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Acquisition of argument structures and ditransitive verbs: Evidence from an elliptical language

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Abstract

In first language acquisition, verbs can be regarded as the word types which are more challenging to comprehend and interpret due to their cognitive and linguistic constraints (Sofu & Ertekin Sucak, 2018). In essence, children can make inferences about the types of verb meanings from the possible number of arguments that the verbs can take (Becker, 2005). For this reason, it is crucial to know how children acquire argument structures of the verbs, especially the arguments of ditransitive verbs which include two internal arguments in its phrase. To this end, this cross-sectional study scrutinizes how Turkish children acquire argument structures of ditransitive verbs in their mother tongue. 10 children were presented a task including nine sentences built with ditransitive verbs. Words in those nine sentences were intentionally ordered differently; and each sentence was formed with different subjects and objects. Specifically, sentences which could be frequently used in the kindergarten context were included in the task. Moreover, a particular focus was on circumstances when Turkish children omit argument structures in their spontaneous speech. Both comprehension and production data which were analyzed descriptively indicate that children are successful at interpreting and producing argument structures and they are aware of argument omission. In addition, they do not rely on word order in order to correctly interpret and make use of arguments in their speech.

Keywords: Verbs, ditransitive verbs, argument structures, argument omission, Turkish, acquisition

1. Introduction

Many studies on language acquisition indicate that adults use verbs as frequently as nouns although nouns are used more commonly in child's speech, and in fact, nouns are the first lexical items produced by children (Ekmekçi, 1979; Gentner, 1978; Sofu, 1995, Türkay, 2005). The importance of knowledge of nouns in verb acquisition is explained by Waxman et al. (2013) who believe that the meaning of a verb is directly related to the nouns (arguments) that it takes; thereof, children's acquisition of verbs need to be preceded by the development of a repertoire of nouns. As such, the study of verbs and their argument structures has become crucial in terms of understanding how they are acquired. This is because the varieties of lexical categories influence the acquisition of arguments (Conwell et al., 2011; Yang,

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2016). In this regard, the first step should be to be familiar with what an argument is. Generally, an argument is defined as a noun phrase having a semantic and grammatical relation to a verb (Allen, 2015). Because of this relation, the presence of an argument is necessary for the well-formedness of sentences; and the presence of arguments may be either overt or implied depending on the context of the utterances. In Turkish, a sentence with a transitive verb can preferably include either overt or covert arguments as well as pronouns; namely, it is possible to use covert, omitted or elided subjects and objects. To exemplify, you can say "Kesinlikle beğendiremedim (I never made her like it.)" instead of "Ben bu oyuncağı kızıma kesinlikle beğendiremedim (I never made my daughter like this toy)." That is, it is possible to omit the subject (ben/I-first person singular), direct (bu oyuncağı/this toy) and indirect (kızıma/my daughter) objects. In the related literature, this issue on how children acquire verbs and argument structures have been argued with four main hypotheses which are semantic bootstrapping, syntactic bootstrapping, verb island hypothesis and weak or graded abstract representations.

Firstly, as a way to understand how verbs and argument structures are acquired, semantic bootstrapping hypothesis asserts that children pay attention to the events which verbs refer to, which means semantic cues are fundamental grammatical evidences for children to learn meanings of verbs (Pinker, 1984; 1989). In relation to this, Allen (2015) exemplifies the semantic bootstrapping as noticing that some events (e.g. running) require an Agent; however, some events (e.g. pushing) require both an Agent and a Patient in it. For instance, through observation, children notice that a running event requires an Agent who is running, but a pushing event requires an Agent who is pushing and a Patient who is pushed at the same time. Allen also posits that children map this knowledge of verbs having a Subject or an Object as they are exposed to the input. This shows that repeated experiences can be important in order for children to figure out argument structures of verbs that they hear. In this process, children have the innate ability to be able to make connections between the semantic knowledge and syntactic knowledge (Pinker, 1989). Pinker (1989) reveals that children do not make dative overgeneralizations to verbs that do not allow for this in his study including spontaneous speech and production activities. Such a finding can be an indicative of the sensitivity of children to semantic relations between verbs and argument structures.

