

**EARLY VERBS**  
**AND THE ACQUISITION OF TURKISH ARGUMENT STRUCTURE**

**Dissertation submitted to the**  
**Institute of Social Sciences**  
**in partial fulfillment of the requirements for the degree of**

**Master of Arts**  
**in**  
**Linguistics**

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**by**  
**Fatma Nihan Kerez**

**Boğaziçi University**

**1999**

## ACKNOWLEDGMENTS

Writing this thesis has been the most amazing academic experience I have ever had. I am very pleased to acknowledge the contributions of many people to whom I owe this great experience.

I am grateful to my thesis supervisors Prof. Dr. Eser Erguvanlı Taylan and Prof. Dr. Ayhan Aksu Koç who shared my excitement about verbs all through this study. I have always considered it a great privilege to work under their direction. I am grateful not only for their invaluable guidance and the time they spent on my work but also for their encouragement and support which brought me this far in this field.

I would like to express my thanks to my professors who have always been beside me whenever I needed them. Prof. Dr. Sumru Özsoy has been the "external argument" of my study. She has always been "the most prominent" and I can never "suppress" her contribution (neither to my study nor to my life)! Dr. Didar Akar taught me how to "write" this thesis and did her best to improve my study. Nothing could be more fun than writing a thesis with her! Dr. Mine Demiralp provided me with lots of new questions and a new insight into the issues I was dealing with. I wish I could have more time to discuss my problems with her! Dr. Aslı Göksel discussed my first observations with me and draw my attention to many details which then turned out to be very significant for my claims.

I would also like to thank all my friends who were "in the kitchen" of the study. Ceyda Arslan is the one who did the transcription of Mine's samples and I have always benefited greatly from her phonological analysis of the data. Yasemin Sohtorik typed huge piles of data. I am grateful to her for her patience and attention to every single detail. No one could do a better job! Barış Kabak coded the data with me. Hours-long discussions I had with him were the most enjoyable parts of the coding phase. As he told me, (Rafaello's) angles helped me to finish this thesis finally and just as he suggested, I am ready for the

Empire State Building now! Zeynep Kuleliođlu helped me in computational matters but I am grateful to her for her warm and sincere support in *anything*.

I would like to thank Aslı İđsız for her encouragement that came through early-morning and late-evening calls and Meltem Kelepir not only for the hours she spent at the libraries for me but also for the linguistic and personal experiences she shared with me. I am grateful to Múge Tařkın who has been beside me when I was desperately struggling with non-linguistic matters along with my thesis. Similarly, I am grateful to Ms. Semiha Sangar for the silence and peace she has provided, for her ever-smiling face and her warm company at my mid-night coffee breaks. I have been just lucky to have those lovely people around me!

Besides them, I am also grateful to the participants of the IXth International Congress on Turkish Linguistics (which was held at Oxford University) and XII. Dilbilim Kurultayı (which was at Mersin University) who gave me feedback during and after the presentations of the sections of this thesis. I would also like to thank all the parents, grandparents, uncles and aunts who shared their experiences with me. Discussions I had with them convinced me that I was on the right track. I am especially grateful to Dr. Ömer Demircan in this respect!

Finally, my deepest thanks go to my little heroines, *Azra*, *Deniz*, *Mine*, and *Tuna*, of course, who, very generously, shared their first words with us. I am also grateful to their parents without whose involvement, patience and efforts we could never have developed this thesis.

If only I could be more capable to weave all these efforts, experience and love put in this study, it surely could be a much better work. I am to be blamed for all the shortcomings, errors, over-simplifications, misinterpretations and the full stops that are not inside the quotation marks!

The data analyzed in this study are collected for Prof. Dr. A. Aksu-Koç's research "A Longitudinal Study of the Acquisition of Turkish: The Second Phase" (project no:96S0017). I would like express my thanks to Bođaziçi University Research Fund which supports this project and to Prof. A. Aksu-Koç with whose permission I analyzed these data.

## **ABSTRACT**

Early Verbs and the Acquisition of Turkish Argument Structure

by

Fatma Nihan Ketrez

This thesis analyzes the acquisition of early verbs and Turkish argument structure by four monolingual Turkish children whose language development is studied longitudinally between the ages 1;1,19 and 3;3,3.

In the first part of the thesis, the early verbs produced by the subjects are described and the emergence of the Turkish verb as a syntactic category is discussed. The main claim in the study is that the subjects go through a developmental stage during which they provide hardly any evidence for the verb category in their speech. Morphological and syntactic evidence for the category start to appear by the age of 1;6-1;7 and its acquisition is completed by 2;0 years of age.

The second part of the thesis concentrates on the development of the Turkish argument structure and discusses the acquisition of verbs with various argument frames within the theoretical framework of Prominence Theory proposed by Grimshaw (1992). Two major issues discussed in this part are the development of the syntax-semantics-morphology interface and the role of the agent in the acquisition of argument structures. The study provides evidence for a semantically based acquisition of the argument structures underlining the importance of the role of the agent in children's early grammar.

## KISA ÖZET

İlk Eylemler ve Türkçe Eylem Öge Yapılarının Edinimi

Fatma Nihan Ketrez

Bu çalışmada, Türkçe'yi anadili olarak edinen ve 1;1,19 - 3;3,3 yaşları arasındaki dil gelişimleri uzunlamasına incelenen dört çocuğun ilk eylemleri ve eylem öge yapılarını edinimleri incelenmektedir.

Çalışmanın ilk kısmında, üretilen ilk eylemler ve eylemin sözdizimsel bir ulam olarak ortaya çıkışı tartışılmaktadır. Bu çalışmada, incelenen çocukların, dil edinimlerinde, eylemin bir ulam olarak henüz gelişmemiş olduğu bir süreçten geçtikleri gösterilmektedir. Bu çocukların konuşmasında bir eylemi tanımlayan biçimbilimsel ve sözdizimsel özellikler 1;6 - 1;7 yaşları arasında ortaya çıkmakta ve eylem ulamının edinimi 2;0 yaşından önce tamamlanmaktadır.

Çalışmanın ikinci kısmında, eylem öge yapılarının edinimi üzerinde durulmakta ve farklı öge yapılarına sahip eylemlerin edinimi Grimshaw'ın (1992) Üstünlük Kuramı çerçevesinde incelenmektedir. Anlambilim-sözdizim-biçimbilim ilişkisinin gelişimi ve eden görevinin öge yapılarının edinimindeki rolü bu kısımda tartışılan başlıca konulardır. Bu çalışma dil ediniminin ilk evrelerinde, eylem öge yapılarının anlambilimsel temeller üzerine kurulduğunu ve eden görevinin dil ediniminde önemli bir rol oynadığını göstermektedir.

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## LIST OF ABBREVIATIONS

1P	first person plural
1S	first person singular
2P	second person plural
2S	second person singular
3P	third person plural
3S	third person singular
ABL	ablative
ACC	accusative
ADVR	adverbializer
AOR	aorist
ATR	attributive
BRO	the brother
CAUS	causative
CHI	the child
COM	comitative
DAT	dative
DIM	diminutive
FAT	the father
FUT	future
GEN	genitive
INS	instrumental
LOC	locative
MIŞ	(past, perfect or evidential) aspect marker
MOT	the mother
NAC	Mine's baby sitter
STR	stranger

NEG	negative
OPT	optative
PASS	passive
PAST	past
PL	plural
POSS	possesive
PROG	progressive
PROR	pronominalizor 'ki'
QUE	question
RECIP	reciprocal
REFL	reflexive
RELR	relativizor
TOP	topicalizor

## LIST OF SYMBOLS

%sit	situational information relevant to the utterance
&	(1) fusion of two mophemes (between two morphemes) (2) phonological fragment
(')	glottal stop sound.
(...)	When appears between two utterances, indicates that a part of the conversation is left out since it is considered to be irrelevant.
+	compound marker
+/	interrupted by another person
+//	self interruption
-	suffix marker

<b>(/2)</b>	<b>repeated twice</b>
<b>:</b>	<b>lengthening</b>
<b>@</b>	<b>different from adult speech/special form</b>
<b>@c</b>	<b>child invented form</b>
<b>@f</b>	<b>family specific form (nicknames etc.)</b>
<b>@i</b>	<b>interjection</b>
<b>@o</b>	<b>onomotopoeia</b>
<b>[*]</b>	<b>error</b>
<b>[?]</b>	<b>best guess</b>
<b>[/]</b>	<b>self correction</b>
<b>[: text]</b>	<b>replacement</b>
<b>[=! text]</b>	<b>paralinguistic events (crying, caughing etc.)</b>
<b>xxx</b>	<b>unintelligible utterance</b>
<b>xx</b>	<b>unintelligible word</b>
<b>www</b>	<b>untranscribed material</b>
<b>0</b>	<b>action without speech</b>
<b>Øsuffix</b>	<b>the suffix is not uttered</b>
<b>*Øsuffix</b>	<b>deletion of the suffix is ungrammatical</b>

## CHAPTER ONE

### INTRODUCTION

Since the second half of 1980s, the importance of verbs in a child's linguistic and cognitive development has been widely recognized. Verbs are considered to be the frames for larger linguistic expressions, the units responsible for the grammatical structure of the language, and the predictors of the various aspects of early grammatical competence. One of the major concerns of the recent studies on verbs has been the question of the acquisition of verb meanings and the development of argument structures, analyses of which are expected to provide significant implications not only for cognitive development of children but also for linguistic theory.

The aim of the present study is to give a detailed description of the acquisition of Turkish verbs by four monolingual children between 1;1-3;3 and to discuss the problems and implications of the development of argument structures. Although there have been various studies that focus on particular aspects of the acquisition of Turkish (among them are Aksu-Koç, 1984, 1988, 1994, 1997, in press; Aksu-Koç & Slobin, 1985; Çapan, 1981; Ekmekçi, 1982, 1986, 1987a, 1987b, 1989; Özbaydar, 1970; Savaşır, 1983; Savaşır & Gee, 1982; Slobin, 1986; Slobin & Aksu-Koç, 1982; Slobin & Talay, 1984; Sofu, 1995; van der Heijden, 1997a, 1997b; Küntay & Slobin, 1996), there has been no research done so far specifically concentrating on the acquisition of 'the

Turkish verb' as a syntactic category. Neither is there any detailed research on the development of argument structures and valency changes which could provide a significant insight especially into the recent discussions of syntax-morphology-semantics interface in linguistic theory. Hence, with this aim, the present study is conducted to investigate the emergence and the development of the category verb and Turkish argument structures.

### **1.1. The problem of language acquisition: an overview**

According to the Principles and Parameters approach (Chomsky, 1981) and subsequent work, human language can be characterized by its parameter settings- the choice of values for a particular rule system which, then, has an influence on the applicability of particular principles of grammar. In this approach, acquisition is achieved with the aid of the innate principles of the U(niversal) G(rammar)- the set of principles that define the variety of possible human languages.

There are two major views concerning the form a child's grammar can take during the acquisition period which differ in the degree of 'innateness', that is, the question of what is innate and what is learnt when the child is exposed to adult language. These are Continuity and Discontinuity Hypotheses.

According to the Continuity Hypothesis all principles of the UG are available and active at the onset of the language acquisition and do not develop or change over time. Throughout the acquisition period, a child's grammar allows structures that are ungrammatical in the language s/he is acquiring unless they violate the principles of UG. In other words, each child grammar is accepted to be a possible human grammar. The child cannot produce some structures simply because she has not yet mastered the respective structure which will be shaped through input and linguistic experience. Different aspects and consequences of this view are discussed in Clahsen (1992),

Goodluck & Behne (1992), Hyams (1986, 1992), Pinker (1984, 1989), Roeper & de Villiers (1992), Weissenborn (1992), Randall (1992), Wexler & Manzini (1987), Nichigauchi & Roeper (1987), among others.

According to the discontinuity view, on the other hand, the principles of grammar develop in time, or they "mature" biologically (Felix, 1992; Borer & Wexler; 1987) and especially at the very earliest stages of development children's grammar is characterized by lack of functional categories like tense, agreement, case and so on (Radford, 1990). In this view, in addition to UG, there is also an innate maturational schedule which determines when a child can produce a certain structure. In other words, principles of UG, themselves, mature and at a certain developmental stage a child's grammar is constrained only with the principles that have already emerged and it can violate those that have not matured yet (Felix, 1992).

## **1.2. Recent views on the acquisition of verbs**

In this section, recent views on the acquisition of verbs within three major hypotheses: continuity hypothesis, discontinuity hypothesis and another view, Verbs Island Hypothesis will be presented.

Within the continuity hypothesis, two major views, semantic and syntactic bootstrapping, are described in sections 1.2.1. below. Within the discontinuity view, on the other hand, the major arguments of Radford (1990) are discussed in section 1.2.2. In section 1.2.3., Tomasello's (1992) Verb Island Hypothesis, which is another leading view in the area of verb acquisition, is described and compared with the other views.

