ACQUISITION OF VERBS AND ARGUMENT STRUCTURES IN TURKISH

Meryem ÖZDEMİR-YILMAZER
Hasan Çağlar BAŞOL

Abstract
This study aims to investigate how Turkish children analyze language input in the process of acquisition of verbs and argument structures in their first language. To this end, a task including 24 sentences was presented to 12 Turkish children whose ages range between 3,4 to 5,0. Out of these 24 sentences, 12 sentences included morphologically transitive verbs whereas the other 12 ones included lexically transitive verbs. Further, in the 12 sentences, objects of the verbs were presented with accusative case marker in different word orders. Moreover, the word order was intentionally modified in some sentences. The aim of the task was to elicit the sensitivity of Turkish children to causative morphology, accusative case marker, and word order in the acquisition of verbs and argument structures of Turkish. The results indicate that Turkish children use language-specific cues in the interpretation of verbs and their argument structures, which is causative morphology for Turkish. In addition, Turkish children appear to use semantic mechanism in order to interpret the argument structures of verbs in sentences with modified word order. All of these results support the view of Tomasello (1992) as children seem to acquire verbs and argument structures without the presence of innate ability, but through the interaction with input.

Keywords: Verb, argument structure, Turkish, acquisition of syntax, free word order

Introduction
In the adult speech, verbs are used as commonly as nouns; however, the first acquired lexical items in child’s speech are nouns, and nouns are used more frequently by children as compared to verbs (Gentner, 1978; Ekmekçi, 1979; Sofu, 1995, Türkay, 2005). Therefore, the scope of lexical item acquisition research in the literature has directed its focus to the acquisition of verbs and argument structures (Naigles at al., 1992). The question of how children learn verb meaning and appropriate argument structures of each verb has embodied in the literature with three main hypotheses which are semantic bootstrapping, syntactic bootstrapping and verb island hypothesis.

First of all, in an attempt to explain the acquisition of verbs and argument structures, semantic bootstrapping hypothesis asserts that children use semantic features to get evidence for the grammatical entities in the input (Pinker, 1984). In this hypothesis, learning of verb meaning is like labeling meanings of nouns. That is, a child acquiring verbs needs to map the semantic notions of the verb on her/his mental representation of...
that concept. In this mapping process, if an ambiguity occurs in any verb meaning, it would be resolved through more experience with the input. While semantic bootstrapping proceeds in verb acquisition through the mapping between concepts and meaning, Pinker (1989) indicates that the child has an innate ability to link syntactic knowledge with the semantic knowledge.

The semantic bootstrapping hypothesis asserting the way of mapping from semantic notions of verbs onto the mental representation of verbs is challenged by the syntactic bootstrapping hypothesis which alleges the reverse way of the mapping process. In this sense, syntactic bootstrapping suggests that the syntactic clues surrounding the verbs present a cue for the meaning of the verb (Gleitman, 1990; Landau & Gleitman, 1985). Gleitman (1990) argues against the semantic bootstrapping hypothesis by giving the situation of a blind child’s acquisition of meanings of the verbs in spite of the fact that s/he cannot see the specific context in which the action of the referred verb is enacted. Based on this argument, Gleitman (1990) suggests that the syntactic features such as the numbers of the noun phrase (NP) that a verb can have and the other syntactic elements co-occurring within the verb are informative for the meaning of the verb in the acquisition of verbs. In other words, different verbs have different features; hence, the child relies on the analysis of differences on the syntactic features of verbs in order to learn about verbs and their argument structures (Göksun et al., 2008).

The main difference between semantic bootstrapping and the syntactic bootstrapping hypothesis is the direction of the mapping process. That is, the way of acquisition being either from syntactic clues to semantic knowledge or from semantic notions to syntactic knowledge differentiates in these two hypotheses, and it remains as a matter of curiosity (Ketrez, 1999). Although these two hypotheses have different views on the direction of the mapping process, there are also some similarities between them. That is, both bootstrapping hypotheses argue that children have adult-like grammar, and each favors the mapping between syntactic argument structure and lexical semantic structure. Additionally, both of these hypotheses accept the presence of an innate ability to access an adult-like grammar. Regarding these similarities, both hypotheses acknowledge each other. For instance, Pinker (1984) states that syntactic information is also used by the child in the later development of verb acquisition. Similarly, Gleitman (1990) underlines that semantic information also plays a role in verb acquisition. In other words, according to these two hypotheses, both semantic and syntactic knowledge play a role in verb acquisition; however, the matter is how the child analyzes the language system in verb acquisition at the very outset (Pinker, 1984).