The main challenge to semantic bootstrapping comes from the accounts of syntactic bootstrapping hypothesis argued by Gleitman, (1990), Göksun et al. (2008), Landau and Gleitman (1985), Matsuo et al. (2012). These accounts point to the fact that syntactic cues surrounding a verb help children learn the meaning of that verb (Gleitman, 1990; Landau & Gleitman, 1985; Matsuo et al., 2012). To clarify, Gleitmen (1990) presents evidence from the verb acquisition process of a blind child even though they could not see the context where the specific action takes place. That is, both blind and sighted children who are under different exposure conditions to language input acquire more or less the same representations for the verbs. Starting from this point of view, what provides children to learn verb meanings is the number of noun phrases and other elements occurring with

the verbs (Gleitmen, 1990). Identically, Göksun et al. (2008) propose that children analyze the different verbs depending on their differing syntactic features while learning argument structures. Another rationale behind Gleitmen's (1990) syntactic bootstrapping hypothesis is that some verbs are very similar; therefore, it may be impossible to differentiate them just by observing (eg. flee, chase). Moreover, some verbs have meanings which we cannot understand by observing (eg. think, know). This is related to the displacement feature of language faculty which means the ability to understand the spatially and temporally remote things (Tamura & Hashimoto, 2012). Naigles et al. (1992) have shown that children (2-4 ages) try to adjust a known verb into a new syntactic frame contrary to older children who (5-12 ages) may not be interested in the syntactic frame when it does not fit the established verb meaning like adults. In addition, Lee and Naigles (2008) conclude that children extend the verb meanings by analyzing the number of noun phrases in an utterance. In other words, they extend certain meanings to other familiar verbs encountered in different transitivity frames. This finding is an evidence for the presence of an abstract grammatical knowledge in acquisition of verbs, namely the syntactic bootstrapping. Similarly, Göksun et al. (2008) have found out that Turkish-speaking children are better at syntactic bootstrapping tasks. This is most probably because of the fact that case marking is essential in Turkish and case information gives cues on the argument roles. Özge et al. (2019) presents evidence for this by stating that four-year-old Turkish children have abstract knowledge of case markers that is independent of the verbs. Later on, a supportive view toward syntactic bootstrapping hypothesis belongs to Yuan et al. (2012) who point out that the toddlers generally benefit from the pronominal arguments in order to correctly identify and comprehend a novel verb.

In fact, it would be wrong to evaluate the impacts of semantic and syntactic bootstrapping hypotheses as totally separate issues since the only distinction between them is the direction of the mapping process. In the former one, the acquisition is from the semantic cues to syntactic knowledge whereas in the latter one, the acquisition is from syntactic cues to semantic knowledge. Both of these hypotheses claim that children have adult-like grammar and the effect of an innate ability to acquire adult-like grammar cannot be ignored. As a matter of fact, Pinker (1984) mentions that both semantic and syntactic knowledge are influential in the acquisition process; yet, we need to know which one matters more at the very beginning of the acquisition process. Pinker (1989) argues that children make use of innate semantic knowledge to bootstrap into syntax; however, Gleitman (1990) states that children focus upon innate syntactic knowledge to bootstrap into semantics.

Apart from the semantic and syntactic bootstrapping hypotheses accounting for an innate linguistic knowledge, the verb-island hypothesis, also known as usage-based theory, suggests that children benefit from only general cognitive mechanisms to acquire language (Tomasello, 2000). In this theory, the aid in the acquisition process is the generalizations which children make from the input. It should be noted that such aid is a commonly agreed notion indicating that language acquisition requires

exposure (Gates, 2002; Wang et al., 2022). The foundations for this approach are based upon the findings of Tomasello's (1992) study which includes the spontaneous speech of a child before age 2. The data illustrate that each verb is an "island" with its own distinctive argument structures. This view asserts that children produce their multi-word utterances without being aware of syntactic structures such as noun and verb. Children's early utterances are formularized according to a functionally-oriented distributional analysis (Tomasello, 1992) of the language they are exposed to. For instance, in the sentence "Mary throws the pencil", the roles of Mary and the pencil are assigned to "throws". That is, Mary is the one who can throw things, and the pencil is something that can be threw. Tomasello also proposes that verb-specific argument structures are later generalized by children to more abstract categories such as agent, subject, and intransitive verbs and so on. In this process, the primary determinants are the cognitive development and social interaction (Tomasello & Brooks, 1999). This indicates that children make an organization of verbs in their mental schema with the information that they gain through experience. Further, 3-4 years olds could integrate the novel items to the utterances that they did not encounter in adult speech; however, 2-3 years olds could not do the same thing (Tomasello & Brooks, 1998). The implication is that children gradually construct an abstract linguistic knowledge as understood from the case of older children. In the same line with this notion, Theakston et al. (2001) emphasize that the most important factor influencing children's acquisition of verbs and argument structures is the experience with the input, rather than abstract grammatical representations. Another support for this hypothesis comes from a case study of a Turkish child which was conducted by İnci-Kavak and Kavak (2021). They conclude that young children's awareness of how to use linguistic structures increases thanks to the availability of those structures in the contextual communication with their caregivers.