### 1.2.1. Continuity hypothesis

Studies done on the acquisition of verbs and argument structures within the framework of the continuity hypothesis gave rise to two major views; semantic and syntactic bootstrapping. Both theories are based on the assumption that verbs related in meaning tend to occur in similar syntactic structures. This view is illustrated by Zwicky (1971 quoted in Gleitman, 1990) as follows:

If you invent a verb, say *greem*, which refers to an act of communication by speech and describes the physical characteristics of the act (say a loud, hoarse quality), then you know that... it will be possible to greem (i.e., to speak loudly and hoarsely), to greem for someone to get you a glass of water, to greem at your sister about the price of doughnuts, to greem "Ecch" at your enemies, to have your greem frighten the baby... (p:195).

According to the semantic bootstrapping hypothesis, semantics of a verb is very much involved in the acquisition of its syntax; and according to the other view, the syntactic structure in which the verb occurs is used as a clue for acquiring its meaning. Major arguments of these views are as follows.

#### 1.2.1.1. Semantic bootstrapping

The hypothesis that the child uses semantic notions as evidence for the grammatical entities in the input is called "semantic bootstrapping" according to which, "the categorization of words can be inferred from their semantic properties, and their grammatical relations can be inferred from the semantic relations in the event witnessed" (Pinker, 1984:40). According to this hypothesis, a noun, for example, is "the name of a person or thing" and a verb is defined as the "action or change of state." It is assumed that a child first learns the meaning of a verb by observing in what situations and contexts it is used in the real world; therefore, the experience of the child is considered to be of major importance. As Pinker (1989:253) explains, "verb meanings correspond to concepts given by the child's perceptual and cognitive mechanism, and that to acquire them, the child

simply has to map a sound uttered in the presence of an exemplar of a concept onto the mental representation of that concept." Through this process called "Event-Category Labeling," the ambiguity of what a verb means in a single situation is "eliminated by the behavior of the verb across situations" (Pinker, 1989:254). When acquiring the verbs *fill* and *pour*, for example, filling a cup can be ambiguous, and the child has to observe that *pour* and not *fill* is used when water is put in a glass up to the halfway mark, and *fill* but not *pour* is used when the glass is left on a windowsill in a rainstorm long enough to make it full.

Once the child acquires the relevant semantic notion, semantic bootstrapping takes place and the syntactic structures are projected from the innate knowledge of the rules that map semantic structures; thus the correspondence between syntactic and semantic knowledge of a child is accepted to be innate and the rules that enable the linking of the two components of grammar are called "linking rules" (Pinker, 1989:248).

Clark (1995) reports that starting from an early period of development, children are sensitive to the semantics of the verbs in such a way that their knowledge of semantics is reflected on their syntactic development. In the children she analyzes the emergence of verbal inflections takes place according to the semantic classes that the verbs belong. The past tense marker *-ed* first appears on the accomplishment verbs- causative verbs that mark a change of state. Progressive marker *-ing*, on the other hand, first appears on activity verbs, while *-s* is restricted to the state verbs in the first stages of development.

In short, in semantic bootstrapping a child "bootstraps" into the language through the semantic structures of the words and builds up syntactic structures with the help of the semantic features embodied in the words.

### 1.2.1.2. Syntactic bootstrapping

According to syntactic bootstrapping view, on the other hand, a child can use the syntactic structures s/he observes as evidence to deduce meanings. As opposed to the semantic bootstrapping view, the child does not assign meanings to the actions or "pictures" that s/he "sees," but rather s/he "listens" to the syntactic structures in the input. In this approach "children's interpretation of extra linguistic events has been significantly modulated by their attention to linguistic events, namely the sub-categorization frames," and it is proposed that children "have a capacity and inclination to recruit this information source to redress the insufficiencies of observation" (Gleitman, 1990:194). This examination of structure as a basis for deducing the meaning is the procedure that is called "syntactic bootstrapping."

Gleitman (1990) who proposes this hypothesis states that there may be too many disadvantages and limitations of learning through experience and observation of the environment which was proposed by the followers of the semantic bootstrapping hypothesis. According to Gleitman (1990), there must be at least some features that are not observable in the environment. This is especially the case with the acquisition of verbs like *think* which are not performed physically. She also argues that different children may have different experiences and gives examples from the acquisition of visual terms like *look* and *see* by blind and sighted children whose experiences can never be the same.

She further argues that the learners may match different words with the same experience. Verbs like *give* and *take*, or *chase* and *flee* are the actions that are performed at the same time which result in the same visual experience. Finally, she states that caretaker speech is not a running commentary on scenes and events in view. The child rarely hears a phrase like *I am opening the door*, when somebody is opening a door, or someone can say *let's get some duck for dinner tomorrow* while throwing a ball. In that case, the child may think that /get/ is *throw* and /duck/ means *ball* (Gleitman, 1990:190).

Having considered these disadvantages, Gleitman (1990) proposes another source of information which derives from the linguistic (syntactic) contexts in which words occur in speech. This is the way a blind child can learn visual terms; syntax of the verbs *look* and *see* are different so the available information is provided for these children.

In a study done on samples collected from the speech of mothers to children under age two, it has been observed that mothers' speech provides the syntactic information required (Gleitman & Gleitman, 1994). Each of the 24 verbs that are frequently used by mothers occurred in distinctive type of structures and the semantic relatedness among these verbs was closely predicted by the degree of overlap in their syntactic features.

From an early age on children are observed to be sensitive to the syntactic frames in the input. In experiments, young children (16-18 months) can understand the semantic implications of subject versus object, and children between 22-24 months of age can distinguish transitive verbs from intransitive ones (Naigles, 1990). In acquiring verbs like *feed* and *eat* or *push* and *fall*, the number, rather than the position of the noun phrases was used as a syntactic clue (Gleitman & Gleitman, 1994). In these experiments, it was observed that the subjects were guessing the verb meaning by inspecting the situational context. They were aware of the fact that the syntactic structures in which verbs occur in the input determine the meanings of the verbs, that is, the syntactic properties of the verbs determine their argument taking properties.

To sum up, according to both bootstrapping theories argument structures of verbs are the reflections of their lexical semantic structures, and the mapping between the syntactic argument structure and the lexical semantic structure is innate. Both theories accept the grammar of children to be adult-like, that is, the lexical categories of the verbs and the arguments are not different from those of adults. The only difference between the two views is in the direction of the mapping, that is, the way children map their knowledge about either of the structures to the other one. Pinker (1989), on the other

hand, accepts the fact that children during a later stage of development make use of syntactic information to acquire new verbs or to reset the meanings of some verbs which are not very clear in the contexts they are used. This process which takes place after the acquisition of basic meanings through the process of "event category-labeling" is called "syntactic cueing" (Pinker, 1989; Gropen et al., 1991). According to Pinker (1994:385), semantic bootstrapping is "a theory about how the child begins learning syntax;" this theory does not totally reject syntactic mapping, but since the bootstrapping problem is "how do children break into the system at the very outset, when they know nothing about the particular language?" it is against the proposal of a syntactic "bootstrapping" theory. This is also accepted by Gleitman. She acknowledges that at the very beginning semantic factors must play a role in identifying the lexical items. She also accepts that "syntax is not going to give the learner information delicate enough, for example to distinguish among such semantically close items as *break*, *shatter*, *crumble*, and these distinctions are learned through observing the objects and events" (Gleitman, 1990:202).

As a result, the two theories are not very different from each other and the followers of both theories accept the fact that syntactic and semantic bootstrapping both help the child to acquire new lexical items. They both differ, however, from the other hypotheses that adopt the discontinuity view as will be discussed below in section 1.2.2.

### 1.2.2. Discontinuity hypothesis

In the discontinuity view, different principles of UG are genetically programmed to come into operation at different biologically determined stages of maturation. According to Radford (1990), for instance, children go through three stages of development: (i) precategorical stage, (ii) lexical stage, (iii) functional stage.

The earliest one-word utterances produced by young children are "acategorical," that is, they have phonological and semantic properties but lack

morphological and syntactic properties. The evidence for this conclusion is deduced from (i) the lack of inflections, (ii) the absence of productive phrasal or clausal structures, (iii) inability to parse adult speech into phrases properly and inability to respond to wh-questions. At around 20 months of age children enter the categorial stage throughout which their grammar shows evidence for lexical categories like noun or verb but still no evidence for the emergence of functional categories. At that stage children can produce lexical inflections (inflections like plural marker) that are attached to lexical categories and set the word order parameters. Their speech lacks features like finite verb inflections and nominative case marking which require the development of inflection, complement or determiner systems that start to appear in the next stage.

According to Radford (1990), at the one-word stage when the child's speech is agrammatical, the only operating component is the lexicon and the child is building up lexical items which have semantic and phonological properties. Since their grammar lacks morphological and syntactic properties for lexical items, the other modules appear to be "inoperative."

In this approach, the argument structures of predicates are acquired early since the thematic properties of predicates are an inherent part of their meaning, that is, the child has to know that a verb like *hit* is a two-place predicate which expresses a relation between an agent and a patient. Radford (1990) argues that children can comprehend but cannot produce these structures because of the fact that the expression of these structures requires the possession of the morphological and syntactic properties; that is, they do not yet have syntactic categories that the argument structures can be mapped onto.

At the lexical stage of development the child has an interface between the lexicon and the categorial component and hence has a mechanism which maps thematic argument structures into syntactic structures. This mechanism called "visibility" mediates mapping from "visible" (categorial) syntactic structures (Radford, 1990:244). The child's early speech has also a "saturation" mechanism that determines which arguments will be

projected into syntax and which will remain implicit. "Externalization" mechanism, on the other hand, determines which argument will be projected as an external argument. Children, Radford (1990) argues, also seem to show evidence of having developed a thematic externalization mechanism at the lexical stage which projects arguments into specific A-positions according to their thematic function. A typical position for an agent, for instance, is the external argument position although, there are some children who allow non-thematic factors to come into play in projecting arguments (Radford, 1990:251). To sum up, what characterizes the transition from acategorical stage to categorial one is the development of mapping mechanisms.

The functional stage, which follows the lexical stage, is characterized by the acquisition of functional word categories (e.g., auxiliaries, complementizers, and determiners) and their phrasal projections (Radford, 1995) These categories appear by two years of age.

In this approach, the A-movement in the grammars of children (Borer & Wexler, 1987) is argued to be subject to biological maturation. According to Radford, A-movement is not allowed since in child syntax the A-positions are theta assigned at the base structure. Therefore, movement from one position to another will result in multiple theta-marking which leads to the violation of the theta criterion.

Hence, the most significant distinction between the continuity and discontinuity hypotheses can be observed in the definition of the "child grammar" and "innateness."

Another recent hypothesis which differs from the previously discussed approaches in many respects has been proposed by Tomasello (1992). The main arguments of this view which focuses on the development of the verb category are as follows.

### 1.2.3. Another view: Verb-Island Hypothesis (Tomasello, 1992)

As opposed to the bootstrapping theories discussed above, Tomasello (1992), being a psychologist, adopts a social-communicative approach in which young language learners "learn new verbs *only* when they are participating in a joint attentional interaction (non-linguistically defined)."

According to this hypothesis, "in the beginning, syntactic devices are lexically specific (i.e., used for only some lexical items, e.g. the name of the one doing the hitting should be said before the word *hit*) and only later are linguistically decontextualized to other predicate terms (resulting in, e.g., agent)" (Tomasello, 1992:23). At first children have concepts like *hitter*, the one who hits; *goer*, the one who goes, and so forth. In time, they develop the concept of "agent" for all these terms. This is called Verb Island Hypothesis.

In this hypothesis, at the beginning children do not have the category of verb: until proved otherwise, "young children's early verbs are relational terms and relational terms are individual islands of organization in an otherwise unorganized grammatical system." In the earliest stages of development children learn verbs and their arguments on a verb by verb basis and "the ordering patterns and morphological markers" are not generalized to other verbs. Hence, learners do not have an adult-like verb category, as opposed to the bootstrapping theories which adopt a continuity approach to language acquisition.

A verb is defined as "any word whose conceptualization was a process and whose use was as a predicate" (Tomasello, 1992:35). With this definition Tomasello includes words like *more*, *off* and *hi* into the category of verbs. His hypothesis, which is based on a "child-centered" definition of verbs, is different from the theories discussed above which adopt adult-like syntactic categories.

Tomasello's (1992) subject Travis uses past forms of verbs with only change of state verbs and progressive forms only with activity verbs. This is exactly the same with Clark's (1996) findings which, Tomasello (1992) argues, indicate that Travis does not have a verb category, for if she did, the verbs in both groups would appear with both types of suffixes.

An example reported by Bowerman (1976, referred in Tomasello, 1992) supports this hypothesis. Bowerman's daughter Eva begins combining the verb *want* with different object labels and activity verbs at 17 months of age (*want juice*, or *want see*, etc.). At that time she can produce about 26 other verbs but they are used only in single word utterances; thus she does not generalize the properties of the verb *want* to other verbs. Bowerman concludes that "each word was treated as a semantic isolate in the sense that the ability to combine it with other words was not accomplished by a parallel ability to make two word utterances with semantically related words" (Tomasello, 1992:21).

