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**İNGİLİZCE ÖĞRENMEKTE OLAN TÜRK ÖĞRENCİLERİN KELİMELERİNİN
BİÇİMBİLİMSEL YAPILARININ İŞLENMESİ**
*EXPLORING MORPHOLOGICAL PROCESSING OF WORDS BY TURKISH LEARNERS OF
ENGLISH*

Eda DURUK*

Gül DURMUŞOĞLU KÖSE**

Öz

Günümüze kadar yapılmış olan çalışmalar ana dil ediniminde düzenli kelimelerin bileşik adlarda çoğul olarak kullanılmadığını, diğer taraftan ise düzensiz kelimelerin çoğul olarak kullanıldığını göstermiştir. Mevcut çalışmanın amacı bu konuyu ikinci dil olarak İngilizce ediniminde araştırmaktır. Çalışma kuramsal temelini bileşik adlarda düzenli kelimelerin çoğul hallerinin getirilemeyeceğini öngören İkili Mekanizma Modeli'ne dayandırmaktadır. Anadilleri Türkçe ve İngilizce ikinci dil seviyeleri yüksek olan 80 kişiden İngilizce de bileşik adlarla ilgili bir yapı üretiminde bulunmaları istenmiştir. Elde edilen sonuçlar katılımcıların ürettikleri bileşik adlarda düzenli kelimelerin çoğul hallerinden daha çok düzensiz kelimelerin çoğul hallerini kullandıklarını göstermiştir. Diğer bir taraftan, farklı veri sunumu ve cevap şekilleri sağlandığında, dış faktörlerin de kelimelerin çoğul hallerinin kullanımını etkilediği sonucuna varılmıştır.

Anahtar Kelimeler: İkili Mekanizma Modeli, Biçimbilimsel Yapıların İşlenmesi, Yabancı Bir Olarak İngilizce.

Abstract

Studies conducted so far have revealed that L1 acquirers do not include regular plurals within their compounds, whereas they do include irregulars. The present study aims to further investigate the issue in L2 English acquisition. It bases its theoretical framework on Dual Mechanism Model which suggests that regular plural nouns cannot be attached to lexical compounds. 80 advanced Turkish learners of English as a Foreign Language (EFL) were required to generate novel compounds in English. The results indicated that participants more often used irregular plurals rather than regular plurals within their compounds. However, when different presentation and response modalities were provided, it was concluded that external factors also affect the number of plurals.

Keywords: Dual Mechanism Model, Morphological Processing, English as a Foreign Language.

Introduction:

Past research has investigated how regular and irregular plural nouns are acquired in English by applying compounding tasks. Results of these studies show that there is a difference between L1 and L2 learners.

* Instructor, Pamukkale University, School of Foreign Languages (e-mail: durukeda@gmail.com)

** Prof. Dr., Anadolu University, Department of Foreign Language Education

Gordon (1985) conducted a nominal compounding task, in which there were three groups. They were all native speakers, all of whom were between the ages of 4 and 6. As the stimuli, the researcher included regular nouns (e.g., rats-eater) and irregular nouns (e.g., mice-eater). The question type was *What do you call someone who eats X?* It was found that the percentage of singular nouns in regulars was 98%, whereas in irregulars it was 10%. Thus, Gordon concluded that even younger children could distinguish regular plurals from irregular plurals.

Similarly, Lardiere (1995) employed a lexical compounding experiment in which she tested 15 Spanish and 11 Chinese learners of English. The procedure used was similar to the one applied by Gordon (1985). The participants differentiated between regular and irregular nouns. L1 Chinese participants pluralized only 30% of the regular nouns, but pluralized 65% of the irregular ones. However, for her L1 Spanish participants, the percentages were not so much different from each other (90% of irregulars, and 73% of regulars).

Murphy (2000) also tested 100 adolescent French ESL learners and 15 native speaker control group. The participants responded to the oral questions in written form. In Murphy's study, the correct use of regular singular nouns for native speaker control group was 98%, and for L2 learners it was 55%. They omitted more regular plurals (55%) than irregular plurals (26%). Thus, they clearly treated regulars and irregulars differently.

Urano (2001) investigated whether Japanese learners of English produce regular plurals inside synthetic compounds and they process regular and irregular plurals differently when producing synthetic compounds. Nineteen native speakers of Japanese were included in the study. The stimuli were similar to the studies conducted by Gordon (1985) and Lardiere (1995), but each word appeared twice to increase the total number of items. It was found that although L2 learners seem to be insensitive to level-ordering, they may still know something about the difference between regular and irregular plurals.