Allen (2015) suggests some contradictory opinions toward the proposition that experience and exposure are the keys for acquiring verbs. To exemplify, the usage-based theory behind the verb- island hypothesis does not account for abstractness for the reason that it solely provides evidence for syntactic priming. She supports her idea by asserting that the child continues to use the learned syntactic frames just because they are primed to use the frames to which they are exposed in the environment. Therefore, the focus should be geared toward the hypothesis of "weak or graded abstract representations". From a critical perspective, the usage-based approach primarily relies on production studies in which children have to be active decision-makers; and this process is really bound to syntactic representations. In spite of this, comprehension studies can be less demanding on children and thus, children could be involved in abstract representations of argument structures. What is implied here is that more comprehension studies are required to be conducted so as to compensate for the lack of abstractness because usage-based theorists make interpretations depending on what is available in the input. However, abstract words (words referring to intangible qualities, ideas and concepts such as truth, kindness or honor) should be scrutinized because, for children, they are relatively

more difficult to comprehend than concrete words (words referring to tangible qualities, ideas and concepts such as green, square or wood) (Bellagamma et al., 2022). Conducting one of the related comprehension studies, Conwell and Auen (2021) claim that the acquisition of argument structures by English-speaking pre-school children may be easier with the help of the accompanying pronouns which give important hints about the thematic roles.

In addition to these four hypotheses, much of the related literature is concerned with the presence or absence of arguments in caregiver speech which is in a constant relationship with the child speech (İnci-Kavak & Kavak, 2021) because omission of arguments is possible in Turkish which permits the uses of null arguments (Gürcanlı et al., 2007). The crucial point is that we need to know how children process the input to learn arguments or how they produce argument structures in languages (e.g. Turkish) where arguments are often omitted. In other words, in such languages, children are not able to use semantic cues to bootstrap themselves into verb meaning. Instead, especially in morphologically rich languages, they need to activate their syntactic bootstrapping mechanisms which can provide them with some morphological cues to verb learning (Ural et al., 2009). In a recent study from Turkish context, İnci-Kavak and Kavak (2021) investigate the caregiver speech in terms of variation sets and reveal that variation sets have a big role in providing children with rich and varied contexts where they can analyze and interpret the boundaries of words in their mother tongue. In a similar vein, Che et al. (2018) assert that there are strong ties between the "here and now" content which is full of repetitions and the child language development.

In relation to argument ellipsis, Sugisaki (2009) conducted a study with 24 Japanese-speaking children aged between 4;11 and 6;07. The experimenter used a Truth-Value Judgement Task in which children were supposed to say whether the puppet truly described the story or not. The results showed that Japanese-speaking children have knowledge of argument ellipsis. Argument ellipsis is said to be connected to scrambling (Takahashi, 2008) or the lack of overt agreement (Saito, 2007). Moreover, argument ellipsis is found to be acquired early by Sugisaki (2009). This may be because of the fact that argument ellipsis and some specific properties of the Japanese language such as agreement and scrambling are interrelated (Saito, 2007; Takahashi, 2008). From a different perspective, in their study focusing on parental input, Kayama and Oshima-Takane (2022) propose that the existence of variation sets, which provides morphosyntactic clues, in the input help children reconstruct verb argument structures in Japanese. As for Turkish which is a head-final, SVO language like Japanese, there is a correlation between argument ellipsis and scrambling (Oku, 1998). Also, Turkish allows for object ellipsis, but it does not allow for subject ellipsis. The reason for that is argument ellipsis is not permitted when there is agreement (Saito, 2007); however, the presence of scrambling is a determinant for argument ellipsis (Oku, 1998). In Turkish, Gürcanlı et al. (2007) observes that, in their experimental study in which adults' and children's rates of argument omission were focused, pragmatic information available in the environment may be a determinant for the saliency of the

arguments. Further, Sofu and Ertekin Sucak (2018) claimed that argument ellipsis may not only derive from the frequency of ellipsis in adult speech but also from the joint attention of the adult and child on the same objects and actions while interacting.

