What Should Deverbal Affixes Know: Evidence from Turkish

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In this paper, I address the issue of what type of information is necessary/relevant for nominal derivation. Two different proposals have been offered: structural (Belletti and Rizzi (1988), Burzio (1986), Fabb (1984), Rappaport and Levin (1987, 1988)) and thematic (Sproat, 1985). Structural analysis has received the widest attention and support. This analysis claims that the argument structure of a verb provides the necessary information for nominalization, (for all grammatical functions in fact), and that structural differences between verbs are responsible for the derivation and non-derivation of some deverbal nominals. This approach also supports the idea that derivation does not make reference to specific theta roles, but only refers to arguments of the base verb. Various analyses of English-er nominalization based on this principle have been made (Burzio (1986), Fabb (1984) and Rappaport and Levin (1987, 1988)). These analyses provide a generalized account for -er nominalization. Specifically, -er nominalization is possible only for verbs that have an external argument regardless of the semantic properties of that argument. The existence of derived nominals shown in (1) is used to support this generalization:

(1) Non-agentive -er nominals in English:

  gusher
twister
lover
discoverer

In these examples, the theta roles of the external argument are source, experiencer, theme and benefactor respectively. These verbs nominalize because they have external arguments. Verbs like arrive and fall (which are classified as unaccusatives) do not nominalize because they lack external arguments (Levin and Rappaport, 1987):

(2) Ill-formed -er nominals in English:

  *arriver
  *faller

Sproat (1985), on the other hand, proposes a thematic analysis to account for -er nominalization in English. According to Sproat, only verbs with an actor argument allow for the type of derivation in question.

Considering each of these proposals in turn, I show first that a structural analysis makes wrong predictions about the derivation of agentive nominals from psych verbs in Turkish. I then show that a thematic analysis cannot account for the derivation of Turkish instrumental nominals. Following this, I present my own alternative analysis.

I begin my examination of a structural analysis approach by looking at the argument structure of Turkish psych verbs. As discussed in the literature (Belletti and Rizzi, 1988; Grimshaw, 1987) psych verbs in Italian and English are assumed to have one of two possible underlying structures, and due to this structural difference, psych verbs behave differently under causativization, passivization and cliticization, etc. It is generally agreed that psych verbs have two arguments with experiencer and theme theta roles. One group of psych verbs, those which have been labelled as fear type psch verbs, maps an experiencer theta role onto an external argument which is present underlingly and a theme theta role to its internal argument. This is considered to be the unmarked theta role.
assignment for psych verbs. The second group of verbs, those labeled as *frighten* verbs, have a marked theta role assignment with *theme* being assigned to a derived surface external argument, and *experiencer* to the other underlying internal argument, which, at the surface level, is the only internal argument. So the generalization is that the *frighten* type psych verbs lack underlying external arguments.

As has been done, I will refer to psych verbs that have *experiencer* external arguments as *fear* verbs, and psych verbs that have *theme* external arguments as *frighten* verbs. Examples of Turkish psych verbs are given below:

(3a)  
*Fear* type:

- kork-  'fear'
- ürk-  'be scared of'
- heyecanlan-  'be excited'
- ilgilen-  'be interested'
- sevin-  'be pleased'

Bu haber-e  sevin-di-m  
this news-dat  delighted-pa-1sg  
'I am pleased at this news.'

(3b)  
*Frighten* type:

- korkut-  'frighten'
- ürküt-  'scare'
- heyecanlandir-  'excite'
- ilgilendir-  'interest'
- sevindir-  'please'

Bu haber-Ø  ben-i sevindir-di-Ø  
this news-nom  I-acc  please-pa-3sg  
'This news pleased me.'