Hayes, Smith and Murphy (2005) went one step further by examining external factors such as input and response modalities. They included 40 native speakers of English who were between the ages of 5 and 18 years. In the first group, 20 participants were shown pictorial stimuli and 10 of those participants were asked to produce compounds orally and the remaining 10 participants were expected to produce them in writing. In the second group, 20 participants had the stimuli read out to them and of these, 10 participants were asked to produce compounds orally and the other 10 participants were instructed to produce them in writing. They also found that regular and irregular plurals are treated in a different way. However, they added that the percentage of plurality increases in irregular plurals when it is the aural presentation mode. No existing studies to date, however, have examined the process of English Inflectional Morphology in Compounding by Turkish EFL Learners from a mixed design perspective.

Compounding and Plural Formation in English:

In English, Lexical compounding is a highly productive word formation process. Kırkıcı (2007: 7) states that "it involves the concatenation of lexical units to form compound word forms such as *Christmas card, press office, flat mate* etc., with the head element (i.e., *card, office, mate*) in final position and the modifying non-head element (i.e., *Christmas, press, flat*) in initial position".

As for the tendency in the construction of English lexical compounds, while irregular plural nouns may occur as non-head elements within compounds (e.g. *mice killer*), regular plural nouns generally do not (e.g. *keys ring, shoes seller*), even if the non-head referent is semantically plural as in *shoe seller*.

Finally, it could be claimed that English plural formation and compounding are two morphological processes that have contributed considerably to the development of models of language learning. The belief that "mice-eater" is acceptable in English while "rats-eater" is not

has led some researchers to make claims about the underlying constraints and mechanisms responsible for language learning. Dual Mechanism Model is one of these mechanisms which is discussed in the next section.

Dual Mechanism Model:

Dual-mechanism model (Pinker and Prince, 1992) describes two distinct systems, one for processing regulars and one for irregulars. As Murphy (2000: 162) states, “the regular system is computed by classic symbolic rules of grammar where a particular inflectional morpheme (e.g., plural [-s]) is attached to a particular stem [N] (e.g., cat + [-s] = cats)”. On the other hand, the irregular system is composed of memorized pairs of words (e.g., mouse-mice, goose-geese). An associative-learning mechanism was noted to mediate it and these pairs were claimed to be stored in an associative memory structure.

One of the predictions of the dual-mechanism model is that regularly inflected forms are computed on-line, whereas irregular forms are stored inflected in the lexicon. The dual mechanism model prohibits regular plurals in compounds, because regular affixation is said to occur on-line, and importantly, regularly inflected lexical items are not stored inflected in the lexicon. If they are not stored already inflected (as irregulars are), then they cannot serve as input to word-formation processes (such as compounding).

Method:

Design:

This experiment was a mixed design with one within-participants factor – type of noun (regular, irregular) and two between-group factors – mode of presentation (visual [V] or aural [A]) and mode of response (oral [O] or written [W]). The dependent variable was the number of plural nouns of each type that participants included in their compounds. 40 participants were shown pictorial stimuli and of these, 20 were asked to produce compounds orally and 20 in writing. The remaining 40 participants had the stimuli read out to them and of these, 20 were asked to produce compounds orally and 20 in writing (Hayes, Smith, & Murphy, 2005).

The research questions of the present study were listed as the following:

1. Do Turkish learners of English produce regular plurals inside synthetic compounds?
2. Do Turkish learners of English treat regular and irregular plurals differently when producing synthetic compounds?
3. Do Turkish learners of English treat regular and irregular plurals differently when mode of presentation (visual or aural) and mode of response (oral or written) are different?

Participants:

Participants are 80 undergraduate students in the Department of Foreign Language Education at Pamukkale University who took part in the study during 2010- Spring semester. All were native Turkish speakers and had been educated in Turkey continuously between the ages of 6 and 23 years. They were from high-proficiency L2 level and were randomly selected from the undergraduate student population of Pamukkale University. They were all being trained to become English teachers. The group consisted of 20 male and 60 female participants, ranging in age from 18 to 23 (mean age: 20.5).

All participants were Junior students. All of them have two years of background at the same University. Due to the fact that they are students in the Department of Foreign Language Education, they received heavy hours of exposure to English which included various courses such as listening, reading, writing, speaking, methodology, translation, teaching young learners, etc.

All participants participated in the experiment on a voluntary basis. Following detailed explanations concerning the procedure of the experiment and the right to withdraw at any stage, each participant was required to fill out a participant consent form in English or Turkish.