In Turkish, Göksun et al. (2008) assert that both the number of noun phrases and the influence of an accusative case marker and the causative morpheme can be the determinant of the verb meaning process. In this study, causative enactments are found to increase when there is accusative case markers or two-argument frames. That is, Göksun et al.'s (2008) study emphasize the place of syntactic and morphological cues in verb learning. Hence, language-general properties lead to a supporting view for the syntactic bootstrapping in the acquisition process of verbs. Ketrez (1999) explored that verbs in Turkish are either used in frozen forms or in base forms by children. In a sense, this shows the absence of an adult-like verb category for children. Furthermore, Ketrez (1999) discusses the semantic bootstrapping hypothesis in the context of errors she observed on the production of utterances with inanimate subjects and action verbs. According to the findings discussed by Ketrez (1999), children may not successfully relate verbs to noun phrases in the specific semantic context. Besides, it is the pragmatic conditions which explain the rationale behind the overt uses of arguments by children; for example, children use arguments explicitly when they want to draw attention to them (Ketrez, 1999). From another perspective, Yapıcı (2008) accounts for verb and argument structure acquisition of Turkish children with the verb-island hypothesis based on her naturalistic longitudinal data. She is of the opinion that Turkish children cannot use overt arguments at the outset, but they become able to use multiple arguments later in the acquisition process. This means that children's acquisition of arguments is cumulative, which is in the same line with the proposition of verb-island hypothesis demonstrating that children succeed to acquire argument structures as they get older and as they gain experience with the language. The rationale is that the acquisition of arguments necessitates time and experience because, as Judy and Recio (2022) express, less structurally complicated arguments are figured out earlier than their comparatively more structurally complicated counterparts.

It should be noted that the languages are grouped under the categories of the ones with free/flexible word orders and the ones with strict/fixed word orders. For instance, certain European languages such as English and French have strict/fixed word orders. This means that English and French do not let sequencing words in interchangeable positions since such an attempt will lead us to change the overall meaning or to make the sentence ungrammatical. However, as an elliptical language, Turkish permits free word orders; that is, verbs are generally at the final position whereas subjects and objects are possible to be placed in interchangeable positions. Although the canonical word order was SOV in Turkish, not only the omission of subject pronoun is frequent but also the argument ellipsis is very common in use. Another issue is transitivity/intransitivity which determines the number of arguments each verb requires (Göksel & Kerslake, 2005). If a verb is transitive, it exerts its action on an object. Yet, if a verb is

intransitive, it can make sense without an object. Besides, there exists another category which is ditransitive verbs surrounded by both direct and indirect objects. To exemplify the canonical uses of ditransitive verbs in Turkish, we can present the sentence below:

Selin soruyu öğretmenine sordu.
Selin question-ACC teacher-Poss-2SG-DAT ask-PAST-3SG
'Selin asked her teacher the question.'

In the light of all these views and considering the difficulty in the acquisition of verbs compared to nouns (Hirsh-Pasek & Golinkoff, 2006), the present study aims to expand knowledge on how sensitive Turkish children are in identifying argument structures of ditransitive verbs in sentences whose word orders are different. Another aim is to reveal to what extent children tend to omit arguments in their utterances. The reason why ditransitive verbs are under scrutiny is that direct and indirect objects are possible to co-occur with ditransitive verbs. Besides, it may be essential to study ditransitive verbs in Turkish which permits scrambling which can make things more complicated to understand the preferences and order of argument structures. Therefore, this study aims to answer the following research questions:

1. At what degree are Turkish children sensitive to argument structures of ditransitive verbs?
2. At what degree are Turkish children sensitive to sentences in which argument structures of ditransitive verbs are ordered differently?
3. At what degree do Turkish children omit argument structures of ditransitive verbs?

2. Methodology

2.1. Research Design

The present study was designed as a cross-sectional study which is descriptive in nature. Trochim (2006) defines the cross-sectional studies as the investigation of characteristics in a community without manipulating the variables at a single point in time. The data were collected from different participants only once. The factors such as age, gender, socioeconomic level, language proficiency, educational background were not included as variables in the study. The focused variables are children's ages and their language background and linguistic environment.

2.2. Participants

Ten Turkish monolingual children who lived in a monolingual environment from birth to their current age were involved in the study. Their ages ranged between 3;4 and 5;9. Four of them were females and six of them were males. All of them attended a daily kindergarten located in the southern part of Turkey. Their mean length of utterance (MLU) and the level of exposure to the first language were not checked because these are not the variables for the present study; the ultimate aim is to purely describe the realizations of argument structures by Turkish children at specific ages.

