In -ıp dur- construction, the event described by the verb root constitutes the standard value. The requirement -ıp dur- modification imposes on the arguments of standard value is the minimal event occurrence and its multiplication. In \( F_{\text{CONTINUITY}} \), as illustrated in (29), root verb \textit{itmek} ‘to push’ acts as the minimal standard value; -ıp dur- multiplies this minimal value and it ensures that the degree of continuity of pushing event is more than zero. As such, -ıp dur- effects a change on \( S_{\text{CONTINUITY}} \) scale (set up as upper closed scale in (16)) and it builds a lower closed continuity scale. Thus, \( F_{\text{CONTINUITY}} \) identified in -ala-/akla- derivations and -ıp dur- construction differs with respect to the scale structure.

(28) Taner masa-yı it-ıp dur-du.
T. table-ACC push-CNV stand-PST-3SG
‘Taner kept on pushing the table.’

(29) \( \lambda y \lambda e \exists d [F_{\text{CONTINUITY}} ([\text{push}(e) \land \text{Theme}(y)(e)]) = d] \land d > 0 \)
\( \lambda y \lambda e \exists d [F_{\text{DURATION}} ([\text{push}(e) \land \text{Theme}(y)(e)]) = d] \land d > C_{\text{DURATION}} \)

The continuity scale with a lower endpoint corresponds to the minimal pushing event in which its theme argument is minimally affected. Since, in principle, there is no obligatorily defined limit to the number of times a pushing event can be repeated, there is no bound on the upper end of the continuity scale on which \( F_{\text{CONTINUITY}} \) maps its argument. Building \( S_{\text{CONTINUITY}} \) as a lower closed scale also conforms to the aspectual interpretation of -ıp dur- construction. In terms of \( F_{\text{DURATION}} \), -ıp dur- induces that the extension of the pushing event ('itip durmak 'keep on pushing') exceeds the standard degree of any pushing event ('itmek 'to push'). Here, \( F_{\text{DURATION}} \) even gives the sense of prolongation of a process that goes beyond its normal temporal extension through iteration. Given that \( C_{\text{DURATION}} \) lacks lower and upper bounds, standard of comparison for the duration of such an event is determined by contextual factors and the value of comparison class can be more than one.

6. Conclusion

In this paper, we discussed two types of verbal pluralization in Turkish. The descriptive account of the Turkish data proved that there is a wide range of meanings expressed by these constructions and most of the cross-linguistically attested meanings of verbal plurals are also found in the language. When the data is scrutinized from a pro-number perspective, the scalar semantic analysis not only provides a unified account of the structures in question but also helps to define associated semantic functions explicitly. We showed that pluractionals in Turkish may express meanings that may be subsumed under two broad quantification categories which are further specified with the help of a number of subfunctions. Formally speaking, morphological type encodes both increase and decrease as modified by the affixes that are at the same time degree modifiers. The syntactic type, on the other hand, encodes only an increase function.

References


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