Stimuli:

The study employed a deverbal synthetic compound elicitation task. Five uncountable mass nouns (rice, water, wine, cheese and grass) were used to train participants and familiarize them with the task. The test stimuli consisted of the seven irregular nouns that occur frequently in English and seven semantically matched regular nouns (Hayes et al., 2005; Murphy, 2000; Lardiere, 1995; Gordon, 1985). Table 1 shows the full list of test stimuli used.

Table 1: List of words used as stimuli in the experiment

Irregular nouns	Regular nouns	“Other” nouns
• Child	• Baby	• Clothes
• Mouse	• Cat	• People
• Tooth	• Bone	• Pants
• Foot	• Shoe	• Fish
• Man	• Student	• Sheep
• Woman	• Dress	• scissors
• goose	• animal	

The fact that there are only seven frequently occurring irregular plurals in English limited the number of items that could be tested in this experiment. Frequency counts (Kucera & Francis, 1967) for each of the irregular nouns are shown in Table 2.

Table 2: Frequency of use of nouns (Kucera & Francis, 1967; cited in Hayes et al., 2005)

Irregular plural nouns		
Noun	Plural frequency	Percentage use in plural form*
Men	752	26
Children	346	36
Feet	283	44
Women	184	28
Teeth	102	45
Mice	9	31
Geese	3	30
Category mean	239.85	34.28

*Percentage use in plural form refers to the proportion of times that the noun is used in the plural form out of all times that the noun is used in singular and plural form in Kucera and Francis (1967).

Given that the study is primarily concerned with the differences between regular and irregular nouns, the stimuli in the “other” category provided in Table 1 were included as a form of “distractor” item. Thus, they were not included in the analyses. For pictorial presentation, the pictures were piloted to ensure that they elicited the intended response.

Procedure:

Participants were tested individually in a silent room. As in Lardiere (1995), Murphy (2000), and Kırkıcı (2007), prior to the actual experiment, each participant went through a training phase. A preliminary briefing included at the beginning and participants were told that the experiment would involve putting two separate words together to form a new word. They were informed that they would be asked to make up compound words that described someone performing a particular task.

Similarly, following Murphy (2000) and Kırkıcı (2007) the participants were asked to define orally five compounds (*can-opener, taxi-driver, stamp-collector, dish-washer, story-teller*) either in English or Turkish. After completing this task, the participants were familiarized with the compounding task as in Murphy (2000) by asking them to produce compounds using mass nouns. The reason for using mass nouns in the practice phase was to prevent the participants from guessing that the actual focus was on compound-internal inflection. They were given 5 mass nouns and asked to produce the compound in response to the experimenter's question. The full list of the stimuli used in the training phase is as follows:

What do you call someone who... sells rice?
cuts grass?
drinks water?
loves wine?
eats cheese?

In the visual conditions, participants were shown pictures of five training nouns and asked to produce a compound in response to the experimenter's questions. For example, the experimenter showed a picture of water and asked, "What do you call someone who drinks this?" and the participants were to respond, "A water drinker".

As for the aural conditions, the experimenter asked the participants, "What do you call someone who drinks water?" and again participants were to respond, "A water drinker". On the rare occasion that a participant did not produce the appropriate compound, the experimenter provided further examples until the participant understood the form of compound that was required.

In the last stage of the training phase, as in Lardiere (1995) and Kırkıcı (2007) participants were presented with a list of all individual non-compound words that would eventually be used to construct the experimental items out of context and were asked to point out unfamiliar ones. However, it turned out to be unnecessary to go through any kind of teaching or familiarisation procedure because none of the experimental items was reported to be unfamiliar by the participants.

After the participants had completed the training session, they moved on to the test questions that were delivered in exactly the same way. Participants in the oral response conditions were asked to speak clearly. Participants in the written response conditions were asked to write their responses on the response sheet with which they had been provided. In the test questions, the 14 nouns were presented in their plural forms, as had been the case in previous studies. The order of the 14 test items was randomized for each participant. Each of the questions was read out twice by the experimenter. Similar to Lardiere (1995), Murphy (2000), and Kırkıcı (2007), the verbs in the stimulus questions were varied so that participants would not realise that the main point of the task was to monitor their pluralisation performance within compounds.

Results:

To investigate the frequency of regular plurals in general, the corresponding words (baby, cat, bone, shoe, student, dress, animal) were analyzed. The frequency of each word is given in Table 3.