2.3. Data collection task

The data collection task involved nine sentences built with ditransitive verbs which were selected with the intuitive native judgments of the researcher and the kindergarten teacher considering the common semantic schema of the children. In each sentence, "Subject" was the initial word and the orders of "Verb, Direct Object and Indirect Object" differed. Each sentence was not presented in all possible word orders; instead, each ditransitive sentence was presented once and in different word orders. The choice for the word orders was random. In the construction of the sentences, all items had 3rd person singular subjects and were formed in the past tense. Detailed information about the task is illustrated in Table 1:

Table 1
Sentences in the data collection task

Ditransitive Verbs	**Sentences (Turkish version)**	**Word Order**	**Sentences (English version)**
Sormak (to ask)	Öğretmenim soru bana sordu.	(S-DO-IO-V)	My teacher question me asked.
Gizlemek (to hide)	Babam makası dolaba gizledi.	(S-DO-IO-V)	My father the scissors in the cupboard hid.
Vermek (to give)	Arkadaşım kitabını bana verdi.	(S-DO-IO-V)	My friend me his/her book gave.
Getirmek (to bring)	Babam okula beni getirdi.	(S-IO-DO-V)	My father to school me took.
Yazmak (to write)	Öğretmenim kağıda ismimi yazdı.	(S-IO-DO-V)	My teacher my name on the paper wrote.
Anlatmak (to tell)	Öğretmenim bize masal anlattı.	(S-IO-DO-V)	My teacher us tale told.
Göstermek (to show)	Ablam gösterdi bize resimler.	(S-V-IO-DO)	My elder-sister showed us pictures.
Ödünç vermek (to lend)	Arkadaşım ödünç verdi bana boyayı.	(S-V-IO-DO)	My friend lent me the crayon.
Göndermek (to send)	Annem gönderdi bana yemeği.	(S-V-IO-DO)	My mom sent me the food.

Note: S: Subject, DO: Direct Object, IO: Indirect Object, V: Verb

2.4. Data collection procedure

At the very beginning of the data collection procedure, the researcher introduced herself to the children, created rapport and became acquainted with them so that the children could feel relaxed and produce natural speech without hesitation. Following this, because the children were not literate at the time of the study, each of them listened to each sentence in the task from the recorder. Afterwards, in order to check the comprehension, the researcher uttered the sentence one more time and the child were encouraged to repeat the same sentence. After the child's comprehension was ensured, the researcher asked questions such as "Who did this?, What was done? To whom/To where was the action done?" These questions were asked in the same order to each child after each sentence in the task. The

responses to these questions were important in terms of understanding the children's sensitivity to the subjects, direct and indirect objects of particular verbs. The researcher went through the same procedure separately with each child. When the task was over, the researcher was involved in a free conversation with each child during almost 10 minutes. In the course of these dual conversation, the researcher asked questions involving ditransitive verbs so that she could obtain data in relation to argument omission when a ditransitive verb was uttered. All the dialogues established for collecting both comprehension and production data were audio-recorded by the researcher who is a native speaker of Turkish via the mobile phone.

2.5. Data analysis

For the analysis of argument structures of ditransitive verbs utilized by children, the first step was to prepare the transcriptions for the descriptive analysis. The correct and wrong responses of children to the questions "Who did this?, What was done? To whom was the action done?" were manually counted so that frequencies and percentages could be calculated as a result of the overall number of productions of all the children. Moreover, the use of argument structures for different word orders was categorized, and omitted argument structures in children's spontaneous speech were explored. The verbatim transcriptions of the whole spontaneous speech were analyzed with the intent of discovering the uses of utterances including ditransitive verbs as a way to understand the rate of the children's omission of argument structures of ditransitive verbs. For the sake of reliability, the whole data were analyzed twice at different times; and thus, an acceptable intra-rater reliability score was ensured.

3. Findings

3.1. At what degree are Turkish children sensitive to argument structures of ditransitive verbs?

To examine the sensitivity to argument structures co-occurring with ditransitive verbs, the correct responses for each argument structure were defined and counted as illustrated in Table 2:

Table 2
Argument structures identified correctly by the children

Arguments	f	%
S	89 (out of 90)	99
DO	80 (out of 90)	89
IO	83 (out of 90)	92
Total	252 (out of 270)	93

Note: S: Subject, DO: Direct Object, IO: Indirect Object.