As being different from both of these above bootstrapping hypotheses, verb island hypothesis rejects the presence of an innate ability. According to verb island hypothesis, children acquire language in a gradual manner, beginning with concrete linguistic structures and access more abstract linguistic structures, which enable the children to have adult-like production of their language. In this process of accessing more abstract linguistic structures, cognitive development and social interaction of children work together (Tomasello & Brooks, 1999). Moreover, verb-island hypothesis asserts that there is no adult verb category in children. However, they learn about argument structure of a verb through experience. To put it differently, children organize the learned verbs with their island (argument structures) with the help of their experience with input. The data supporting the views of verb island hypothesis comes from the naturalistic and experimental data of Tomasello (2000). Tomasello (2000) examined early language development of his daughter and concluded that semantically similar verbs are used in only one type of sentence frame, which alludes that child’s first utterances are constrained in the discourse of adults. Furthermore, Tomasello and Brooks (1998) conducted a study which involves teaching children novel linguistic items and aimed to
find out what children do with them. The results indicated that children at 3-4 years of age could assimilate the novel linguistic items to the utterance that they did not hear in adult speech; however, 2-3 years old children cannot go beyond the novel use of the novel verbs in the syntax. This result revealing that younger children cannot use primarily used transitive verbs in the intransitive manner implies that they gradually develop an abstract linguistic competence which can be observed in the case of older children (Tomasello et al., 1997). In parallel with this claim, Theakston et al. (2001) suggest that the input exposed to children is the most important determinant of the children’s use of verb frame. Therefore, it can be concluded that experience with the input is more important determinant than the abstract grammatical knowledge (Theakston et al., 2001).

The studies in the literature compare these three hypotheses to understand the acquisition of verb and argument structure. For example, Naigles et al. (1992) found out that children use syntactic clues presented in the frame. For instance, when children are presented a sentence such as “the zebra goes to the lion,” the pre-schooler children follow the information included in the sentence frame while adults need to correct the sentence. Considering these results, Naigles et al. (1992) come up with the conclusion that the development of language proceeds from frame compliance to verb compliance and children use syntactic bootstrapping in verb acquisition.

Moreover, Lidz et al. (2003) conducted a study with children learning Kannada language, a Dravidian language spoken in south-western India. In this study, Lidz et al. (2003) investigate whether the number of noun phrases or the causative morphology plays a role in the verb acquisition. The results showed that the number of noun phrase helps the correct enactments of children, which shows the impact of universal properties of language in language acquisition. Parallel to this result, Lee and Naigles (2008) found out that children learning Mandarin Chinese extend verb meanings based on the number of noun phrases in the sentence. These results directly support the views of the syntactic bootstrapping hypothesis which asserts the presence of an abstract knowledge of the language in verb acquisition.

As it is discussed above, in an attempt to understand the learning process of verb meaning and argument structure, cross-linguistic studies were conducted in different languages around the world. As there are crosslinguistic variances among languages, structural characteristics of the languages were discussed (Kauschke, Lee & Lee, 2008). Among these languages, the Turkish language presents an attractive case for such an inquiry, as Turkish allows noun phrases with case markers, and the intransitive verbs can be changed to transitive ones with the help of the causative morphology. Moreover, a causative verb can be used on its own without noun phrases, but it still includes the meaning of agent and object. For instance, saying “getir”, (to bring) is acceptable without mentioning the agent and the object (Göksun et al., 2008). Therefore, it may be suggested that in Turkish language children use extralinguistic cues such as discourse in order to learn what the verb means. Also, the Turkish language has a free order syntax, which makes interchangeable use of subject and object acceptable. Therefore, while analyzing the input, the child needs to understand what is to be done and who does it by relying either on the accusative case marker if it is present or the discourse presented.