Ninio (1996) considers this to be "quite typical of early speech" and calls the verbs like Eva's *want*, "path breaking verbs." They are those early verbs that appear "whenever there is a significant advance in verb syntax." They are not a random collection but rather, are those verbs that have generic features and they are the representatives of larger classes of verbs. In the acquisition period of the children Ninio (1996) analyzes, *go*, *move* and *stay* surface as such kinds of verbs and the later categorial knowledge is based on generalizations from these verbs.

This hypothesis, contrary to the other hypotheses, suggests an "item-based lexically specific syntactic learning" in which the early grammars of children are neither semantically nor syntactically organized, but is specific to particular verbs and predicates.

### 1.3. The acquisition of Turkish verbs

In the previous studies, the acquisition of Turkish verbs is analyzed from various points of views. Aksu-Koç & Slobin (1985) discuss different aspects of the acquisition of Turkish and give a brief account of the development of the inflectional and derivational verbal morphology. The frequency of the use of verbs and other syntactic categories and the order of emergence of different types of verbal and nominal inflections in children between 1;0-5;0 were reported in Baykoç-Dönmez & Arı (1992), Acarlar & Baykoç-Dönmez (1992) and in Güteryüz & Baykoç-Dönmez (1992). Aksu-Koç (1994) analyzes the narrative forms used by children between 3;0-5;0 and touches upon the use of different types of verbs and voice alternations used as different strategies by children. Aksu-Koç (1984) investigates the developmental relationship between the parameters of transitivity and pragmatic tools used in the short narratives produced by children between 3;0-6;0. Ekmekçi (1982), Çapan (1988) and Aksu-Koç (1997) analyze the development of verbal inflections in children between 1;3-2;4. Sofu (1995) studies the acquisition of lexicon and hence focuses on verbs as a lexical class and examines the word-making strategies in her subjects from different socio-economic classes. Van der Heijden (1997a) analyzes the acquisition of verbs by mono- and bi-lingual children between 2;0-3;6 years of age. She argues that at 2;0 "verbs are established as a separate word class" and she analyzes the verbs in terms of their lexical growth and derivation. Van der Heijden (1997b), on the other hand, concentrates on the acquisition of the verb *yap-* 'do/make' by mono and bilingual children.

The aim of the present study is to focus on the development of Turkish argument structure and to concentrate on the following research questions.

1. What is a verb for a child who has just started to speak? Does the child have an adult-like 'verb' category? If she does not, when and how does the 'verb' emerge?

2. How do the argument structures of the verbs develop?
3. When and how do the valency changes emerge?
4. Do verb morphology and verb syntax develop simultaneously?
5. What are the implications of the present study for the linguistic theory?
6. What are the implications of the present study for the cognitive development of a child?

## **CHAPTER TWO**

### **THE THEORETICAL FRAMEWORK AND TURKISH ADULT GRAMMAR**

This chapter presents a description of the Prominence Theory proposed by Grimshaw (1992) which is the theoretical framework of the present study and a description of Turkish adult grammar which the children are expected to acquire. As will be discussed in the following sections, major proposals of the Prominence Theory can be adapted to Turkish grammar and enable us to analyze the developmental features observed in the acquisition of Turkish verbs.

#### **2.1. Prominence Theory (Grimshaw, 1992)**

Prominence Theory analyzes the nature and the internal organization of argument structure (henceforth a-structure) representation, which Grimshaw defines as "the lexical representation of grammatical information about a predicate." In this framework, a-structure is "a structured representation over which relations of prominence are defined" rather than a set of arguments as proposed traditionally. More specifically, in Prominence Theory external argument is accepted to be higher in the argument structure than internal arguments and counts as asymmetrically c-commanding the internal arguments for the purposes of the Binding Theory (Chomsky, 1981).

In Prominence Theory, the fundamental assumption is that the a-structure of a predicate has its own internal structure which affects the grammatical behavior of the predicate in many ways. The organization of an a-structure is taken to be a reflection of its lexical semantics, so that the a-structure of a predicate should be derivable from the key characteristic of its meaning. A-structure has properties "by virtue of its role in the lexical meaning of the predicate," and as a consequence of this, a-structures cannot be altered by rules. In prominence theory, the properties of arguments are given "an organic characterization" within which the external argument is defined as the most prominent argument.

The fundamental goal of the theory is to derive a-structure from lexical semantics of the verb and then to derive the lexical behavior of a predicate and its d-structure from its a-structure representation. The basic assumption of the prominence theory is that the a-structure does not consist of just a set of arguments but is rather a structured representation which reflects prominence relations among arguments. An argument is considered to be internal or external "by virtue of its intrinsic relations to other arguments." Its status cannot be changed except by the introduction of another argument. The most prominent argument is external argument and the internal arguments have a prominence relative to each other. The most deeply embedded argument i.e., theme is the least prominent argument. For a verb like *announce* for instance the argument structure representation is as in (1).

(1)           *announce* (Agent (Goal (Theme))).

In the thematic hierarchy the agent is in the highest position. Then comes the goal and then the theme. Hence, the structural organization of the argument array is determined by the universal principles based on the semantic properties of the arguments.

In the structures like *announce* the most prominent argument in the a-structure is the syntactically most prominent argument, the subject. However, there are also the so-called psychological predicates like *fear*, *hate* or *admire* which have an experiencer as their most prominent argument.

$$(2) \quad \textit{fear} \quad \begin{matrix} (x & (y)) \\ \text{Exp.} & \text{Theme} \end{matrix}$$

In the *frighten* type of verbs, on the other hand, the most prominent argument, the experiencer does not occupy the subject position, in a sentence like *the thunder frightened the man*. According to Grimshaw (1992), these two classes of verbs (*fear* and *frighten*) have the same thematic prominence relation (shown in (2)) and they differ with respect to their aspectual properties, and thus their d-structure realizations differ.

The prominence relations are jointly determined by thematic and aspectual properties of the predicate. The evidence for the thematic aspect of a-structure comes from English compounds and the theta-marking of so-called light-verbs in Japanese.

In compounding, for instance, "when the head takes more than one internal argument, the least prominent must be inside the compound, and the more prominent must be outside." At least one argument must be satisfied outside the compound, and the prominence theory predicts that this is always the most prominent one. This explains the ungrammaticality of (3)b. In (3) *children* bears the role goal and it is more prominent than *gift*, the theme, hence the goal occurs outside the compound while the theme remains inside.

- (3)a.      Gift giving to children.  
           b.      \*Child-giving of gifts              (Grimshaw, 1992:14)

The evidence for the aspectual dimension of a-structure, on the other hand, comes from the behavior of the psychological predicates of *fear* and *frighten* classes. In the aspectual dimension events are divided into two aspectual subparts: activity and state. The argument that is the part of the first sub-event (activity) in event structure is more prominent than other arguments. A cause argument which is always a part of the first sub-event (activity) has more prominence than others. In both *fear* and *frighten* classes the experiencer is assigned more prominence than the theme. It is realized as the subject in the case of the former but not in that of the latter, since the aspectually most prominent argument for *frighten* class is not the experiencer but the theme.

In short, the syntactic realization of arguments is not a direct reflection of their thematic prominence. A-structure representation is derived from a combination of thematic and aspectual analysis.

Acknowledging the significance of the aspectual dimension, Grimshaw differentiates between two types of psychological predicates (i.e., agentives and causatives) which behave similarly on the surface but indeed have different a-structures as can be inferred from their semantics.

The thematic hierarchy proposed in Grimshaw is as follows:

- (4)
- Agent
  - Experiencer
  - Goal / Source / Location
  - Theme

Grimshaw's (1992) theory of A-structure does not contain any information about theta-roles. Argument structure "represents the argument-licensing capacity of a predicate without specifying any semantic information about its arguments, except for

their relative prominence. Introduction of relations into the a-structure makes it possible to eliminate reference to theta-role labels. Thematic roles are "purely lexical conceptual labels and do not project into the grammatical representation."

The argument prominence representations for the different types of verbs presented in Grimshaw (1992) are as follows:

(5)a.	Transitive agentive (x            (y)) Agent        Theme	<i>break</i>
b.	Ditransitive (x    (y    (z)) Agent Goal Theme	<i>give</i>
c.	Unergative (x) Agent	<i>run</i>
d.	Psychological State (x            (y)) Experiencer Theme	<i>fear</i>
e.	Psychological Causative ((x            (y))) Experiencer Theme	<i>frighten</i>
f.	Psychological Agentive (x            (y)) Agent        Experiencer	<i>frighten</i>
g.	Unaccusative ((x)) Theme	<i>fall</i>

The verbs in (5) a-d and f have external arguments. Psychological Causatives, on the other hand, have an argument which has maximal aspectual prominence, as a result it is not qualified as external argument. The verbs of the unaccusative class also lack an external argument. Since only one argument can meet the criterion of maximal prominence, no predicate has more than one external argument.

The external argument is to be the most prominent argument of a predicate along both thematic and aspectual dimensions. The notion of external argument is distinct

from that of d-structure subject. All external arguments are d-structure subjects but not all d-structure subjects are external arguments.

The a-structure of a predicate can only change with the introduction of a new argument into the structure or with the suppression of an already existing argument. Within this framework the passive formation, for instance, is realized by the suppression of the external argument of the verb. As opposed to what has been proposed in Jaeggli (1986), the Theme in the object position does not move to the subject position which is still occupied by the suppressed external argument, but functions as the subject of the passive verb. As a result of this process the following structure is derived.

- (5) h.      Passive  
               (x- $\emptyset$  (y))  
               Agent Theme

The analysis of the argument structures of Turkish verbs within the theoretical framework of Prominence Theory is presented in section 2.2 below.

## **2.2. Turkish verbs and argument structures**

In this section, we will describe Turkish verbs and argument structures. In section 2.2.1. below, we will give a brief account of the morphological structure of the verbs. After that, in section 2.2.2. the analysis of the argument structures of Turkish verbs will be presented within the theoretical framework of the Prominence Theory.

### **2.2.1. The morphological structure of Turkish verbs**

The morphological structure of Turkish verbs is presented in two subsections below. Section 2.2.1.1. describes the inflectional morphology of Turkish verbs. Section

2.2.1.2. provides a description of the derivational morphology concentrating on the voice suffixes such as passive, causative, reflexive and reciprocal.

### 2.2.1.1. Inflectional morphology

Turkish is an agglutinative language in which affixation is mainly realized by means of suffixation. The inflectional verbal affixes mark tense/aspect, modality, negation, number and person.

The tense/aspect suffixes are present progressive (*-Iyor*), aorist (*-Ir*), reported past (*-mIs*), future (*-(y)AcAK*) and definite past (*-DI*) that are applied to the verb roots with proper phonological variants determined by the vowel and consonant harmony rules.

Modality is marked with the necessitative (*-mAIl*), abilitative (*-(y)AbIl*), potential (*((y)AbIl*), and conditional (*-sA*) suffixes (Aksu-Koç, 1988:17) and person suffixes mark the subject-verb agreement and have four paradigms as shown in (6).

(6)	I.	II.	III.	IV.
1S	<i>-(y)Im</i>	<i>-m</i>	<i>-(y)Im</i>	-
2S	<i>-sIn</i>	<i>-n</i>	<i>-sIn</i>	Ø
3S	Ø	Ø	<i>(-sIn)</i>	<i>-sIn</i>
1P	<i>-Iz</i>	<i>-k</i>	<i>-Allm</i>	-
2P	<i>-sInIz</i>	<i>-nIz</i>	<i>-sInIz</i>	<i>-In(Iz)</i>
3P	<i>-lAr</i>	<i>-lAr</i>	<i>-lAr (sInlAr)</i>	<i>sInlAr</i>

The first paradigm is applied after the present progressive (*-Iyor*), the aorist (*Ir*), the reported past (*-mIs*), the future (*-yAcAK*) and the copula. The second paradigm is limited to the definite past tense and to the conditional mood. The third paradigm is

restricted to the optative (-yA). The third person form of the optative is usually replaced with the third person form of the fourth paradigm which is restricted for the imperative.

The negative marker (-mA) precedes the other inflectional markers which follow derivational suffixes that include those that mark voice.

### 2.2.1.2. Derivational morphology

The derivational suffixes that will be discussed are those affixes which result in a valency change in the verbs. These are passive, causative, reciprocal and reflexive suffixes that derive new verbs from other verbal stems with a predictable meaning.

#### 2.2.1.2.1. Passive

Turkish passive is formed by the attachment of the passive suffix *-Il* to the stems that end in a consonant other than lateral (e.g., *aç-il-* 'be opened'), the suffix *-In* to those stems that have *-l* (e.g., *kal-in* 'be stayed') and *-n* to the stems that have a vowel in the final position (e.g., *elle-n-* 'be touched').

In Turkish, passive is very rare especially in informal so-called "unplanned speech" (Tarzi, 1983). Despite that, all Turkish verbs (except those that have non-human subjects such as *havla-* 'bark') can be passivized.

**Personal and impersonal passives:** Passive morpheme can be attached to transitive as well as intransitive verbs and results in the suppression of the argument that has the agent or the experiencer role (Özsoy, 1990; Taneri, 1996), or the "reduction of the first argument position" (van Schaaijk, in press).

Transitive verbs when marked with the passive suffix agree in person and number with the internal argument that is moved to the subject position (7).