As understood from the total results in Table 2, children seem to be able to identify the majority (93%) of argument structures of ditransitive verbs correctly. In terms of S, DO and IO; children were found to be sensitive to the subject to a great extent (99%). Following this, they were quite good at determining the direct (89%) and indirect objects (92%). When the results

are compared, it can be argued that there is just a slight difference between the true responses for direct and indirect objects even though indirect objects are identified more appropriately. Overall, children aged between 3;4 and 5;9 are successful at their interpretations of argument structures of ditransitive verbs. The fact that all age groups were successful at interpreting argument correctly indicates that the acquisition of arguments is almost fully completed as early as age 3.

3.2. At what degree are Turkish children sensitive to sentences in which argument structures of ditransitive verbs are ordered differently?

To investigate whether different word orders are influential in the sensitivity of children to argument structures co-occurring with ditransitive verbs, sentences in the data collection task were grouped under three categories which were S+DO+IO+V, S+IO+DO+V and S+V+IO+DO. As seen, the subject was always in the initial position; however, the other argument structures and the verb were positioned differently. Correspondingly, Table 3 shows how sensitive children were in identifying argument structures of ditransitive verbs positioned in different orders:

Table 3
Argument structures identified correctly by the children in sentences in which words are sequenced differently

Arguments	Word Orders					
	S+DO+IO+V		S+IO+DO+V		S+V+IO+DO	
	f	%	f	%	f	%
S	30	100	30	100	29	97
DO	23	77	29	97	28	93
IO	29	97	25	83	29	97

Note: S: Subject, DO: Direct Object, IO: Indirect Object.

Table 3 sheds light into the relation between different word orders and sensitivity of Turkish children to argument structures of ditransitive verbs. It is highly possible to say that there are not huge differences in the correct interpretations of argument structures by children. For each different word order, the subjects were almost always interpreted correctly. Most probably this is because the subjects were not scrambled at all. Only for S+V+IO+DO order, the subject was not identified correctly once. When the results regarding direct and indirect objects were scrutinized, some slight differences were encountered. To exemplify, for the S+DO+IO+V order, indirect objects (97%) were more correctly interpreted than direct objects (77%). The situation for S+IO+DO+V order is vice versa because children appear to be more skilful at identifying direct objects (97%) than indirect objects (83%). Concerning S+V+IO+DO order, the results show that children are considerably capable of interpreting each argument structure. Based on all these, it is logical to express that various word orders might not create a difference or challenge for children's identification of argument structures of ditransitive verbs.

3.3. At what degree do Turkish children omit arguments structures of ditransitive verbs?

In total, 80 utterances (see samples in Appendix) including ditransitive verbs were identified from children's spontaneous speech. Among 80 utterances, omitted argument structures were defined and calculated; and the results are presented in Table 4:

Table 4
Omission of argument structures of ditransitive verbs in children's spontaneous speech

	f	%
Omission of S (Null Subject)	57	48
Omission of DO	21	18
Omission of IO	40	34
Omission in total	118	100

Note: S: Subject, DO: Direct Object, IO: Indirect Object.

Table 4 demonstrates that children omitted 118 out of 179 arguments in their utterances. Out of these 118 omissions, the most frequent omission (48%) is related to the subject, which means children tend to prefer null subject very commonly. One example for the use of null subject is "Masal anlatmış çocuklara (Tale told children)". As is clear in this utterance, the child did not refer to the subject who was a third person singular, but the subject was in fact "the teacher" depending on the contextual information. This can be explained with the pro-drop feature of Turkish; namely, the empty part is the subject which remains unexpressed in specific circumstances (Öztürk, 2002). The other frequently omitted argument is indirect objects (34%) and following this, direct objects were also omitted in the ratio of 18%. If we compare the omissions of direct and indirect objects, we can assert that indirect objects were nearly omitted two times more than direct objects. This can be an indicative of a tendency among Turkish children to tell more about indirect objects which represent the recipient or beneficiary of the action of the verb. To exemplify omission of direct objects, "Babam okula getirmiş (My dad to school took)" can be an illustrative example. Here, what was taken to school was not mentioned whereas the contextual cues pointed to the "schoolbag". In terms of indirect object omissions, one child uttered this sentence: "Arkadaşım kitabı vermiş (My friend the book gave)." That is, we could not know to whom/to where the book was given in the absence of discourse cues.