In the case of Turkish, Göksun et al. (2008) conducted a study investigating whether number of noun phrases, accusative case marker, and causative morphology lead to more causative enactments of children in an experiment including causative enactments of toys (which is a replication of the data collection method of Naigles et al. (1992) ). The results showed that both the number of noun phrases and - the presence of an accusative case marker influence the verb meaning process of children while causative morphology has a reverse effect on more causative enactments. That is, the lexically
transitive verbs were enacted more causatively than morphologically transitive verbs by children. This result supports the existence of language-general properties in verb acquisition which provides evidence for the syntactic bootstrapping in verb acquisition. Although this study assumes that Turkish children use syntactic cues in learning verbs meaning such as the number of NPs and accusative case marker, the case for the free order of NPs remains to be uninvestigated.

Another point of view to the verb acquisition of children is presented by Ketrez (1999) in her study with children acquiring Turkish. She observed that Turkish children either use verbs in frozen forms or base forms for both to the action and the state. To this end, Ketrez (1999) concluded that children do not have an adult-like verb category. This result may be challenged as there are language-specific features for each different language and there is no innate capability to make abstract mental representations. Further, Ketrez (1999) acknowledges semantic bootstrapping hypothesis, as she observes errors in instances where the subject of the action is inanimate. Therefore, Ketrez (1999) asserts that “The child’s perception of structures and the production of the argument structures of verbs are very much influenced by the semantic structures of the verbs” (p.129). On the other hand, Yapıcı (2008) conducted a study investigation argument structure acquisition of Turkish children based on the verb-island hypothesis. She revealed that Turkish children start with no overt arguments but end up with multiple arguments in their process of verb acquisition which is concluded to be parallel with the view of verb island hypothesis.

Taking these different views presented for the verb acquisition and the production of argument structure in the Turkish language, the present study aims to investigate whether Turkish children can detect the agent (subject) or the object correctly in both lexically transitive and morphologically transitive sentences. In other words, to what extent Turkish children are sensitive to the causative morphology in verb learning is aimed to be examined. Furthermore, the sensitivity of Turkish children to accusative case marker to get the meaning of the object is to be investigated. And finally, it is aimed to investigate whether the different order of the noun phrases regarding subject and object makes a matter for Turkish children to get the correct meaning of the verb. Hence, the research questions investigated in the present study are;

1- To what extent are Turkish children sensitive to causative morphology in verb learning?
2- To what extent are Turkish children sensitive to accusative case marker in verb learning?
3- To what extent are Turkish children sensitive to different word order in verb learning?

2. METHOD

2.1 Participants

12 Turkish monolingual children whose ages range between 3;4 to 5;0 participated in the study. All of the children were monolingual Turkish speakers and they all live in a monolingual environment. Out of these children, 8 of them are boys, and 4 of them are girls. The participants have been designated into three groups according to their ages. The first group includes four children whose ages range between 3;4 to 3;5 (3 boys one girl; M:3;4, SD:0,5). The second group includes four children whose ages range between 3;7 to 3;10 (3 boys one girl; M:3;9, SD:3,9). Lastly, the third group includes four children whose ages range between 4;9 to 5;0 (3 boys one girl; M:4;9, SD:0,5). Although it is not included as a variable in the present study, the socio-economic level of the children is over average; and all of them attend a daily kindergarten.
2.2 Data Collection Task

The task presented to the children in the data collection process includes 24 sentences. 12 of these sentences include Morphologically Transitive (MT) verbs; that is, the original form of the verb is intransitive, but it is derived to be transitive by adding a causative morpheme. For instance, the verb “düş-“ (to fall) is intransitive, but it is derived to be transitive “düşür-“ “to drop” by adding a causative morpheme “-Ir”. The morphological transitive verbs used in the task are “getir- (to bring); götür- (to take away), düşür- (to drop).” The sentences with these verbs were organized in four different forms. In the first form, the SOV syntax structure which is canonical word order of Turkish is presented with the accusative case marker on the object. This type of formation is labeled as NNaccV.

(1) Çocuk kitabı getirdi.
The child bring-ACC bring-3rdSIN PAST
The child brought the book.

In the second form, the word order is changed to be OSV, but the accusative case remains on the object. This type of formation is labeled as NaccNV.

(2) Oyuncağı anne getirdi.
The toy-ACC mother bring-3rdSIN PAST
Mother brought the toy.

The third form includes a word order of SOV again. In these sentences, the accusative case marker is optional; therefore, the accusative case marker is removed in this form. This type of formation is labeled as NNV (SOV).

(3) Anne pasta getirdi.
Mother the cake bring-3rdSIN PAST
Mother brought the cake.