A morphological analysis of the verbs in (3b) indicates that they are derived from the verbs in (3a) by causativization. This is shown in (4):

(4)  
*Fear type*  
*Frighten type*

- kork-  kork-ut-  
  'fear'  'frighten'
- ürk-  ürk-üt  
  'be scared of'  'scare'
- heyecanlan-  heyecanlan-dir  
  'be excited'  'excite'
- ilgilen-  ilgilen-dir-  
  'be interested'  'interest'
- sevin-  sevin-dir-  
  'be pleased'  'please'
We expect the *fear* type verbs to causativize. They have underlying external arguments, and along with Zubizeretta, Marantz and Williams, I am assuming that causativization applies to verbs that have external arguments. I am also assuming that causativization is a process that internalizes an external argument while adding a new external argument. This is the correct analysis of causativization for intransitive and transitive verbs other than psych verbs, but causativization works differently for psych verbs, at least in Turkish. When causativized, the external arguments of the *fear* type psych verbs become the internal arguments of the *frighten* type psych verbs, and the internal arguments become the external arguments. I assume that this process is different from the NP movement of a theme argument in some sort of double object structure of Italian psych verbs (Belletti and Rizzi, 1988). Assuming that the above is an accurate description of causativization and the structure that it derives, we conclude that Turkish *frighten* type psych verbs will have external arguments. Therefore, in Turkish, the *frighten* type psych verbs differ from their Italian and English counterparts by having external arguments. Thus, we can conclude that psych verbs in Turkish do not exhibit any structural differences in having or not having external arguments, since both types of psych verbs have external arguments. Therefore, they are expected to behave similarly in all operations that make reference to the structure of the verb. That is to say, if nominalization is a purely syntactic operation, all verbs with similar structures should behave similarly in undergoing the nominalization process. So, if agentive nominalization is to be accounted for structurally, applying to all verbs with external arguments, then all psych verbs in Turkish should undergo agentive nominalization.

First let us consider the *fear* type psych verbs, that have an *experiencer* external argument. As shown in (5a) agentive nominals derived from *fear* type psych verbs are ill-formed:

(5a)  
*Fear* type:  

<table>
<thead>
<tr>
<th>verb</th>
<th>nominals</th>
</tr>
</thead>
<tbody>
<tr>
<td>sevin-</td>
<td>*sevin-ici</td>
</tr>
<tr>
<td>kork-</td>
<td>*kork-ucu</td>
</tr>
<tr>
<td>*pleaser</td>
<td></td>
</tr>
<tr>
<td>*pleaser</td>
<td></td>
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</tbody>
</table>

As shown in (5b), the same observation is also valid for *frighten* type verbs:

(5b)  
*Frighten* type:

<table>
<thead>
<tr>
<th>verb</th>
<th>nominals</th>
</tr>
</thead>
<tbody>
<tr>
<td>korkut-</td>
<td>*korkut-ucu</td>
</tr>
<tr>
<td>sevindir-</td>
<td>*sevindir-ici</td>
</tr>
<tr>
<td>*frightener</td>
<td></td>
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<tr>
<td>*frightener</td>
<td></td>
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<tr>
<td>*pleaser</td>
<td></td>
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<td>*pleaser</td>
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</table>

Our conclusion is that psych verbs in Turkish do not undergo agentive nominalization. Therefore, we cannot account for the ungrammatical forms in (5) if the generalization that deverbal agentive nominalization should make reference to argument structure only is correct. In Turkish, all psych verbs systematically fail nominalization via agentive suffixation, although they all have external arguments. Therefore, to account for the Turkish data I propose a thematic analysis. If we adopt a thematic analysis stating that Turkish agentive suffixes select verbs with *agent* external arguments we can systematically account for both the grammatical and ungrammatical agentive deverbal nominals in Turkish. Such an analysis will exclude all verbs that do not have *agent* arguments from being bases for agentive nominalization. One type of psych verb has *experiencer* external arguments, and the other type has *theme* external arguments, but neither type of psych
verb has agent external arguments. Thus the thematic analysis explains why they cannot form bases for agentive nominalization.

In this section of the paper, I examine a thematic account of the derivation of instrumental nominals. First I identify and account for two types of instrumental nominals in Turkish. These nominals are labelled as Type I and Type II instrumentals. The former inherits a verb's argument structure and the latter does not. This structural difference is seen in possessive compounds where only Type I instrumentals can have the internal argument of a verb as a nonhead.

Examples of both types of nominals are given in (6) as are the sentence equivalents of the corresponding well-formed (6c) and ill-formed (6f) possessive compounds:

Type I

(6a)  
sil-: 'erase/clean/wipe'
   -gi: 'instrumental' (ins)
   sil-gi: 'eraser'

(6b)  
Ali-Ø  mürekkeb-i  sil-di-Ø
   ali-nom  ink-acc  wipe-pa-3sg
   'Ali wiped the (spot of) ink.'