- (7) a. Aylin ben-i partiy-e davet+et-ti.  
Aylin I-ACC party-DAT invite-PAST  
'Aylin invited me to the party'
- b. Ben parti-ye davet+ed-il-di-m/\*Ø.  
I party-DAT invite-PASS-PAST-1S/\*3S  
'I was invited to the party'

Passives derived from intransitive verbs, on the other hand, lack a surface subject and as a consequence, have an impersonal reading (8).

- (8) a. Herkes Ankara-ya otobüs-le gid-er.  
everybody Ankara-DAT bus-INS go-AOR  
'everybody goes to Ankara by bus'
- b. Ankara-ya otobüs-le gid-il-ir.  
Ankara-DAT bus-INS git-PASS-AOR  
'(One) goes to Ankara by bus'

In those verbs that have an indirect object, the indirect object does not function as the subject as it cannot bear the nominative case, neither can it agree with the verb in person and number as in (9).

- (9) a. Hemşire hasta-lar-a bak-tı.  
nurse patient-PL-DAT look+after  
'The nurse has looked after the patients.'
- b. Hasta-lar-a bak-ıl-dı/\*lar.  
patient-PL-DAT look+after-PASS-PAST/\*1P  
'The patients were looked after.'

Impersonal passives can also be derived from the transitive verbs whose direct object is non-specific and not marked overtly with an accusative suffix. In such instances, as exemplified in (10), the NP must be adjacent to the verb (Kornfilt, 1997:324).

- (10) a. Öğrenci-ler bütün gün gitar çal-dı.  
student-PL all day guitar play-PAST  
'The students played the guitar all day!'
- b. Bütün gün gitar çal-ın-dı.  
all day student-PL guitar play-PAST  
'All day the guitar is played (by the students).'

As seen in (11) the argument that is suppressed as a result of the passive derivation can reappear in an adverbial phrase which is formed by the postposition *tarafından*.

- (11) a. **Sinderella balo-ya davet+ed-il-di.**  
Cinderella ball-DAT invite-PASS-PAST  
'Cinderella was invited to the ball'
- b. **Sinderella kral tarafından balo-ya davet+ed-il-di.**  
Cinderella king by ball-DAT invite-PASS-PAST  
'Cinderella was invited to the ball by the king'

The occurrence of the phrase *tarafından* is restricted to those passives that are formed by transitive verbs and is not allowed in intransitive structures as in (12).

- (12) a. **Sinderella balo-ya git-ti.**  
Cinderella ball-DAT go-PAST  
'Cinderella went to the ball'
- b. **Balo-ya gid-il-di.**  
ball-DAT go-PASS-PAST  
'(everybody) went to the ball'
- c. **\*Balo-ya Sinderella tarafından gid-il-di.**  
ball-DAT Cinderella by go-PASS-PAST  
'to the ball was gone by Cinderella'

Turkish allows two or more passive morphemes attached to their stems (13).

In such structures the second passive suffix is considered to be a "passive intensifier" (Özkaragöz, 1986:78) since it serves to intensify or emphasize the passive feature of the verb and disambiguates it from the homophonous reflexive suffix.

- (13) a. **Dondurma yaz-in yen-ir.**  
icecream summer-ADVR eat-PASS-AOR  
'icecream is eaten in the summer'
- b. **Dondurma yaz-in ye-n-il-ir.**  
icecream summer-ADVR eat-PASS-PASS-AOR  
'icecream is eaten in the summer'

**Middle passives:** Those passive verbs in which an agent is arbitrary and irrelevant are accepted to have middle reading (Göksel, 1993:399). These verbs are used to describe states or changes of states that the objects undergo and in such structures the property described by the verb does not necessarily result from the action performed by an agent (14) but rather, as Savaşır & Gee (1982:610) state, it "arises out of the properties of the object" itself.

- (14) **Kapı aç-ıl-dı.**  
 door open-PASS-PAST  
 'The door opened'

Since these verbs are homophonous with the passive and reflexive verbs ambiguity arises. The verb in (14) can be interpreted either as 'somebody opened the door' or as 'the door opened by itself'.

In Kornfilt (1997) these forms are considered to be closer to the reflexive than to the passive from a semantic point of view and Sebüktekin (1971) categorizes them as reflexive-passives. In Underhill (1976:336), middle morpheme is considered to be a suffix that simply derives intransitive verbs from transitive ones rather than expressing a "passive sense."

There are very rare instances where the middles differ from the personal passives phonologically. *Kavrul/kavurul* and *savrul/savurul* are such verbs. In example (15) below the leaves are interpreted to be scattered around by an agent, in (16), however, there is not an agent who performs the action.

- (15) **yaprak-lar savur-ul-du.**  
 leaf-PL scatter-PASS-PAST  
 The leaves were scattered.
- (16) **yapraklar savr-ul-du.**  
 leaf-PL scatter-PASS-PAST  
 The leaves scattered.

The presence of *tarafından* agentive phrase in middle constructions restricts the reading expressed. In (17)a the shanties could be interpreted to have collapsed in an earthquake, whereas in (17)b there is an agent who is responsible for the action/state.

- (17) a. **Gecekondu-lar yık-ıl-dı.**  
 shanty-PL destroy-PASS-PAST  
 'The shanties collapsed'
- b. **Gecekondu-lar belediye tarafından yık-ıl-dı.**  
 shanty-PL municipality' by destroy-PASS-PAST  
 'The shanties were demolished/ \*collapsed by the municipality'

To sum up, middle structures differ from other passive structures since for them an agent is irrelevant; they describe the properties of their subjects; they do not have active counterparts; the agentive phrase restricts their meaning. They differ also from reflexives, since in middles the subject is a theme, whereas in reflexives it is an agent or an experiencer, in other words, middles are unaccusative, reflexives are unergative verbs.

#### 2.2.1.2.2. Reflexive

The reflexive is formed by the attachment of the reflexive suffix *-In* to a number of transitive verbs in which the agent can perform an act on himself. Contrary to the passives they are not productive in Turkish. In reflexives, as exemplified in (18), the suppressed element is the internal argument of the verb which is coreferential with the subject.

- (18) **Ayşe sakla-n-dı.**  
 Ayşe hide-REFL-PAST  
 'Ayşe hid herself'

The reflexive suffix, like passive suffix, triggers the suppression of one of the arguments of the verb, in this case, the internal argument of the verb, and, as a result, an intransitive verb is formed. Since the reflexive suffix is homophonous with the passive

suffix, ambiguity arises. Hence (18) can be interpreted as *arkadaş-lar-ı Ayşe-yi sakla-dı*, 'her friends hid Ayşe', as well. In those cases where the subject of the sentence does not have the property of being able to perform the action, that is, when it is inanimate it is interpreted to be a passive and never a reflexive verb, as in (19-20).

(19) **Cadde-ler yıka-n-dı**  
street-PL wash-PASS-PAST  
'The streets were washed'

(20) **Hediye-ler sakla-n-dı**  
present-PL hide-PASS-PAST  
'The presents were hidden'

Some verbs that are marked with *-Il*, which is the canonical passive suffix, will be considered to be reflexive verbs in the present study since they are considered to be describing reflexive actions (21-22).

(21) **Orman-da-ki parti-ye zürafa da kat-ıl-mış**  
forest-LOC-REL party-DAT giraffe too add-REFL-MIS  
the giraffe, too, attended the party at the forest.

(22) **Atlet yarış-tan çek-il-di.**  
Runner race-ABL withdraw-REFL-PAST  
The runner withdrew himself from the race.

### 2.2.1.2.3. Causative

Morphological causative in Turkish is formed by the attachment of the causative suffix which has five variants (*-t*, *-It*, *-Ir*, *Ar*, or *-Dir*). *-t* is attached to polysyllabic stems ending in a vowel, /l/ or /r/ (e.g., *imzala-t* 'have someone sign'); Monosyllabic verbs idiosyncratically take one of the suffixes *-It*, *-Ir*, and *-Ar* (e.g., *düş-ür* 'drop', *sark-ıt* 'make something come down'). *-Ir* and *-Ar* are attached only to the intransitive verbs, whereas others can be attached to both transitive and intransitive verbs. *-Dir* appears elsewhere (e.g., *bak-tır-* 'make someone look', *kariş-tır-* 'mix'). Causative

morpheme, contrary to reflexive and passive morpheme, results in the introduction of a new argument into the structure.

Causative can be formed both from transitive and intransitive verbs. When the causative morpheme is attached to intransitive verbs the causee appears with accusative marking (23). When transitive verbs are causativized, the causee appears with the dative case marking while the direct object is marked accusative (24).

- (23) a. Çocuk gül-üyor  
child laugh-PROG  
'The child is eating'
- b. Anne-si çocuğ-**u** gül-**dür-üyor**  
mother-POSS&3S child-DAT gül-CAUS-PROG  
'Her mother is making her laugh'
- (24) a. Çocuk şapka-sı-nı giy-di  
child hat-POSS&3S-ACC put+on-PAST  
'The child put on his hat'
- b. Anne-si çocuğ-**a** şapka-sı-nı **giy-dir-di**  
Mother-POSS&3S child-DAT hat-POSS&3S-ACC put+on-CAUS-PAST  
'His mother had the child put on his hat'

Turkish allows two or more causative suffixes attached to the same stem. In the following example, the first causative suffix derives the transitive 'take off' from the intransitive come+out. The other suffixes add new arguments.

- (25) şapka-ları-nı **çık-ar(t)-tır-dı-m.**  
hat-POSS&3P-ACC come+out-CAUS(-CAUS)-CAUS-PAST-1S.  
'I made someone take their hats off'

#### 2.2.1.2.4. Reciprocal

Reciprocal verbs are formed by the affixation of *-ış* and express actions "done by more than one subject, one with another, or one to another" (Lewis, 1967:144).

In such structures the reciprocal verb requires either a plural subject or two or more singular subjects conjoined by a conjunction such as *ile* 'with' or *ve* 'and' (26).

- (26) a. **Genç çift-ler öp-üş-üyor-lar.**  
 young couple-PL kiss-RECIP-PL  
 'The young couple are kissing eachother'
- b. **Esra ile Fikri öp-üş-üyor-lar.**  
 Esra with Fikri kiss-RECIP-PL  
 'Esra and Fikri are kissing eachother'

Similar constructions are formed by using reciprocal pronoun *birbiri* 'eachother'. The verbs like *yazış-* 'write to eachother' and *tanış-* 'meet eachother' that describe a two-way relationship can also occur with singular subjects and an object that is marked with a commitative suffix, as exemplified in (27).

- (27)a. **Işıl'la Özge iki yıl-dır birbirleri-ne mektup yaz-ıyor-lar.**  
 Işıl-COM Özge two year-ADVR eachother-DAT letter write-PROG-3P.  
 'Işıl and Özge are writing letters to eachother for two years'
- b. **Işıl'la Özge iki yıldır yaz-ış-ıyor-lar.**  
 Işıl-COM Özge two year-ADVR write-RECIP-PROG-3P.  
 'Işıl and Özge are writing to eachother for two years'
- c. **Işıl iki yıldır Özge'yle yaz-ış-ıyor.**  
 Işıl two year-ADVR Özge-COM write-RECIP-PROG.  
 'Işıl is writing to Özge for two years'

The use of reciprocal suffix is restricted only to certain verbs. Verbs which do not take this suffix express this relation through *birbiri* 'eachother'.

- (28) a. **Özge ve Murat birbirlerini düşün-üyor-lar**  
 Özge and Murat eachother think-PROG-3P  
 'Özge and Murat are thinking of eachother'
- b. **\*Özge ve Murat düşün-üş-üyor-lar.**  
 Özge and Murat eachother think-RECIP-PROG-3P  
 'Özge and Murat are thinking of eachother'

In addition to these, there are also reciprocal verbs that describe a general event in which the action is performed by a group collectively and not necessarily directed to another group of people<sup>1</sup>.

- (29) **Çocuk-lar bağır-ış-ıyor.**  
 child-PL shout-RECIP-PROG  
 'The children are shouting together'
- (30) **Adam-lar kaç-ış-tı-lar.**  
 man-PL run+away-RECIP-PAST-3P  
 'The men ran away (to different directions).'

This group of verbs are accepted to be "irregular reciprocals" since they do not express an "each other relation" (Kuruoğlu, 1994:129) and do not allow objects with *-(y)lA* suffix.

When a reciprocal suffix occurs with the other voice suffixes, it precedes the others. It can never occur with reflexive suffix (31).

- (31) **bak-ış-tır-ıl-dı-lar**  
 look-RECIP-CAUS-PASS-3P  
 'they were made to look at each other'

### 2.2.2. Turkish argument structure

The following is a classification of the Turkish verbs and their argument structures within the framework of the Prominence Theory (Grimshaw, 1992) discussed above.

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<sup>1</sup> In Turkish, there is also another class of verbs that are derived with the attachment of suffix *-Is*. The verbs like *yapış-* 'stick' are such kind of verbs but the resultant meaning of such verbs is different from the stem from which the verbs are derived. These are not considered to be reciprocal verbs in the present study.

### 2.2.2.1. Transitive agentive

Those verbs that have an agent as their external argument and theme as their internal argument are classified under the category of transitive agentive verbs. These are verbs like *aç-* 'open', *kır-* 'break', *ye-* 'eat'.