In the fourth and the last form, the word order is presented as OSV, but the accusative case marker is removed in this form, as well. This type of formation is labeled as NNV (OSV).

(4) * Top baba getirdi.
Ball father bring-3rdSIN PAST
Father brought the ball.

The fourth form is semantically problematic as it may be interpreted as having SOV word order in the presence of a nominative case marker. But as “father” carries the properties of the agent, it is obvious in the context that, the agent is the father. As it is stated by Ketrez (1999), children have a tendency to map thematic role agent to the subject position, but in sentence 4, the agent is not in the subject position, that is why it is incorrect. (See Appendices for the full version of the task).

The same organization procedure of the sentence forms is followed for 3 Lexically Transitive (LT) verbs. These verbs are lexically transitive, and they do not include a causative morphology. These verbs are “cek- (to pull), tasi- (to carry), it- (to push).” Four forms [NNaccV, NaccNV, NNV (SOV), NNV (OSV)] are presented to the children in different discourses. The sentences chosen for the task are presented in Table 1 below.
Table 1.

The sentences included in data collection tool

<table>
<thead>
<tr>
<th></th>
<th>Lexically Transitive</th>
<th>Morphologically Transitive</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NAccV</strong></td>
<td>Çocuk ipi çekti. (Child rope-ACC pull-3rdSIN PAST)</td>
<td>Cocom kitabi getirdi. (Child book-ACC bring-3rdSIN PAST)</td>
</tr>
<tr>
<td></td>
<td>Child pulled the rope.</td>
<td>Child brought the book.</td>
</tr>
<tr>
<td></td>
<td>Dede sepeti taşıdı. (Grandfather basket-ACC carry-3rdSIN PAST)</td>
<td>Adam kediyi götürdü. (The man cat-ACC take away-3rdSIN PAST)</td>
</tr>
<tr>
<td></td>
<td>Grandfather carried the basket.</td>
<td>The man took away the cat.</td>
</tr>
<tr>
<td></td>
<td>Kurbağa arabayı itti. (Frog car-ACC push-3rdSIN PAST)</td>
<td>Abla bebeği düşürdü. (Elder-sister doll-ACC fall down-3rdSIN PAST)</td>
</tr>
<tr>
<td></td>
<td>Frog pushed the car.</td>
<td>Elder-sister fell down the doll.</td>
</tr>
<tr>
<td><strong>NaccNV</strong></td>
<td>Kağıdı öğretmen çekti. (Paper-ACC teacher pull-3rdSIN PAST)</td>
<td>Oyuncago anne getirdi. (Toy-ACC mother bring-3rdSIN PAST)</td>
</tr>
<tr>
<td></td>
<td>The teacher pulled the paper.</td>
<td>Mother brought the toy.</td>
</tr>
<tr>
<td></td>
<td>Çantayı abla taşıdı. (Bag-ACC elder-sister carry-3rdSIN PAST)</td>
<td>Kitabi kuz götürdü. (Book-ACC girl take away-3rdSIN PAST)</td>
</tr>
<tr>
<td></td>
<td>Elder-sister carried the bag.</td>
<td>The girl took away the book.</td>
</tr>
<tr>
<td></td>
<td>Dolabı arkadaş itti. (Cupboard-ACC friend push)</td>
<td>Bebeği abi düşürdü. (Doll-ACC elder-brother fall down-3rdSIN PAST)</td>
</tr>
<tr>
<td></td>
<td>A friend pushed the cupboard.</td>
<td>Elder-brother fell down the baby.</td>
</tr>
<tr>
<td><strong>NNV (SOV)</strong></td>
<td>Amca oyuncak çekti. (Uncle toy pull-3rdSIN PAST)</td>
<td>Anne pasta getirdi. (Mother cake bring-3rdSIN PAST)</td>
</tr>
<tr>
<td></td>
<td>Uncle pulled toy.</td>
<td>Mother brought cake.</td>
</tr>
<tr>
<td></td>
<td>Öğretmen boya taşıdı. (Teacher colour carry-3rdSIN PAST)</td>
<td>Abi bardak düşürdü. (Elder-brother glass fall down-3rdSIN PAST)</td>
</tr>
<tr>
<td></td>
<td>Teacher carried color.</td>
<td>Elder-brother fell down glass.</td>
</tr>
<tr>
<td></td>
<td>Kadın kapı itti. (The woman door push-3rdSIN PAST)</td>
<td>Bebek oyuncak götürdü. (Baby toy take away-3rdSIN PAST)</td>
</tr>
<tr>
<td></td>
<td>The woman pushed the door.</td>
<td>Baby took away toy.</td>
</tr>
<tr>
<td><strong>NNV (OSV)</strong></td>
<td>Araba arkadaş çekti. (Car friend full-3rdSIN PAST)</td>
<td>Top baba getirdi. (Ball father bring-3rdSIN PAST)</td>
</tr>
<tr>
<td></td>
<td>A friend pulled the car. (semantically)</td>
<td>Father brought ball. (semantically)</td>
</tr>
<tr>
<td></td>
<td>Fare köpek taşıdı. (Mouse dog carry-3rdSIN PAST)</td>
<td>Masa abla düşürdü. (Table elder-sister fall down-3rdSIN PAST)</td>
</tr>
<tr>
<td></td>
<td>Mouse carried the mouse. (semantically)</td>
<td>Elder-sister fell down the table. (semantically)</td>
</tr>
<tr>
<td></td>
<td>Pencere teyze itti. (Window aunt push-3rdSIN PAST)</td>
<td>Kedi dese götürdü. (Cat grandfather take away-3rdSIN PAST)</td>
</tr>
<tr>
<td></td>
<td>Aunt pushed the door. (semantically)</td>
<td>Grandfather took away the cat. (semantically)</td>
</tr>
</tbody>
</table>
2.3 Data Collection Procedure