(6c)  
mürekkeb  sil-gi-si
   ink  erase-ins-3spos
   'ink eraser'

Type II

(6d)  
taş-: 'carry/transport'
   -t: instrumental (ins)
   taşi-t: 'vehicle'

(6e)  
möble-yi  taşi-di-k
   furniture-acc  carry-pa-1pl
   'We carried the furniture'

(6f)  
*möble  taşi-t-i
   furniture  carry-ins-3spos
   'furniture vehicle'

The ungrammaticality of (6f) might suggest that Type II instrumentals do not head possessive compounds at all. As indicated in (7), however, instrumentals of this type are able to head possessive compounds provided that the nonhead is not an argument of the verb:

(7)  
kara  taşi-t-i
   land  carry-ins-3spos
   'any vehicle that is used on land'

Considering (6f) and (7) together, then, the correct generalization apparently is that Type II instrumentals cannot head possessive compounds if the verb has an internal argument.

Both types of instrumental nominals exhibit distinct structural differences with respect to their ability to inherit the argument structure of the verb. I propose to account for the derivation of each type by different principles. Let us first consider the derivation of Type I instrumentals. The external arguments of the verbs that are selected for Type I instrumental
nominals alternate between having *agent* and *instrument* theta roles. That is, the instrument argument of the verb alternates between internal, as shown in (8a) and external, as shown in (8b):

(8a) Internal instrument argument:

\[
\begin{align*}
\text{Ali-Ø} & \quad \text{mürekkeb-i} & \quad \text{bez-le} & \quad \text{sil-di-Ø} \\
\text{ali-nom} & \quad \text{ink-acc} & \quad \text{cloth-with} & \quad \text{wipe-pa-3sg}
\end{align*}
\]

'Ali wiped the ink with cloth'

(8b) External instrument argument:

\[
\begin{align*}
\text{Bez-Ø} & \quad \text{mürekkeb-i} & \quad \text{sil-di-Ø} \\
\text{cloth-nom} & \quad \text{ink-acc} & \quad \text{wipe-pa-3sg}
\end{align*}
\]

'The cloth wiped the ink.'

I propose that Type I instrumentals are derived by suffixes that select an instrument argument of the verb. When this instrument argument is the external argument, the internal arguments of the verb are inherited by the derived nominal. The question of what happens if the internal instrument argument is selected, and whether there are there any structural and/or semantic tests to determine whether it is the external or the internal instrument argument that is selected, will be addressed in a later section of this paper.

Now let us turn to Type II instrumental nominals. I propose that Type II nominals are derived only from verbs that have a verb internal instrument as shown in (9). (9) shows that the verb *tasi*- 'carry' does not have an external argument with alternating *agent* and *instrument* theta roles:

(9a) Internal instrument argument:

\[
\begin{align*}
\text{Möble-yi} & \quad \text{kamyon-la} & \quad \text{tasi-di-k} \\
\text{furniture-acc} & \quad \text{truck-with} & \quad \text{carry-pa-1pl}
\end{align*}
\]

'We carried the furniture in the truck.'

(9b) External instrument argument:

\[
\begin{align*}
\text{*Kamyon-Ø} & \quad \text{möble-yi} & \quad \text{tasi-di-Ø} \\
\text{truck-nom} & \quad \text{furniture-acc} & \quad \text{carry-pa-3sg}
\end{align*}
\]

'The truck carried the furniture.'

The ungrammaticality of (9b) shows that the only instrument argument that the verb has is internal. The derived nominal does not inherit the theme argument of the verb, so this argument cannot be the nonhead of a possessive compound, as was shown in (6f), repeated here as (10):

(10) *möble tasi-t-i*  

\[
\begin{align*}
\text{furniture} & \quad \text{carry-ins-3spos} \\
\end{align*}
\]

'furniture vehicle'

Why is this so? The (Revised)^3 Thematic Inheritance Principle (cf. Randal, 1984) predicts exactly this result:
(11). Revised Thematic Inheritance Principle:

"A category changing inheritance operation which blocks the assignment of a verb internal theta role, blocks the assignment of all theta roles lower on the Theta Hierarchy."