Apart from these, it was also found out that children did not omit any arguments in four sentences listed in the following part. Each dialogue belongs to a different child.

Researcher: Sonra ne oldu? Öğretmenin ne yaptı peki?
Child: Öğretmenim arkadaşımın ismini tahtaya yazmıştı. (S+DO+IO+V) (3;9)
'My teacher my friend's name wrote on the board.'
Researcher: Herkes görsün diye galiba değil mi?

Researcher: Diğer gün hangi aktiviteyi yapmıştınız?
Child: Öğretmenimiz masal anlatmıştı bize. (S+DO+V+IO) (4;1)
'Our teacher tale told to us.'
Researcher: Ya, güzel bir masal mıydı?

Researcher: Yani evde telefonla oyun oynamıyor musun?
Child: Babam telefonu dolaba saklıyor. (S+DO+IO+V) (3;4)
'My dad phone cupboard hiding.'
Researcher: Hmm, istemiyor telefonla uğraşmanı demek ki.

Researcher: Senin annen peki? Öğlen ne yapıyor?
Child: Annem yemek gönderir babama. (S+DO+V+IO) (4;6)
'My mom meal sends to my dad.'
Researcher: O zaman sabah yemek pişirmekle meşgul annen.

As is evident in the above examples, children were not inclined to omit any argument in four different sentences. When these sentences are examined, it is revealed that children made use of different word orders although the initial word was always the subject. In the above sentences, another common point is that the direct object was always used as the second word. Most probably, the differences in the word orders of those sentences resulted from the fact that children has tendency to put emphasis on different words by using arguments in interchangeable positions. That is, children's tendency to these sorts of scrambling is not without cause in Turkish (Özkan Grigoras, 2020).

Overall, according to result of argument omission, the most-eye-catching point might be that direct objects existed more frequently in children's utterances when compared to other argument structures co-occurring with ditransitive verbs. This shows that children preferred to give information about the direct object; and this maybe because direct objects are directly affected by the action of the verbs, namely they are the things acted upon.

4. Discussion and Conclusions

As an elliptical language, Turkish permits scrambling; that is, verbs are generally at the final position whilst subjects and objects are possible to be used in interchangeable positions. In the related literature, the studies (Göksun et al., 2008; Lee & Naigles, 2008; Lidz et al., 2003) generally cover the number of noun phrases to have an idea about the verb acquisition of children. For this reason, the present study aimed at revealing how Turkish children comprehend and produce argument structures with certain ditransitive verbs. To achieve the former aim (comprehension), a task including sentences in which words were ordered differently was conducted with children. To achieve the latter (production), children were encouraged to speak spontaneously with the researcher by focusing some certain actions of pre-selected verbs.

The primary results show that children displayed sensitivity toward argument structures of ditransitive verbs and there were only slight differences between the correct interpretations of the subject, direct and

indirect object. Among those, it was the subject which was correctly interpreted more frequently. Regarding other arguments, indirect objects were correctly identified more often when compared to the correct identification of direct objects. The reason behind the correct interpretation of the subject might be related to the affixes attached to the verb since those affixes give information about the subject. This may be also associated with the finding that Turkish children are better at syntactic bootstrapping thanks to the case marking system in Turkish linguistic structure (Göksun et al., 2008). That is, such syntactic cues as affixes or case markings help children correctly interpret the linguistic input they encounter. As for direct and indirect objects' correct identifications, children may use both syntactic and semantic mechanisms together. The former one refers to syntactic cues surrounding a verb (Landau & Gleitman, 1985; Gleitman, 1990; Matsuo et al., 2012; Yuan et al., 2012) and the latter one refers to the use of innate semantic knowledge (Pinker, 1989).

With regard to sensitivity to varying word orders, children did not seem to be influenced by the interchangeable positions of arguments while identifying argument structures of ditransitive verbs. The reason why they did not rely on word order so as to interpret arguments correctly was most probably because they focus on their semantic mechanisms instead of benefitting from syntactic bootstrapping strategies as proposed by Gleitman (1990). Another explanation for this might be associated with the notion that discourse related cues can be helpful to learn verb meanings and argument structures (Ketrez, 1999). An additional justification may be that language-specific properties in verb learning, such as free order property which makes Turkish different from other languages having strict word order rules (e.g. English and French), might be influential in the interpretation of arguments. This contradicts with the proposition that general cognitive mechanisms play a role in the acquisition of verb meanings and argument structures (Lidz et al., 2003). However, similar to the effects of general cognitive mechanisms in language acquisition, some characteristics of the input can foster the acquisition process positively. For instance, being involved in rich and varied contextual communication (İnci-Kavak & Kavak, 2021) and repetitions in the input (Che et al., 2018) might ease the cognitive and emotional difficulties in the language acquisition.