In the data collection procedure, each sentence was presented to children through voice recording. After children had listened to each sentence, the researcher repeated the sentence, and the children were asked to repeat it to check their understanding. Upon being sure about child’s comprehension, two questions were asked successively to the child. The questions namely were, “Who did the action?”, and “What is done?”. The aim of directing these questions is to elicit children’s comprehension of the object and subject that verb selects. The questions were not asked in the same order for each sentence. Children were praised after their each answer no matter whether their answer is right or wrong. The children are video-recorded in a separate room only with the researcher.

2.4 Coding and Data Analysis Procedure

The answers of the children to the questions of “Who did the action?”, and “What is done?” were coded as “_1_” if the subject or the object of the verb was interpreted correctly by the children, and they were coded as “_0_” if the subject or the object of the verb was interpreted incorrectly. The answers that were not directly refer to the subject or the object of the verb were also coded as “_0_”. For instance, in the sentence:

Abi bardak düşürdü.

(Elder-brother glass fall down-3rdSIN PAST)

Elder-brother fell down the glass.

The child was asked “who fell down the glass?” firstly, and if the child selected “abi” (elder-brother), the answer was regarded as correct, as “abi” (elder brother) is the correct word for the subject position in this sentence. Hence, it was coded as _1_. However, if the child answered the question with the word “bardak” (glass), it is the word for the object position, and it is incorrect regarding the question. Hence it was coded as _0_.

The data was analyzed through descriptive analysis, and the results of the correct interpretation of argument structure of verbs in each form are presented for three age groups of the participants.

3. RESULTS AND DISCUSSION

The descriptive analysis was conducted to the data collected from 12 monolingual children of Turkish. As the research questions of the study address the extent of the presence of causative morphology, accusative case marker, and the free word order of Turkish, the results presented in this part will be divided into three categories. Namely, the parts will be the sensitivity to causative morphology, the sensitivity to accusative case marker, and finally the sensitivity to free word order of Turkish.

3.1 The sensitivity to causative morphology

In order to investigate whether Turkish children are sensitive to causative morphology to learn verb meaning and production of argument structure, children were presented 12 sentences with MT verbs and 12 sentences with LT verbs. Then, the children asked to answer “what is to be done” and “who is to do” for each sentence with these verbs.