Table 3: The frequency of each regular item used in the study. (Out of 80 instances)

Frequency	baby	cat	bone	shoe	student	dress	animal
Singular	78	72	60	40	56	80	76
Plural	2	8	20	40	24	0	4

To examine whether the regular and irregular plurals were treated differently, the frequency of seven semantically matched irregular nouns (child, mouse, tooth, foot, man, woman, goose) was further analyzed. The findings are provided in Table 4.

Table 4: The frequency of each irregular item used in the study. (Out of 80 instances)

Frequency	child	mouse	tooth	foot	man	woman	goose
Singular	26	40	20	32	34	28	32
Plural	54	40	60	48	46	52	48

The analysis of participants' responses revealed that regular nouns were not frequently pluralized within compounds, but were instead used in their singular forms generally. The regular items with the highest plural frequency within compounds were *shoe* (40/80 instances), *student* (24/80 instances) and *bone* (20/80 instances). On the other hand, irregular nouns were used in their plural forms higher than in their singular ones. Similarly, the irregular items which were most often used in their plural form within compounds were *tooth* (60/80 instances), *child* (54/80 instances) and *woman* (52/80 instances).

It was found that the difference between responses to regular and irregular items was significant ($F(1, 22) = 69.118, p < .0001$), which means that overall advanced Turkish EFL learners dissociated between regular and irregular items, generally having tendency to use regular singular and irregular plural nouns within their compounds.

One focus of the study was to determine whether there were differences in the number of regular and irregular plurals included in compounds, specifically when different presentation and response modalities were adopted. The percentage of regular and irregular plurals in the two different presentation and response modalities are given in Table 5.

Table 5: The percentage of regular and irregular plurals included in compounds for seven regular and seven irregular plurals in the four conditions.

The percentage of...	Pictorial Stimuli		Aural Stimuli	
	Regular Plurals	Irregular Plurals	Regular Plurals	Irregular Plurals
Written responses	12%	30%	13%	58%
Oral responses	5%	31%	19%	55%

It can be inferred from Table 5 that there are important differences among the the groups when regulars and irregulars are compared. Moreover, when the two categories of irregular plurals are considered, it is clear that they are not the same. The irregular plurals of aural stimuli are higher than the ones of pictorial stimuli.

Discussion:

The first research question investigated whether Turkish learners of English produce regular plurals inside synthetic compounds. The frequency of regular plurals in general are listed as follows; *shoe*: 40/80, *student*: 24/80, *bone*: 20/80, *cat*: 8/80, *animal*: 4/80, *baby*: 2/80, *dress*: 0/80. Thus, the results of the compounding task suggest that L1 Turkish high proficiency learners use plurals much fewer than singulars when the regular nouns are concerned. The findings support the study of Urano (2001), in which synthetic noun compounds were elicited from 19 Japanese adult learners of English. The researcher (2001) also detected that with regular nouns, the participants produced the plural nouns 43% of the time.

The next research question sought to answer whether Turkish learners of English treat regular and irregular plurals differently when producing synthetic compounds. The data obtained revealed that regular nouns were not often pluralized within compounds, but were instead used in their singular forms more frequently. Irregular nouns, on the other hand, were used in their plural forms higher than in their singular forms. The findings verified the earlier study of Kırkıcı (2007). He also indicated that L1 speakers of English and Turkish EFL learners dissociated between regular and irregular nouns in the production of English lexical compounds. However, it is important to note that, as mentioned before, Dual Mechanism Model predicts regular plural nouns cannot be attached to lexical compounds. Such a distinction was not found in the responses of the participants who produced regular plural nouns within their compounds.

The last research question asked whether Turkish learners of English treat regular and irregular plurals differently when mode of presentation (visual or aural) and mode of response (oral or written) are different. Varying response modality had no effect on the number of regular or irregular plurals included in compounds. However, different presentation modalities affected the inclusion of irregular but not regular plurals in compounds. The irregular plurals of aural stimuli are higher than the ones of pictorial stimuli. These findings are in parallel with those of Hayes et al. (2005). They also concluded that external factors such as presentation modalities affect the number of plurals in irregular plural nouns.

Conclusion:

In conclusion, the findings of the present study reveal that Turkish EFL learners make distinction between regular plurals and irregular plurals within their compounds. However the predictions of Dual Mechanism Model were not completely verified as participants also produced regular plural nouns within their compounds. It was also concluded that different presentation modalities affect the inclusion of irregular plurals in compounds. The participants in the present study were all from advanced level of proficiency and they were all Turkish learners of English being exposed to classroom-based L2 exposure. Thus, it is hoped that future research will examine learners from various proficiency levels and learners from different L1 backgrounds.

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