Deverbal derivation, a category changing operation, blocks the assignment of the instrument theta role. Once the assignment of a theta role, i.e. instrument is blocked, the assignment of a theta role lower in rank, i.e. theme is also blocked. Any argument whose theta role cannot be assigned cannot be inherited by the derived nominal. With a thematic hierarchy that ranks the instrument theta role higher than the theme theta role we can account for the ill-formed compound in (10).

To summarize, I have proposed that in Turkish, we have to recognize two distinct derivations for instrumental deverbal nominals. Although both types of suffixes select the argument with the instrument theta role, the verbs differ with respect to the mapping of this theta role onto an argument. One set of verbs have alternating external and internal instrument arguments, and the second set of verbs have only internal instrument arguments. A purely thematic analysis, such as the one that I have proposed to account for the derivation of agentive nominals in the first section of this paper, predicts that both types of instrumental nominals will be derived from verbs with alternating instrument arguments such as sil- 'clean/erase/wipe' shown in (7a-c). In other words, a thematic analysis predicts that from sil- we should be able to derive both types of instrumental nominals: the ones that inherit the argument structure of the verb, and the ones that do not inherit the argument structure of the verb. Structurally we cannot test this claim in the form of possessive compounds, because we will always have the well-formed compounds headed by the nominals derived from external instrument arguments as shown in (7c). There are no semantic tests that I know of that will determine the difference between the two types of instrumentals. In the absence of any structural or semantic tests we may conclude that a purely thematic analysis accounts for the derivation of deverbal nominals. If all Type I suffixes select verbs with alternating instrument arguments, and/or if all Type II suffixes select verbs with internal instrument arguments, the thematic analysis would be the correct analysis. A closer study of Turkish data shows that not all Type II nominals are derived from verbs with only verb internal instrument arguments. Tik- 'fill/clog/stuff' is a verb that has alternating instrument arguments. In (12a) the instrument argument is external, and in (12b) it is internal:

(12a). Bez-Ø musluğa tika-di-Ø
cloth-nom sink-acc clog-pa-3sg 'The cloth clogged the sink.'

(12b). Ali-Ø musluğa bez-le tika-di-Ø
ali-nom pipe-acc cloth-with fill-pa-3sg 'Ali filled the sink with cloth.'

From this verb only Type II instrumentals are derived:

(13a) tika-i 'stopper'
(13b) *tika-gi 'stopper'

We see that tikac is a Type II instrumental, because a possessive compound with the theme argument of the verb as the non-head is ungrammatical:
(14).  

*musluk  tika-c-i  
sink  clog-ins-3spos  
'plug for a sink'

We can derive a Type II instrumental from the verb tika- only if both structural and thematic information are made available to the suffix. Both Type I and Type II instrumental suffixes select the instrument argument of the verb, but this argument has to be external for Type I suffixes and internal for Type II suffixes. If structural information is not available for -Ac 5 (the suffix in (13a) there is nothing to prevent it from deriving a Type I instrumental nominal from a verb like tika- which has an alternating external and internal instrument argument. Therefore, I claim that both structural and thematic selectional restrictions should be available to the suffix. The structural information is redundant for agentic affixes, because an agent theta role can only be mapped onto the external argument. On the other hand the structural information is necessary for affixes in the case of the verbs that can map the same theta role onto more than one argument.

To conclude, deverbal affixes have to refer both to the argument structure and the theta grid of the base verb.

NOTES

1 Unfortunately, the terminology is not consistent throughout the literature. Burzio (1981) calls these verbs "ergative verbs". I will be using the terminology proposed by Perlmutter, thus unergative for verbs which have underlying external arguments and unaccusative for verbs which lack underlying external arguments.

2 Sproat establishes an actor theta role which covers both agent and instrument theta roles.

3 Randall's (1984) principle is revised to clearly indicate that this principle applies the verb internal arguments only.

4 There is not a universally accepted thematic hierarchy. I am assuming the thematic hierarchy which is proposed by Jackendoff (1972) which ranks theme as the least prominent theta role.

5 /A/ represents all low vowels which are subject to vowel harmony rules. This vowel is deleted when the stem has a final vowel.

References

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