In the data analysis process, the mean rank of the correct answers of children was calculated for MT verbs and LT verbs. The results are shown in Table 2. The results are also shown in bar graphic in Figure 1.
Table 2

The Percentage of Correct Interpretation of Children

<table>
<thead>
<tr>
<th></th>
<th>MTV</th>
<th>LTV</th>
</tr>
</thead>
<tbody>
<tr>
<td>3;0-3;6</td>
<td>92%</td>
<td>86%</td>
</tr>
<tr>
<td>3;7-4;0</td>
<td>90%</td>
<td>81%</td>
</tr>
<tr>
<td>4;1-5;0</td>
<td>89%</td>
<td>75%</td>
</tr>
</tbody>
</table>

As it is clear both at Table 2 and at Figure 1, children of 3;0-3;6 years of age interpret the correct argument structure at a level of 92% with MT verbs as compared to the 86% with LT verbs. Further, children of 3;7-4;0 years of age interpret the correct argument structure at 90% with MT verbs while they do that at 81% with LT verbs. Lastly, children of 4;1-5;0 years of age interpret the correct argument structure at 89% with MT verbs as compared to 75% with LT verbs.

These results of the descriptive analysis show that both young children and older ones are successful in interpreting the verb arguments correctly in MT verbs; though, older children are slightly more successful. Regarding LT verbs, children are less successful in interpreting verb agreement structure as compared to MT verbs. Further, younger children are found to be more successful with LT verbs than older ones. This result contradicts with the results of Göksun et al. (2008) as they found out that children enact more causatively with LT verbs than with MT verbs indicating that children are not so sensitive to language-specific cues, which is causative morphology in the Turkish case. However, the result of the present study shows that language-specific properties of language play a role in the acquisition of verb meaning and production of argument structure. This kind of conclusion disaffirms the results of Lidz et al. (2003) as they assured that language-general properties play greater role in verb acquisition. Overall, the results of the present study imply that children also use language-specific cues in interpreting verb meaning and argument structure which supports the views of the verb-island hypothesis of Tomasello (1992).
Acquisition of Verbs and Argument Structures in Turkish

3.2 The sensitivity to accusative case marker

In an attempt to investigate the sensitivity of Turkish children to the accusative case marker in order to learn verb meaning and argument structure of verb, descriptive analysis was employed. Children’s sensitivity to accusative case marker was investigated both in SOV and OSV word order. The percentage of correct interpretations of argument structures, subject and object of the sentence, are considered in both SOaccV and SOV sentences. The same investigation is issued in OaccSV and OSV sentences. The results are shown in Table 3, and the results are presented with bar graphic in Figure 2.

Table 3
The Percentage of Correct Interpretation of Children

<table>
<thead>
<tr>
<th>Age Group</th>
<th>SOaccV</th>
<th>SOV</th>
<th>OaccSV</th>
<th>OSV</th>
</tr>
</thead>
<tbody>
<tr>
<td>3;0-3;6</td>
<td>90%</td>
<td>90%</td>
<td>96%</td>
<td>77%</td>
</tr>
<tr>
<td>3;6-4;0</td>
<td>90%</td>
<td>90%</td>
<td>96%</td>
<td>77%</td>
</tr>
<tr>
<td>4;1-5;0</td>
<td>96%</td>
<td>90%</td>
<td>88%</td>
<td>69%</td>
</tr>
</tbody>
</table>

Figure 2. Line chart for correct interpretation of children

As it is evident both at Table 3 and at Figure 2, Turkish children become more sensitive to the accusative case marker only in OSV word order. In all age groups, the least correct interpretation of both subject and object is found with OSV word order with nominal case marker. However, there is hardly any difference that accusative case marker creates in SOV word order both with accusative case marker and nominal case marker. The results may be interpreted as Turkish children do not rely on accusative case marker when the sentence is presented in the canonical word order of Turkish. However, if there is a case in which the interpretation of verb is problematic like OSV word order, children are looking for the accusative case marker to understand the meaning of the verb and its argument structure. The indifference to accusative case marker in SVO word order seems to contradict with the results of Göksun et al. (2008) as they assume that Turkish
children use morphological bootstrapping as well in the process of verb acquisition. However, as Göksun et al. (2008) did not control the word order variable, it was not clear in their study whether sensitivity to accusative case marker is dependent on word order or not. Although the traces of morphological bootstrapping seem in the results of the present study with OSV order, it is significant to take the word order into consideration to conclude that Turkish children use morphological cues to learn about verbs. If word order is more significant than the use of accusative case marker on the interpretation of verbs by Turkish children, it will be more relevant to talk about language-specific properties in verb learning. Because it is free order property which makes Turkish different from other languages such as English and French.