- (32) **aç-a-lım-mı** kitab-ı? Azra's father-1;3,6  
 open-OPT-1P-QUE book-ACC  
 'shall we open the book?'
- (33) peki biz sabah kahvaltı-da ne **yi-yor-uz**? Azra's mother-1;11  
 OK we morning breakfast-LOC what eat-PROG-1P  
 'OK, what do we eat at breakfast?'

In addition to these, those verbs that have causative morphology are also included into this category. *Pişir-* 'cook', *giydir-* 'dress', *bitir-* 'finish', *şişir-* 'blow', *kaynat-* 'boil', are some of the examples.

- (34) sonra çocuğ-u anne-si **giy-dir-iyö.** Deniz's mother-1;10,19  
 then child-ACC mother-POSS&3S dress-CAUS-PROG  
 'then his mother dresses the child'
- (35) bu-nu ancak baba **şiş-ir-ebil-ir** Mine's mother-1;10,21  
 this-ACC only daddy inflate-CAUS-POT-AOR  
 'only daddy can blow this'

### 2.2.2.2. Unergatives

Those intransitive verbs that have an agent as their external argument are classified as unergative verbs. These are verbs like *gel-* 'come', *ağla-* 'cry', *zıpla-* 'jump', *koş-* 'run' *dans+et-* 'dance' and *gül-* 'laugh'.

- (36) nasıl(l) **zıplı-yo(r)** havhav@c? Azra's mother-1;10,4  
 how jump-PROG dog  
 'how is the dog jumping?'

- (37) **hadi şimdi dans+ed-e-lim!** Deniz's mother-2;0,4  
 come+on now dance-OPT-1P  
 'come on, let's dance now!'

The verbs that bear reflexive morphology are also classified under this category. *Sallan-* 'swing (oneself)', *saklan-* 'hide (oneself)', and *yıkan-* 'have bath' are some of them.

- (38) **çocuk da güzel+güzel salla-n-ıyor** Mine's mother-2;1  
 child TOP nicely swing-REFL-PROG  
 '(And) the child is swinging nicely'
- (39) **gel sakla-n-a-lım.** Deniz's mother-2;0,4  
 come hide-REFL-OPT-1P  
 'come, let's hide (ourselves)'

### 2.2.2.3. Ditransitives

These verbs have an agent as their external argument and have two internal arguments. *Ver-* 'give' and *koy-* 'put', as exemplified in (40-41) are the examples.

- (40) **süt-mü ver-e-lim bebek-ler-e?** Azra's mother-1;6,11  
 milk-QUE give-OPT-1P doll-PL-DAT  
 'shall we give milk to the dolls?'
- (41) **o teyb-in iç-i-ne kaset-ler-i koy-uyor-uz.** Azra's mother-1;10,4  
 that tape recorder-GEN&3S inside-POSS&3S-DAT cassette-PL-ACC put-PROG-1P  
 'we are putting the cassettes in that tape recorder'

Some of the verbs that bear causative morphology, too, are classified as ditransitive verbs: *giydir-* 'dress', and *doldur-* 'fill' are such verbs.

- (42) **kamyon-a bir+şey dol-dur-muş-lar** Mine's mother-2;1  
 truck-DAT something fill-CAUS-MIŞ-3P  
 '(They) have filled the truck with something'

#### 2.2.2.4. Psychological state

Those verbs that have an experiencer as the external argument and a theme as the internal argument are classified under psychological state verbs. These are the verbs like *gör-* 'see', *iste-* 'want' and *sev-* 'like'<sup>2</sup>.

- (43) sen **bil-iyö-mu-sun** havhav@c-in ad-ı-mı? Azra's mother-1;10,4  
 you know-PROG-QUE-2S dog-GEN&3S name-POSS&3S-ACC  
 'Do you know the dog's name?'
- (44) birdenbire ayı-cıĝ-ı **hatırla-dı-lar.** Mine's mother-2;2  
 suddenly teddy-DIM-ACC remember-PAST-3P  
 'They have suddenly remembered the little teddy'
- (45) sen-i en çok kim **sev-iyor?** Mine's mother-1;10,21  
 you-ACC most who like-PROG  
 'who likes you the most?'

#### 2.2.2.5. Psychological causative

These are the verbs that do not have an external argument but whose theme occur in the subject position. They have an experiencer as their internal argument. The verbs *rahatlat-* 'relax', or *endişelendir-* 'worry' are psychological causative verbs in Turkish. (*İşe*) *yara-* and *yakış-* are the other examples that are accepted to be in this category in Kartal (1995).

- (46) ay çok **rahatla-t-tı** ben-i. Deniz's mother-2;0,4  
 oh very relax-CAUS-PAST I-ACC  
 'oh (it) relaxed me very much'

<sup>2</sup> The verb *sev-* 'like' is considered to be a transitive agentive verb in the cases like the following where it refers to carressing:

- (i) Mine de küçük midilli-yi **sev-iyor.** Mine's mother-1;11,23  
 Mine TOP little pony-ACC carress-PROG  
 '(And) Mine is carressing the little pony'

### 2.2.2.6. Psychological agentive

These are the verbs that have an agent as their external argument and an experiencer as their internal argument. *Rahatsız et-* 'disturb', and *korkut-* 'frighten' are examples for these:

- (47) niye biz-i böyle **kork-ut-uyo-sunuz?** Deniz's mother -2;0.4  
 why we-ACC like this fear-CAUS-PROG-2P  
 'why do you frighten us like this?'
- (48) siz beni **rahatsız+ed-iyo-sunuz.** Deniz's mother-2;0,4  
 you I-ACC disturb-PROG-2P  
 'you are disturbing me'

### 2.2.2.7. Unaccusatives

These are those intransitive verbs that do not have an external argument and whose internal argument, which is a theme functions as the subject.

- (49) o or(a)-da **dur-ucak.** Azra's mother-1;11  
 it there-LOC stay-FUT  
 'It (taperecorder) will stay there'
- (50) ne **ol-muş** ay-a tatlı-m Azra's mother-1;10,4  
 what happen-MIŞ moon-DAT honey-POSS&IS  
 'what happened to the moon, honey?'
- (51) balık-lar ora-ya mı **düş-müş?** Mine's mother-1;10,9  
 fish-PL there-DAT-QUE fall-MIŞ  
 'have the fish fallen there?'

The verbs that bear passive morphology are also included in this category.

*dök-ül-* 'drop', and *kır-ıl-* 'break' are some of such unaccusative verbs.

- (52) Azra bütün şeker-ler **dök-ül-üyo.** Azra's mother-1;11  
 Azra all candy-PL spill-PASS-PROG  
 'Azra, all the candies are spilled'

- (53) ama sen-in-ki **kır-ıl-dı.**  
 but you-GEN&3S-PROR break-PASS-PAST  
 'but yours broke'

Deniz's mother-1;10,9

Verbs like (*gece*) *ol-* 'be night time', (*yağmur*) *yağ-* 'rain' are also included in this category.

- (54) tatlı-m gece **ol-du.**  
 dear-POSS&3S night be-PAST  
 'honey, it is night time'

Azra's mother-1;3,6

To sum up, in this chapter the theoretical framework of the study and Turkish verbs and argument structures are described. As will be seen in the following discussions, Prominence Theory which is based on a semantically-based organization of the arguments handles the developmental features observed in the acquisition of Turkish verbs. Major proposals of the theory, such as the analysis of the agent as the most prominent argument and the treatment of passive structures as an outcome of a mechanism that suppresses the external argument will enable us to explain the developmental characteristics observed in the children's argument structures.

## **CHAPTER THREE**

### **THE DATA<sup>3</sup>**

The study is based on the spontaneous speech samples of four monolingual Turkish girls recorded longitudinally between the ages 1;1,19 and 3;3,3. In section 3.1 below, the subjects are introduced and in the following section 3.2., the methodology of the study is described.

#### **3.1. The subjects**

Following are the description of the subjects. In section 3.1.1 their families and background are described. In the following section, in 3.1.2, the sessions and the frequency of the recordings are listed. 3.1.3., on the other hand, is an overview of their language development. The complete list of the recordings which present each child's age, MLU, total number of morphemes and total number of utterances on each session are given on Appendix I.

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<sup>3</sup> The data analysed in this study are the data collected for Prof. Dr. A. Aksu-Koç's research "A Longitudinal Study of the Acquisition of Turkish: The Second Phase" (project no:96S0017) supported by Boğaziçi University Research Fund.

### 3.1.1. Background of the subjects

All the subjects in the study are the daughters of university-educated parents living in İstanbul. The families belong to middle or upper middle class and all the parents speak standard modern Turkish.

Azra is the only child of her family. Her mother is a professor of English literature and her father is a finance director. Her parents both work and she attends a kindergarten. Until she was 1;3 she was taken care of by a baby-sitter during the daytime. She lives in a Turkish speaking environment but both at home and at the kindergarten she attends she occasionally hears English as well.

Deniz, too, is the only child of the family. Her mother is a psychologist and her father a medical doctor. She is taken care of by one of her grandmothers when her mother goes to work. One of her grandmothers is German and speaks Turkish with a slight German accent. At home, they always speak in Turkish but she hears her relatives speaking in German, too. She does not understand German; however, in her speech there are some German words like *omi* 'grandmother' or *tante* 'aunt' that are treated as Turkish words by the child.

Mine is the second child of the family. She has a psychologist mother, a mechanical engineer father and a brother, Ali, who is two and a half years older than Mine. Her parents both work and she is taken care of by a baby sitter.

Tuna's mother is a graduate student in psychology and her father is a businessman. She lives with her parents and baby-sitters in a crowded and noisy home environment. They have a dog, Arko and a bird Hazo who often take part in the recordings. She has baby brother who was born when she was 1;4,26. She also has an elder step sister who lives in another house and occasionally visits them. The stepsister is very fluent in French and she is encouraged to speak in French with Tuna.

### 3.1.2. The recordings

The recordings of Azra were done by one of the parents, mostly by the mother, at late afternoons at their own residence. Her recordings start when she was 1;1,19 and her speech was recorded once a month until 1;3,6. Then, there is a big interval of three months and at 1;6, 11 she was recorded again. Between that age and 1;10,4 and between 2;1,29 and 2,9,25 there are again two big intervals. Despite the gaps in her data collection, her samples are considered to be representative of the grammatical development of a Turkish child at these ages and hence they are included into the study. She is not a very talkative child. During the recordings she does not speak much and rarely produces ungrammatical utterances.

Deniz's recordings, which were done about twice a month by the mother, start when she was 1;3.3 and ends at 2;0,4. Her father and her grandmother whom she calls 'oyi' or 'omi' occasionally take part in the recording sessions. She is a very talkative but a competent speaker. She rarely produces errors.

Mine's recordings start when she was 1;6,21. She was recorded until 2;10, about once a month either by the mother or by her baby sitter, Naciye Abla. Her father and brother, too, take part in the first recordings. She is very talkative. She speaks a lot and tries to build up complex structures which very frequently result in errors.

Tuna's recordings start at 1;3,20 when she was the only child of the family. Then at 1;4, 26, her baby brother was born. At the beginning of the data collection she was recorded everyday by the mother and then the interval between the sessions were expanded. Her last recording was done at 1;7,15. She does not talk much during the recordings. Most of her speech consist of one-word utterances.

### 3.1.3. Language development

The MLU rates which is based on the number of morphemes in each utterance are shown on Tables 1-5. Azra's recordings start from the prelinguistic stage and her MLU is accepted to be 0.00 at the first session. The highest MLU is 5.13 which is recorded at 2;11,14. Deniz's MLU is 1.94 at the first session and it rises up to 4.32 at 2;0,4. Mine's recordings start when her MLU is 1.49 and the highest MLU in her speech is 5.75 which is recorded at 2;7. As seen in the Tables 1-5, the MLU of Azra, Mine, Deniz and Tuna are almost the same especially during the first months of the recordings. Around 1;6, an increase is observed in the MLU of Azra, Deniz and Mine. Tuna's MLU, however, remains the same until the last recording at 1;7.

In terms of the development of the grammatical processes and certain morphemes, too, Tuna, is observed to be considerably slow in development when compared with the other subjects and speech samples are considered to be representative of only the first phases of development. Therefore, her data is included only in the first phases. Deniz, in the course of development goes ahead of the other subjects and is observed to be going through the developmental stages earlier than the others.

Besides these individual differences observed in Deniz and Tuna, all the subjects go through similar developmental phases, providing evidence for difficulty in similar issues.