Concerning argument omission, both direct and indirect objects were omitted to a great extent, but children tended to mention direct objects more frequently in their utterances. This shows that Turkish children aged between 3;4 and 5;9 are aware of argument omission. This finding is in consistency with the findings of Sugisaki (2009) indicating that Japanese-speaking children have knowledge of argument ellipsis. In addition, argument ellipsis is found to be acquired early by Sugisaki (2009). The findings of this study are also in line with the findings of Sugisaki (2009). As to the reasons behind the existence of argument ellipsis, Takahashi (2008) relates it to scrambling or the lack of overt agreement (Saito, 2007). Similarly, Oku (1998) points out that the presence of scrambling is a determinant for argument ellipsis. Within the present study, argument omisson is prevalent among Turkish children and this may be because of the fact that the joint attention paid by the adult and the child on the same

objects and actions in communication (Sofu & Ertekin Sucak, 2018). Joint attention can solve the challenges created by the elliptic nature of Turkish.

Taking the limitations of the study into account, it is an urgent need to carry out a further study investigating the similarities and differences between argument comprehension and production of children at different ages. Alternatively, a longitudinal study could be conducted to examine the process of how arguments are acquired through time. If these are ensured, more reliable and valid data could be gathered; and we can have a broader idea about the acquisition of argument structures. In terms of contexts where the data are collected, argument structures uttered in different settings can be explored. In this way, the variables resulting from context-bound differences could be eliminated. Last but not least, arguments produced by adults or caregivers should also be in the scope of an upcoming study in which argument structures of children and adults are compared in a way that the researchers can use adults' argument structures as a reference to better understand the employment of arguments by children.

Note: This study is a modified version of the author's proceeding presented at the Fifth International Mediterranean Social Sciences Congress (MECAS V) which was held in Podgorica, Montenegro on June 18-20, 2019.

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Appendix
Samples from the children utterances for each ditransitive verb

Sample 1:
Researcher: Peki sen? Sen cevap verebildin mi?
Child: Yok, hayır bana sormadı ki. (5;9)
'Nope, he did not ask it to me.'
Researcher: Keşke sorsaydı değil mi? Cevabı biliyordun çünkü.

Sample 2:
Researcher: Nasıl buldu öğretmen peki?
Child: Boyaları masanın altına gizlemek istedim ama … (5;5)
'I wanted to hide the crayons under the table but …'
Researcher: Böylece paylaşmış oldun ama.

Sample 3:
Researcher: Buraya da not kağıtlamızı ve kalemleri koyalım.
Child: Bana vermeyecek misin? (3;7)
'Won't you give it to me?'
Researcher: Neyi, kalemleri mi?

Sample 4:
Researcher: Duvardaki posterler ne kadar güzel. İnceleyebiliriz birlikte, ne dersin?
Child: Getirmemi ister misin? (4;3)
'Do you want me to take it?'
Researcher: Olur ama birazdan tamam mı?

Sample 5:
Researcher: Hadi yazalım o zaman duygularımızı seninle.
Child: Tamam, yazalım benim defterime. (5;0)
'Okay, let's write on my notebook.'
Researcher: Anlaştık.

Sample 6:
Researcher: Çok mu seviyorsun masalları? Anlatıyor musun masal acaba?
Child: Kardeşime anlatıyorum ben masallar … (4;8)
'I tell my sister tales …'
Researcher: Hmm, harikasın.

Sample 7:
Researcher: Çizdiklerini gösterir misin bana şimdi?
Child: Olur ama, öğretmenim izin verirse gösteririm. (3;9)
'Okay, but I show them to you if my teacher let me.'
Researcher: Peki izin al, bakalım sonra.

Sample 8:
Researcher: Bir günlüğüne bile mi?
Child: Hayır, bir günlüğüne bile ödünç veremem bunları ben. (4;1)
'No, I can't lend them to you even for one day.'
Researcher: Gerçekten mi? Neden ama?

Sample 9:
Researcher: Kuzenin için olsa göndermek ister misin?
Child: Evet, hediyeyi kuzenime göndereceğim. (3;4)
'Yes, I will send the gift to my cousin.'
Researcher: Çok sevinir gönderirsen değil mi?