3.3 The sensitivity to word order

As mentioned above, Turkish is an elliptical language. Moreover, it has a free word order; that is, while the verb is generally at the final position, the subject and object can be used in interchangeable positions. While the general word order of Turkish is SOV, it is also acceptable to use OSV or VSO word order in exceptional circumstances for pragmatic purposes. In the literature, the studies (Lidz et al., 2003; Lee & Naigles, 2008, Göksun et al., 2008) generally cover the number of NPs to have an idea about the verb acquisition of children. However, the position of NPs in subject and object position has not been sufficiently studied in languages with free word order. To this end, in this study, the influence of word order on Turkish children’s correct interpretations of verbs and their argument structures is investigated. Considering this aim, Turkish monolingual children are presented with 12 sentences with SVO word order and 12 sentences with OSV word order. After the presentation of each sentence, children are asked about the subject with the help of the question “Who did the action?” and object by asking “What is done?”. The interpretation of children about the subject and object is analyzed through descriptive analysis. The results are presented in Table 4, and it is graphically shown in Figure 3.

Table 4

<table>
<thead>
<tr>
<th></th>
<th>SOV</th>
<th>OSV</th>
</tr>
</thead>
<tbody>
<tr>
<td>3;0-3;6</td>
<td>90%</td>
<td>86%</td>
</tr>
<tr>
<td>3;7-4;0</td>
<td>92%</td>
<td>81%</td>
</tr>
<tr>
<td>4;1-5;0</td>
<td>93%</td>
<td>78%</td>
</tr>
</tbody>
</table>

Figure 3. Line chart for correct interpretation of children

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As it can be seen at Table 4 and Figure 3, children in all age groups are successful at their interpretations of subjects and objects that the verbs refer to. However, the children in all age groups make more successful interpretations for SOV word order as compared with OSV one. It is remarkable that younger children interpret subject and object of the verb in OSV word order, and the success has declined for older children. This result may suggest that younger children are more sensitive to the meaning of the words in the sentence. For example, in an OSV sentence,

(4) *Top baba getirdi.
Ball father bring-3rdSIN PAST
Father brought the ball. (semantically)

all children in the oldest age group interpreted the subject as “ball” and the object as “father” whereas younger children detected that “father” is animate, and it is the subject of the verb. In another case, in the data collection process, when Ulaş (3;4) was presented with the sentence;

(5) *Fare köpek taşıdı.
Mouse dog carry-3rdSIN PAST
The dog carried the mouse. (semantically)

He interpreted the subject as “mouse” and the object as “dog”; however, after answering the questions, he exclaimed as “How could a small mouse carry the big dog?”. This exclamation suggests that younger children get the meaning of the verb and the argument structures that the verb refers to by using discourse related cues. These results of the present study are in line with Ketrez (1999) who concludes that children do not have adult verb category, and they employ semantic mechanisms to learn verbs and produce argument structures. This kind of conclusion confirms the results of Tomasello (1992) who suggests that children learn verb meaning in semantic discourse in which they are presented and build their own abstract mental representation of verbs rather than having an innate ability to map between syntax and semantic properties of the verbs. As it is seen in the nature of Turkish, when the salient places of NPs are replaced with the help of the free order nature of Turkish, children rely more on semantics than syntax which contradicts with the syntactic bootstrapping hypothesis (Gleitman, 1990).

4. CONCLUSION

Different views have tried to explain how children analyze the input to acquire the syntax of their language so far. It has been debated whether children use syntactic cues around the verbs or the semantic properties the verbs have. Namely, both syntactic bootstrapping and semantic bootstrapping hypotheses have alleged that children have an adult like grammar and they map between syntactic cues and semantics. The difference between these two hypotheses is the direction of mapping, which is either from syntax to semantics or from semantics to syntax. On the other hand, a different view to the acquisition of syntax has been voiced by Tomasello as he argues that children do not have an innate adult grammar, but they access mental representation as results of their social interaction with the input and their cognitive development. To support each of these views, cross-linguistics studies (Lee & Naigles, 2008; Lidz et al., 2003) have been conducted with languages with different properties. Turkish is one of the languages that may provide a suitable case for such an investigation as it is an agglutinative language with many specific morphological properties. Moreover, the Turkish language has a free order syntax structure. Considering these language specific features of Turkish, it was aimed to investigate whether Turkish children are sensitive to causative morphology,
accusative case marker, and free word order of their language to learn verb meaning and argument structure in this study. To this end, 12 children whose ages range between 3;4 and 5;0 are presented 24 sentences. Half of these sentences include morphologically transitive verbs, and the other half includes lexically transitive verbs. Further, 12 of these sentences have SVO order while 12 of the have OSV order. In two different word orders, 6 of the sentences are presented with the accusative case on the object. After the presentation of each sentence, children are asked about “what is to be done” and “who is to do” to elicit their interpretation for subjects and objects that each verb refers to in sentences.