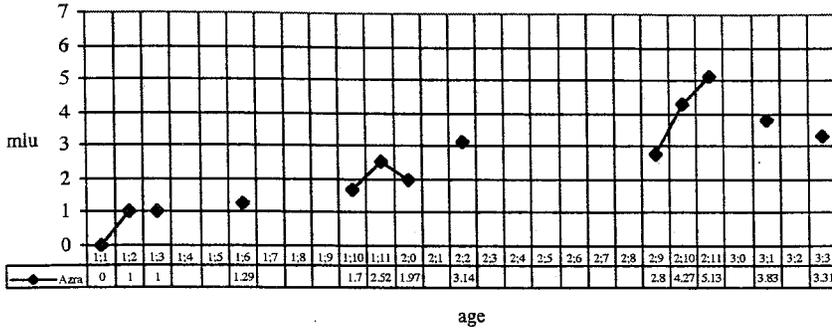


Table-1: AZRA: MLU

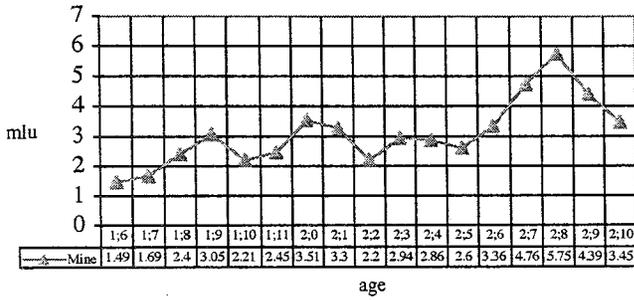


Table-3: MİNE: MLU

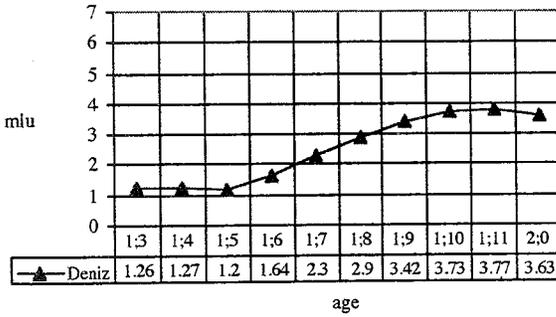


Table-2: DENİZ: MLU

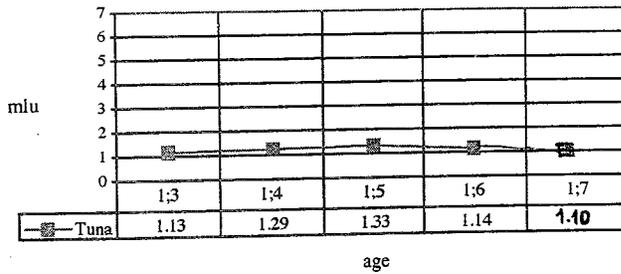


Table-4: TUNA: MLU

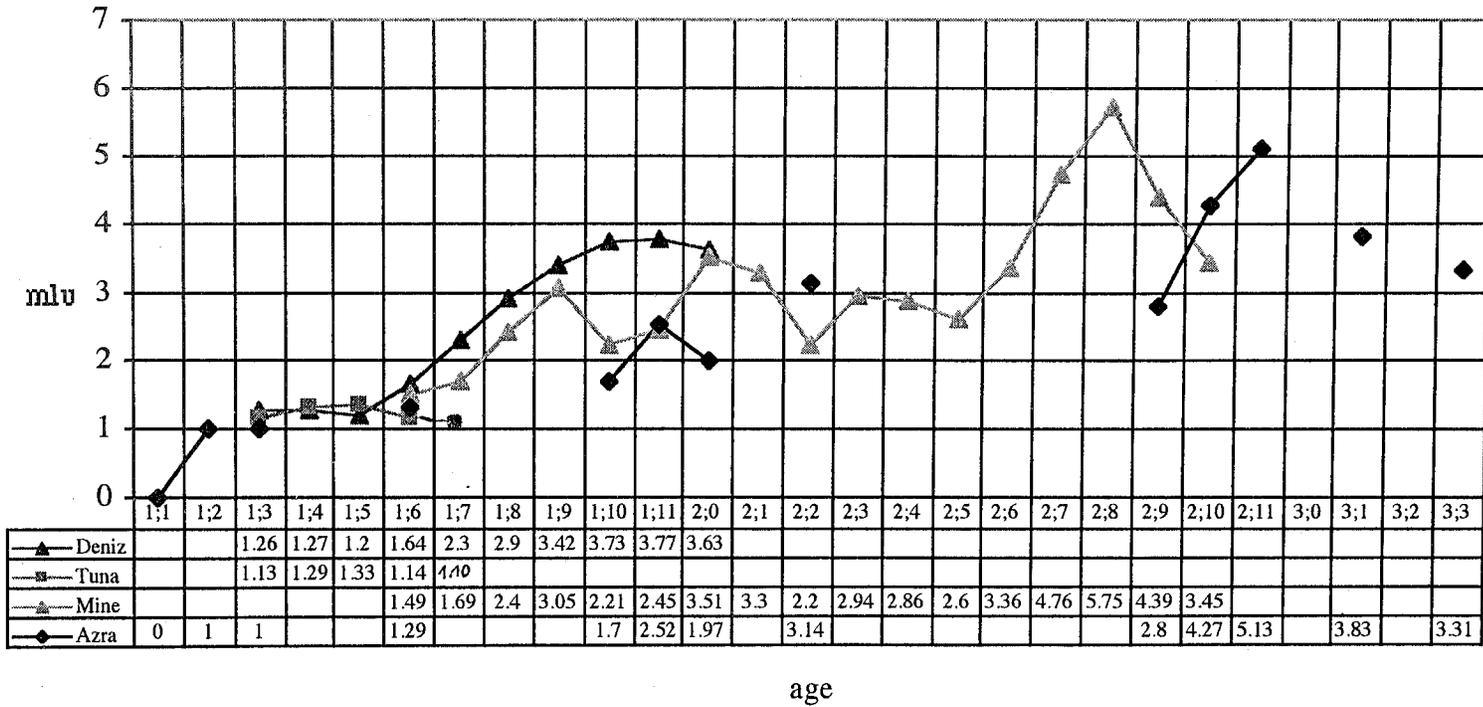


Table-5: AZRA/DENİZ/MİNE/TUNA: MLU

## **3.2. Methodology**

The methodology followed in data collection, coding, transcribing and analysis in this study is described below. In 3.2.1, data collection, in 3.2.2., transcriptions and coding, and finally in section 3.2.3., the analysis of the data is described briefly.

### **3.2.1. Data Collection**

The spontaneous speech samples of the subjects are audio-taped with regular intervals, by one of the parents at their own residence. During the sessions, which are about twenty five minutes long, the subjects are engaged in natural everyday activities; play with their toys, 'read' books, or draw pictures. The parents encourage them to speak by asking questions and provide materials to talk about. They ask questions and repeat the children's utterances in order to make their interpretation easier. No special materials (such as picture books, toys, films designed for the study) are used to induce conversation.

### **3.2.2. Transcription and Coding**

The utterances recorded were transcribed phonologically without orthographic standardization so that the phonological processes that the children go through can be taken into consideration. Since the subjects have not yet completed their phonological development and in some utterances the interpretation of the utterance is based on the phonological processes. The development of phonology observed in Deniz and Mine are reported previously in Arslan (1996) and Ketrez (1996, 1997).

The utterances that are transcribed are coded morphologically according to the CHAT conventions of the CHILDES system (MacWhinney, 1995; Mac Whinney & Snow, 1990). The codes and symbols used are listed in the section on abbreviations above.

### **3.2.3. Analysis**

The analysis were done by the CLAN programs (MacWhinney, 1995; Mac Whinney & Snow, 1990). All the utterances that contained a verb or an argument NP were targeted for analysis. The subjects' utterances are not isolated from the context in which they are produced. The parents' question preceding the utterance and their response to the child's utterance are analyzed together with the child's utterance.

Tuna's sessions that were recorded each month were merged and treated as one whole session in the analysis since some of them were less than fifteen minutes long.

## CHAPTER FOUR

### EARLY VERBS

Inflectional morphology emerges quite early in Turkish (Aksu-Koç & Slobin, 1985). Turkish children are reported to produce noun and verb inflections even at the one-word stage and master the acquisition of the entire system before 2;0 years of age. Because of this characteristic of the acquisition of the language, Turkish seems to be supporting the view that categories such as "noun" and "verb" are available to the children at the very beginning of language development (Pinker, 1984, 1989). However, in the recent studies done on the very early stages of language development (Aksu-Koç, 1996; Ketrez, in press), it has been observed that Turkish children, just like children acquiring other languages, go through a "pre-categorical" (Radford, 1990) or "pre-morphological" (Dressler, 1997) stage throughout which they hardly provide any evidence for the syntactic categories in their grammars.

In this chapter, therefore, before going on to discuss the acquisition of the argument structures of Turkish verbs, we describe how the Turkish verb, as a syntactic category, develops. It is significant to know this, since only then the argument structures can be attributed to the verbs the children produce.

In section 4.1. below the development of the verb category is discussed. The analysis is based on the data collected between the ages 1;1 and 2;0. The data that belongs to the later ages are excluded from the analysis in this chapter since verbs are

established in children's speech by the age 2;0, as also stated in Aksu-Koç & Slobin (1985) and van der Heijden (1997a). The chapter is divided into three sections each of which present a different stage in the development.

The analysis of the development of the Turkish verb category is based on three types of evidence.

(i) **Morphological evidence:** Any type of inflectional morphology peculiar to the verb category is considered to be evidence, as in Pine, Lieven & Rowland (in press). These are tense/aspect/modality and negative markers. Person markers, however, are taken to be syntactic evidence since they mark the subject of the verbs.

(ii) **Syntactic evidence:** The presence of subjects and objects in the child's speech are considered to be syntactic evidence (Pine, Lieven & Rowland, in press). In the present study, agreement markers on verbs constitute syntactic evidence since they imply that the child assigns subjects to the verbs she produces. Another type of evidence is the case marking on the NPs which are either structurally or inherently assigned by the verbs. Nominal morphology is considered to be significant also because it implies the differentiation of the two syntactic categories, nouns and verbs. In addition to these, the responses given to the adults' questions are analyzed as syntactic clues for the verb category (Radford, 1990).

(iii) **Evidence for productivity:** In order to test the productivity of the verbs, each verb and the types of constructions in which they occur are analyzed as in Pine, Lieven & Rowland (in press). A verb that occurs in various constructions (that is, used with different person markers or different tense/aspect and modality markers) is considered to be productive.

According to the analysis of the verbs produced between 1;1 and 2;0, there appears to be three stages that the children go through. In the first stage, the analysis is based on Azra's first utterances recorded at 1;1,19. In this session, there are no verbs- in fact no words, yet. In the next stage children start to produce verbs as lexical units.

However, these words do not exhibit morphological and syntactic properties that a verb must possess. In the third stage, verbs emerge and provide morphological and syntactic evidence for the development of an adult-like verb category. These findings are given in Table-6 below and are illustrated in detail throughout the rest of this chapter.

**Table-6:** The stages in the development of the verb category (1;1-2;0)

stage	no. of sess	no. of utter	child(ren)	age	mlu	features
I	1	-	AZRA	1;1,19	0.00-0.00	<ul style="list-style-type: none"> <li>• onomatopoeic words with(out) communicative function,</li> <li>• sounds and word-like sound sequences,</li> <li>• no word, no syntactic category, no structure</li> <li>• NO VERB</li> </ul>
II	2 17 3 1	51 476 250 49	AZRA TUNA DENİZ MİNE	1;2,10-1;3,6 1;3-1;7 1;3,3-1;3,27 1;6,21	1.00-1.00 1.13-1.10 <sup>4</sup> 1.26-1.27 1.49	<ul style="list-style-type: none"> <li>• the first verbs, but no evidence for classifying them as verbs in the adult sense,</li> <li>• THE APPEARANCE OF VERBS</li> </ul>
III	4 9 6	598 1597 646	AZRA DENİZ MİNE	1;6,11-2;0,10 1;5,9-1;8,27 1;7-1;11,23	1.29-1.97 1.20-2.90 1.69-3.51	<ul style="list-style-type: none"> <li>• the first evidence (morphological, syntactic) for the verb as a syntactic category</li> <li>• the first evidence for the development of argument structures</li> <li>• productive use of verbs</li> <li>• the emergence of voice morphology</li> <li>• THE EMERGENCE OF THE VERB CATEGORY</li> </ul>

<sup>4</sup> There is a decrease observed in her MLU by 1;7, The highest MLU in her speech is 1.33 which is recorded at 1;5.

#### 4.1. Stage one: Starting to speak

The first stage, the analysis of which is based on Azra's first session recorded at 1;1,19, is characterized with imitations and onomatopoeic word-like sound sequences which are produced to communicate verbally. At this stage, Azra exercises sounds and words that she hears and produces utterances that only *sound like* adult words (55-57):

- (55) MOT: ne-ymiş bi+da söyle bak-i-ym. (Azra-1;1,19)  
 what-MIŞ once more tell look-OPT-1S  
 'what is it, tell me once more!'
- FAT: hani o dıgıdık@o dıgıdık@o gid-en.  
 well it dıgıdık dıgıdık go-REL  
 'well, what is it that goes dıgıdık dıgıdık'
- CHI: **&dıgıdı:@o.**
- MOT: logo koş-uyo mu?  
 logo run-PROG QUE  
 'is the logo running?'
- MOT: dıgıdık@o dıgıdık@o dıgıdık@o mı yap-ıyo?  
 dıgıdık dıgıdık dıgıdık QUE do-PROG  
 'is it doing dıgıdık dıgıdık dıgıdık'

In (55) she repeats the onomatopoeic word produced by the father. It is not clear whether she is talking about the horse or the action that the horse performs, or the manner in which the horse runs.