The results have shown that Turkish children are sensitive to the causative morphology of their language as they correctly interpret the argument structures of verbs more successfully with morphologically transitive verbs as compared with the lexically transitive ones. Moreover, accusative case marker seems to have no influence on children’s interpretation in SVO order, but they rely more on accusative case marker in OSV sentences. Such kind of result is concluded as word order matters more than accusative case morphology in verb learning and production of argument structures. When analyzed, it is found out that younger children do not rely on word order but meaning of the verbs while older children rely more on the salient word order.

All of these results appear to support the views of verb island hypothesis of Tomasello (1992) since Turkish children in this study seem to rely more on causative morphology which is a specific property of Turkish language. Therefore, it may be concluded that learners of each language construct their mental representation of verbs as they interact with the input. Also, the results of this study are in line with the results of Ketrez (1999) as she suggests that Turkish children use their semantic mechanism to get the meaning of the verb and argument structures.

The study is not without its limitation. Further studies should be conducted in order to understand early syntax acquisition of children. In a morphologically rich and an elliptic language like Turkish, similar studies should be conducted with more children. With the help of the rich population of the participants, statistical analysis can be employed to have a broader idea about how Turkish children analyze their input in early syntax acquisition.

References
Ekmeç, Ö. F. (1979). Acquisition of Turkish: A Longitudinal study on the early language development of a Turkish child. The University of Texas, Austin.
Similarities and variation in noun and verb acquisition: A crosslinguistic study of children learning German, Korean, and Turkish


### Appendix

**Sentences in Data Collection Task**

2. Oyuncağı anne getirdi. (Toy-ACC mother bring-3rdSIN PAST) Mother brought the toy.
3. Adam kediyi götürdü. (Man cat-ACC take away-3rdSIN PAST) The man took away the cat.
5. Abla bebeği düşürdü. (Elder-sister doll-ACC fall down-3rdSIN PAST) Elder-sister fell down the doll.
7. Çocuk iyi çekti. (Child rope-ACC pull-3rdSIN PAST) Child pulled the rope.
9. Dede sepeti taşıdı. (Grandfather basket-ACC carry-3rdSIN PAST) Grandfather carried the basket.
10. Çantayı abla taşıdı. (Bag-ACC elder-sister carry-3rdSIN PAST) Elder-sister carried the bag.
11. Kurbağa arabayı itti. (Frog car-ACC push-3rdSIN PAST) Frog pushed the car.
(13) Anne pasta getirdi. (Mother cake bring-3rdSIN PAST) Mother brought cake.
(14) Top baba getirdi. (Ball father bring-3rdSIN PAST) Father brought ball. (semantically)
(15) Bebek oyuncak götürdü. (Baby toy take away-3rdSIN PAST) Baby took away toy.
(16) Kedi dede götürdü. (Cat grandfather take away-3rdSIN PAST) Grandfather took away the cat. (semantically)
(17) Abi bardak düşürdü. (Elder-brother glass fall down-3rdSIN PAST) Elder-brother fell down the glass.
(18) Masa abla düşürdü. (Table elder-sister fall down-3rdSIN PAST) Elder-sister fell down the table.
(19) Amca oyuncak çekti. (Uncle toy pull-3rdSIN PAST) Uncle pulled toy.
(20) Araba arkadaş çekti. (Car friend full-3rdSIN PAST) A friend pulled the car. (semantically)
(21) Öğretmen boya taşıdı. (Teacher color carry-3rdSIN PAST) Teacher carried color.
(22) Fare köpek taşıdı. (Mouse dog carry-3rdSIN PAST) Mouse carried the mouse. (semantically)
(23) Kadın kapıitti. (Woman doo door push-3rdSIN PAST) The woman pushed the door.
(24) Pencere teyze itti. (Window aunt push-3rdSIN PAST) Aunt pushed the door. (semantically)