- (56) CHI: **&mammanman &manman.** (Azra-1;1,19)
- MOT: baba-ya mama mı ver-iyo-sun?  
 father-DAT food QUE give-PROG-2S  
 'are you giving food to your father?'

(56) is an example for word-like sound sequences. She produces that utterance when she is giving a toy to her father and hence the toy is interpreted to be *mama*, 'something to eat' by the mother.

The utterance in (57) is taken to be a quantifier modifying the recorder by the mother. However, the same form is produced also when she is trying to communicate something about water, as seen in (58).

- (57) CHI: &bi. (Azra-1;1,19)
- MOT: bir tane-cik mi teyp var?  
one piece-DIM QUE tape-recorder there  
'is there only one tape recorder?'
- CHI: &bi:...
- MOT: bir evet.  
one, yes  
'one, yes'
- (58) MOT: bak su iste-r mi-sin [=! whispering]? (Azra-1;1,19)  
look water want-AOR QUE-2S  
'look, would you like (some) water?'
- CHI: &bi:...
- FAT: xxx [=! murmurs].
- MOT: iste-r mi-sin su?  
want-AOR QUE-2S water  
'would you like water?'
- CHI: &bi:...
- (...)
- CHI: &bi:y.
- MOT: o su canım.  
it water honey  
'it is water, honey'
- MOT: o su.  
it water  
'it is water'

There are also instances where the sounds that correspond to the objects are totally irrelevant in the sense of the adults (59).

- (59) CHI: &i::: (Azra-1;1,19)
- MOT: o gaste.  
it newspaper  
'it is a newspaper'
- MOT: baba-n-in gaste-si.  
father-POSS&2S-GEN&3S newspaper-POSS&3S  
'it is your father's newspaper'

At this stage there are no verbs yet. Only the utterance in (60) can be considered to be the child's first attempt to describe an action. In that utterance Azra imitates the sounds that her father produces when he is sneezing.

- (60) FAT: 0 [=! sneezes]. (Azra-1;1,19)
- MOT: çok yaşa [=! to the father].  
long live  
'bless you'
- CHI: &apf.
- MOT: evet &apr yap-tı.  
yes do-PAST  
'yes, he did &apr'
- MOT: hapşur-du di:-mi?  
sneeze-PAST NEG-QUE  
'he sneezed, didn't he?'

To sum, this stage can be considered to be a phase in development between the prelinguistic and linguistic stages. The child's attempts to communicate verbally fail in most of the utterances and the sounds she produces cannot even be transcribed. The examples above are those that can hardly be deciphered, yet, even these still do not have the quality of being categorized as words. Hence the MLU of Azra at this age is 0.00. At the next stage, however, we see the subjects producing "words" although their syntactic categories are still questionable.

## 4.2. Stage Two: The Earliest Verbs

In the second stage, the first verbs are produced by the children. However, as Radford (1990) states they are "purely acategorical in nature," that is, they have phonological, semantic and pragmatic properties but lack grammatical properties and hence they can hardly be categorized as "verbs."

In this section, we will analyze such utterances produced by Tuna (between 1;3- 1;7), Azra (between (1;2,10- 1;3,6), Deniz (between 1;3,3-1;3,27) and Mine (at 1;6,21) and argue that their earliest verbs lack the kind of evidence necessary to categorize them as "verbs."

### 4.2.1. (The Lack of) Morphological Evidence

The earliest verbs are either not inflected for tense/aspect and person, or the inflections that they bear do not function the way that they do in adult speech; that is, they are not used contrastively or productively. The tense/aspect markers at this stage are shown in Tables-7-10 below. The numbers in the tables indicate the numbers of different verb types. The numbers in the parantheses are the numbers of tokens. In this stage we do not have negative or question markers yet.

**Table-7: AZRA: Tense/aspect/modality inflections**

sess	age	-DI	-Iyor	-mİş	-(y)AcAK	-İr	-(y)A
2	1;2,10	-	-	-	-	-	-
3	1;3,6	-	-	-	-	-	-

**Table-8:** MİNE: Tense/aspect/modality inflections

sess	age	-DI	-Iyor	-mİş	-(y)AcAK	-İr	-(y)A
1	1;6,21	1(11)	1(5)	-	-	-	-

**Table-9:** DENİZ: Tense/aspect/modality inflections

sess	age	-DI	-Iyor	-mİş	-(y)AcAK	-İr	-(y)A
1	1;3,3	1(1)	-	-	-	-	-
2	1;3,12	-	-	-	-	-	-
3	1;3,27	1(1)	-	-	-	-	-

**Table-10:** TUNA: Tense/aspect/modality inflections

sess	age	-DI	-Iyor	-mİş	-(y)AcAK	-İr	-(y)A
1	1;3	4(5)	-	-	-	-	-
2	1;4	5(14)	1(3)	-	-	-	-
3	1;5	3(18)	-	-	1(1)	-	-
4	1;6	3(16)	-	-	-	-	-
5	1;7	2(4)	-	-	-	-	-

Azra's first two verbs that are recorded at 1;2,10 and at 1;3,6, *aç-* 'open' and *giy-* 'wear', occur only in uninflected forms and hence lack any kind of clear morphological evidence (61-62).

- (61) MOT: *ner-de terlik-ler hayat-ım?* (Azra-1;2, 10)  
 where-LOC slipper-PL life-POSS&1S  
 'where are the slippers, honey?'
- CHI: *giy.*  
 wear  
 'wear'
- MOT: *ne-yi giy-i:-m hayat-ım?*  
 what-ACC wear-OPT-1S life-POSS&1S  
 'what will I wear, honey?'
- MOT: *getir giy-i:-m.*  
 bring wear-OPT&1S  
 'bring (them), let me wear'
- MOT: *ner-de?*  
 where-LOC  
 where?
- (...)
- MOT: *na-ap-a-lım terliğ-i?*  
 what do-OPT-1P slipper-ACC  
 what shall we do with the slippers?
- CHI: *giy.*  
 wear  
 'wear'.
- MOT: *giy-i:-m, peki*  
 wear-OPT-1S, OK  
 'let me wear, OK'
- (62) CHI: *aç [=! points to the door].* (Azra-1;3,6)  
 open  
 'open'
- MOT: *yok, şimdi gid-e-me-yiz.*  
 no, now go-POT-NEG-1P  
 'no, we cannot go now'
- MOT: *tatlı-m, gece ol-du.*  
 honey-POSS&1S night be-PAST  
 'honey, it is night time'

Tuna's earliest verbs, also, rarely bear verbal morphology. Some of these utterances (63-65), as opposed to Azra's verbs, do not occur with command function and thus they are interpreted to be ungrammatical in the adult sense. In some other cases, the utterance, whether it is a command or not, is rather difficult to understand.

The first verb, *kalk-* 'get up', appears in single-word utterances without inflections (63-65). In all the examples below, something falls on the floor and she utters the word *kalk-* 'get up', perhaps, in order to express her wish to have it back.

- (63) MOT: *düş-tü*  
fall-PAST  
'it fell' (Tuna-1;3)
- CHI: **ka:k.**  
get+up  
'get up'
- MOT: *kalk-sın mı?*  
get+up-OPT-2S-QUE  
'do you want it to get up?'
- (64) %sit: they are watching a basketball game on TV.
- MOT: *na ap-ıyo-lar?* (Tuna-1;3)  
what do-PROG-3P  
'what are they doing?'
- MOT: *top mu at-ıyo-lar?*  
ball QUE throw-PROG-3P  
'are they throwing a ball?'
- CHI: **at.**  
throw  
'throw'
- MOT: **at.**  
throw  
'throw'
- CHI: **ka:k.**  
get+up  
'get up'
- MOT: *kalk evet.*  
get+up yes  
'get up, yes'
- MOT: *düş-tü mü kız-ım?*  
fall-PAST QUE daughter-POSS&1S  
'did it fall, my daughter?'
- CHI: **at.**  
throw  
'throw'

MOT: at di-yo evet.  
 throw say-PROG yes  
 'he says throw, yes'

MOT: basket at-tı-k.  
 basket throw-PAST-1P  
 'we scored a goal'

(65) %sit: something falls on the floor. (Tuna-1;3)

CHI: **ka:k**  
 get+up  
 'get up'

MOT: **kalk.**  
 get+up  
 'get up'

MOT: **düş-tü tabii kalk di-yo(r)-sun.**  
 fall-PAST of+course get+up say-PROG-2S  
 'it fell, of course you say get up'

In (66), it is uttered as an answer to the question *nerede* 'where.' Whether it is a command, that is, a demand for an action, or a description of the state, is not clear in this utterance.

(66) MOT: Tuna ner(e)-de? (Tuna-1;4)  
 Tuna where-LOC  
 Tuna, where is it?

CHI: **ka:k.**  
 get+up  
 get up

MOT: **düş-tü mü?**  
 fall-PAST QUE  
 'did it fall?'

The other verb *at-* 'throw', too, appears in single word utterances, without inflections. In the examples (67-68) below it is obvious that it is not produced as a command.

- (67) MOT: <ver-me Arko-ya> (/2). (Tuna-1;3)  
 give-NEG Arko-DAT  
 'don't give (it) to Arko
- MOT: Arko ye-di mama@c-si-mi.  
 Arko eat-PAST food@c-POSS&3S-ACC  
 'Arko has eaten its food'
- CHI: a:t a:t.  
 throw throw  
 'throw throw'
- MOT: at-ti-n mi?  
 throw-PAST-2S QUE  
 'have you thrown?'
- MOT: Arko-ya at-ti-n şimdi ha: peki.  
 Arko-DAT throw-PAST-2S now OK  
 'you have thrown it to Arko, hah, OK'
- (68) %sit: throws some toys on the floor. (Tuna-1;3)
- MOT: at-ma.  
 throw-NEG  
 'don't throw'
- MOT: at-ma yer-e.  
 throw-NEG floor-DAT  
 'don't throw on the floor'
- CHI: a' .  
 throw  
 'throw'
- MOT: xxx.
- CHI: a' .  
 throw  
 'throw'
- MOT: düştü mü?  
 fall-PAST QUE  
 'did it fall'
- CHI: apba: (/2).
- MOT: hopba:.

The verbal inflections (tense/aspect and rarer person markers) start to appear at this stage in Tuna's speech. However, as exemplified below in (69-99), these

earliest inflections are not used contrastively or productively and they occur in frozen forms hardly providing any evidence for the emergence of the category "verb."

The verb *at-* 'throw' which emerges at the same time with *kalk-* 'get up' appears to be a significant example in this respect. In the first sessions, it is uttered without inflection and refers to the action being performed as seen above (67-68 and also 64). Following are further examples (69-70) in which it is produced with the past tense suffix and refers to the action that has just been performed.

(69) MOT: **no:ldu Tuna?** (Tuna-1;3)  
 what happen-PAST, Tuna  
 'what happened, Tuna'

CHI: **no:du?**  
 what happen-PAST  
 'what happened'

MOT: xxx.

CHI: **at-ti.**  
 throw-PAST  
 'threw'

MOT: **düş-tü mü?**  
 fall-PAST QUE  
 'did it fall?'

MOT: **düş-tü mü Tuna?**  
 fall-PAST QUE Tuna  
 'did it fall, Tuna?'

(70) MOT: **cici yap.** (Tuna-1;3)  
 pretty do  
 'caress it'

CHI: **at-ti.**  
 throw-PAST  
 'threw'

MOT: **attı: evet.**  
 throw-PAST yes  
 'threw, yes'

MOT: **na:ptın, attın mı?**  
 what do-PAST-2S throw-PAST  
 'what did you do? Did you throw?'

As seen in (71), she drops the past tense suffix again and produces it as an answer to the question *ne o?* 'what is it?'. Here it may be either the name of the object or a reduced form of a relative clause 'the thing that I have thrown'. At the same session we have a similar example (72).

- (71) CHI: **düt** [:düş]. (Tuna -1;3)  
 fall  
 'fall'
- MOT: na-ap-ti-n kız-ım at-tı-n mı?  
 what do-PAST-2S daughter-POSS&1S throw-PAST-2S QUE  
 what have you done, my daughter, have you thrown it?
- CHI: &ıh [=! points to something].
- MOT: ne o?  
 what it  
 'what is it?'
- CHI: **at**.  
 throw  
 'throw'
- MOT: at.  
 throw  
 'throw'
- (72) MOT: top bu-nlar bak top-lar. (Tuna -1;3)  
 ball this-PL look ball-PL  
 'these are balls, look, the balls'
- CHI: **at**.  
 throw  
 'throw'
- MOT: at evet.  
 throw yes  
 'throw, yes'
- MOT: top-u at-ıyor-uz.  
 ball-ACC throw-PROG-1P  
 'we are throwing the ball'

MOT: gol!  
goal  
'goal!'

MOT: at bak-al-im.  
throw look-OPT-1P  
'throw, let's see'

CHI: at.  
throw  
'throw'

MOT: at.  
throw  
'throw'

CHI: 0 [=! throws the ball].

In these examples *at* 'throw' refers to something that can be thrown potentially or something that has just been thrown. In the session recorded at 1;5 *atti* 'threw', again, refers to the action performed by the child herself (73-75).

(73) MOT: na-ap-ti-n sen? (Tuna-1;5)  
what do-PAST-2S you  
what have you done?

MOT: na-ap-tiğ-in-ı bil-iyor mu-sun?  
what do-DIK-POSS&2S-ACC know-PROG QUE-2S  
'do you know what you have done?'

CHI: at-ti.  
throw-PAST  
'threw'

MOT: at-ti-n mi?  
throw-PAST-2S QUE  
'did you throw (it)?'

(74) CHI: at-ti. (Tuna-1;5)  
throw-PAST  
'threw'

MOT: o-nu da mı at-ti-n?  
it-ACC too QUE throw-PAST-2S  
'did you throw it, too?'

- (75) CHI: no-o:-du? (Tuna-1;5)  
 what happen-PAST  
 'what happened'
- MOT: no:İnuş?  
 what happen-MIŞ  
 'what happened'
- CHI: **at-ti.**  
 throw-PAST  
 'threw'

Interestingly, throughout the period analyzed *atti* 'threw' refers not only to the action 'throw' but also to the object that undergoes the action. From 1;6 onwards the verb, marked with the past tense marker, is used to refer to the object that undergoes the action *at-* 'throw' (76-82)<sup>5</sup>.

- (76) CHI: **at-ti!** (Tuna-1;6)  
 throw-PAST  
 'threw'
- MOT: bak-i-ym atti-ye  
 look-OPT-1S throw-PAST-DAT  
 'let me look at the threw'
- MOT: **atti top de-mek ama +//.**  
 threw ball say-INF but  
 'threw means ball, but'
- (77) CHI: **at-ti.** (Tuna-1;6)  
 throw-PAST  
 'threw'
- MOT: **evet top-lar-a hep atti di-yor-sun.**  
 yes ball-PL-DAT always threw say-PROG-2S  
 'yes you always call the balls threw'
- (78) CHI: **at-ti.** (Tuna-1;6)  
 throw-PAST  
 'threw'

<sup>5</sup> Demircan (personal communication) states that his son produced the word *tut-i* (hold-OPT(&1S)) for *şemsiye* 'umbrella' during the initial stages of his language development. He states that the word *tut-i* (hold-OPT(&1S)) was the "name" for *şemsiye* 'umbrella' in his speech. The example is similar to Tuna's word *atti* 'threw'.

MOT: hep atti-ler var evet.  
 everywhere throw-PAST-PL exist yes  
 'yes there are throws everywhere'

(79) CHI: **at-ti.** (Tuna-1;6)  
 throw-PAST  
 'threw'

MOT: atti evet top bu.  
 throw-PAST yes ball this  
 'yes, this is a throw'

(80) CHI: **at-ti.** (Tuna-1;6)  
 throw-PAST  
 'threw'

MOT: dur bak-ıca-m o atti-ler-e ben.  
 hold+on look-FUT-1S it throw-PAST-PL-DAT I  
 'hold on, I will look at those throws'

In the examples (76-80), the word *atti* 'threw' is produced when the child points to a ball or balls. In (81-82), on the other hand, she is talking about a picture in which a teddy bear is playing with a ball<sup>6</sup>.

(81) MOT: Tuna, bu kedi ne-yle oynu-yor? (Tuna-1;6)  
 Tuna this cat what-INS play-PROG  
 'Tuna, what is this cat playing with'

CHI: **at-ti.**  
 throw-PAST  
 'threw'

<sup>6</sup> At 1;5,28, Deniz, as a response to a similar question, produces the word *top* 'ball'. Tuna's response in (81) in which she produces the word *atti* 'threw' instead of *top* 'ball' is very similar to Deniz's (i).

- (i) MOT: peki (/3) bura-da na-ap-ıyor? (Deniz- 1;5, 28)  
 OK here-LOC what do-PROG  
 'OK, what is he doing here?'
- CHI: **top.**  
 ball  
 'ball'
- MOT: top.  
 ball  
 'ball'
- MOT: top-la oynu-yor.  
 ball-INS play-PROG  
 '(he is) playing with (the) ball'

MOT: evet sevgili-m.  
yes lover-POSS&1S  
'yes my love'

MOT: top-la oynu-yor doğru.  
ball-INS play-PROG right  
'it is playing with a ball, that is right'

(82) MOT: ayı na-ap-mış bur(a)-da kız-ım? (Tuna-1;7)  
bear what do-MIŞ here-LOC daughter-POSS&1S  
'what have the bear done here, my daughter?'

CHI: at-ti.  
throw-PAST  
'threw'

MOT: eve:::t.  
yes  
'yes'

MOT: top-u at-mış.  
ball-ACC throw-MIŞ  
'(he has) thrown the ball'

*Atti* 'threw' refers not only to a ball but also to other things that resemble a ball (83) and these things are not necessarily thrown as in (84).

(83) CHI: at-ti. (Tuna-1;6)  
throw-PAST  
'threw'

MOT: bunlar topa benziyo diye atti diyo(r)sun.  
this-PL ball-DAT resemble since throw-PAST say-PROG-2S  
you call these threw since they resemble a ball

(84) CHI: at-ti. [=! points to the nut in the picture]. (Tuna-1;6)  
throw-PAST  
'threw'

MOT: evet topa benziyor.  
yes ball-DAT resemble-PROG  
yes it resembles a ball

MOT: at-ti-ye benzi-yor evet.  
throw-PAST-DAT resemble-PROG yes  
it resembles a threw yes

Interestingly, *atti* 'threw' also refers to the animal *at* 'horse' which is homonymous with the verb *at-* 'throw' (85). In this example there is another dimension, phonological dimension, involved in the production of the word.

- (85) CHI: **at-ti.** (Tuna-1;6)  
 throw-PAST  
 'threw'
- MOT: hayır bunun ismi atti değil bu at.  
 no this-GEN&3S name-POSS&3S throw-PAST not this hors  
 'no its name is not threw it is a horse'

In some cases it still occurs without inflections and refers to the action performed by the child (86).

- (86) MOT: top-un-u bi(r) at-ar mi-sin? (Tuna-1;6)  
 ball POSS&2S-ACC once throw-AOR-QUE-2S  
 'could you throw your ball, once?'
- CHI: 0 [=! throws the ball].
- CHI: **at.**  
 throw  
 'throw'

As seen in the examples above, the use and the reference of Tuna's first two verbs are different from the use of the verbs *kalk-* 'get up' and *at-* 'throw' in adult speech.

Frozen forms in child speech emerge with the verbs *ol-* 'be/happen' and *duy-* 'hear'. The verb *ol-* 'be/happen' emerges at the same time with *at-* 'throw' and *kalk-* 'get up' and appears in a frozen form *no:du* 'what happened'. It is uttered in situations when she is surprised, puzzled or horrified. In most of the cases, it is used as an exclamation expressing the child's reaction to a situation. The phrase emerges as an imitation. Whenever an adult asks *no:ldu?* 'what happened?' she answers back *no:ldu?* 'what happened?' with the correct intonation (87-88).

- (87) STR: no:ldu? (Tuna-1;3)  
 what happen-PAST  
 'what happened'
- CHI: **yo:du?**  
 what happen-PAST  
 'what happened'
- (88) MOT: peki no:ldu, Tuna? (Tuna-1;4)  
 OK what happen-PAST Tuna  
 'OK, what happened, Tuna'
- CHI: **yo:du?**  
 what happen-PAST  
 'what happened'
- MOT: no:ldu?  
 what happen-PAST  
 'what happened'
- CHI: **no:du?**  
 what happen-PAST  
 'what happened'

From 1;5, onwards, she starts to utter it independently and as we infer from the mother's response, she sometimes produces the phrase in contexts where actually nothing happened (89-91).

- (89) MOT: na:piyo bebek? (Tuna-1;5)  
 what do-PROG doll  
 'what is the doll doing?'
- CHI: **yo:do?**  
 what happen-PAST  
 'what happened'
- (90) CHI: **at [:aç] (/2).** (Tuna-1;5)  
 open  
 'open'
- MOT: **ama bunun pili yok.**  
 but this-GEN&3S batary-POSS&3S lacking  
 'but this does not have batary'
- CHI: **yo:du?**  
 what happen-PAST  
 'what happened'

- (91) MOT: bak <bu da gemi> (/2). (Tuna-1;6)  
 look this TOP ship  
 'look this is a ship'
- MOT: çok şeker di:mi?  
 very cute not-QUE  
 'isn't it cute?'
- CHI: yo:du?  
 what happen-PAST  
 'what happened'
- MOT: no:ldu?  
 what happen-PAST  
 'what happened'
- MOT: bi(r)şey olmadı Tuna.  
 something happen-NEG-PAST Tuna  
 'nothing happened, Tuna'

The verb *duy-* 'hear', which is the other verb that occurs in a frozen form, is the only verb which bears person marker throughout the period analyzed. It is always uttered as a response to the mother's question *duydun mu?* 'have you heard?'. It is produced without person marker as well.

- (92) MOT: duy-du-n mu? (Tuna-1;4)  
 hear-PAST-2S QUE  
 'did you hear?'
- CHI: da:-da-m.  
 hear-PAST-1S  
 'I heard'
- (93) MOT: Tuna, duy-du-n mu? (Tuna-1;4)  
 Tuna, hear-PAST-2S QUE  
 'Tuna, did you hear?'
- CHI: du:-da.  
 hear-PAST-\*01S  
 '(I) heard'

*Düş-* 'fall' is another word that appears in this stage. It occurs only with the third person singular subject and with and without tense marker at the same context.

- (94) CHI: **dat-da.** (Tuna-1;3)  
 fall-PAST  
 '(it) fell'
- MOT: **düş-tü evet.**  
 fall-PAST, yes  
 'it fell, yes'
- CHI: **ga:k.**  
 get+up  
 'get up'
- (95) CHI: **dü:t.** (Tuna-1;3)  
 fall  
 'fall'
- MOT: **na-ap-tı-n kız-ım, at-tı-n mı?**  
 what-PAST-2S daughter-POSS&1S throw-PAST-2S QUE  
 'what have you done, my daughter, have you thrown it?'

In Deniz's first three sessions, the verbs occur in command forms, and hence do not require tense/aspect/modality morphology. The verb *düş-tü* 'it fell' is the first verb that occurs with *-DI*.

- (96) MOT: **maymun.** (Deniz-1;3,3)  
 monkey  
 'monkey'
- CHI: **ma:mu: [:maymun].**  
 monkey  
 'monkey'
- MOT: **düş-tü.**  
 fall-PAST.  
 'it fell'
- CHI: **ma:mmu: [:maymun].**  
 monkey  
 'monkey'
- CHI: **düt-tü [:düştü].**  
 fall-PAST.  
 'it fell'

The verb *bit* - 'finish' is also another verb recorded in this stage. It appears as a response to the mother's question *bit-ti mi?* 'did it finish?'

- (97) MOT: abc bit-ti mi? (Deniz-1;3,27)  
 abc finish-PAST QUE  
 'did ABC finish?'  
 CHI: **bid-di bid-di.**  
 finish-PAST.  
 '(it) finished (it) finished'

In one instance, the markers are not produced, although they are obligatory and the child produces an ungrammatical structure (98).

- (98) MOT: bak-ica-n mi? (Deniz-1;3,3)  
 look-FUT-2S QUE  
 'will you look (at the book)?'  
 CHI: **bak bak** [=! comes closer to her mother].  
 look  
 'look look'

This ungrammaticality may result from the fact that she hears the word *bak* 'look' whenever she looks at a picture book, and she simply associates this word with the event that takes place whenever she hears the word *bak* 'look'<sup>7</sup>. It is simply a word that is linked to a scene and does not necessarily refer to an action that is performed by an agent.

In Mine verbal morphology appears in this stage. With one verb she produces *-Iyor* and with another verb *-DI* appears. As illustrated in (103), she produces the word *i'ti-yo* '(I) want' no matter what the father's question is. It is apparently a frozen form and as we understand from father's last response, she does not do anything that shows her intention to go out and actually she does not mean to say 'yes, I want to go'.

<sup>7</sup> An alternative analysis can be that she cannot produce the future suffix *-(y)AcAK* which is required in the response to the mother's question and she does not replace it with another form that she can produce, namely the past tense marker *-DI*, as she is aware of the difference between the two forms. However, this analysis seems unlikely, if the child does not have an inflectional system yet, as we argue in this section. Similarly, if she does not have the syntactic category verb yet, we cannot expect her to parse the morphological structure of the words which will enable her to "delete" the future suffix.

- (99) FAT: gid-e-lim mi?  
go-OPT-1P QUE  
'shall we go?'
- CHI: **i'ti-yo.**  
want-PROG-\*01S.  
'(I) want'
- FAT: isti-yo mu-sun?  
want-PROG QUE-2S  
'do you want (to go)?'
- CHI: **i'ti-yo.**  
want-PROG-\*01S.  
'(I) want'
- FAT: olur mu?  
OK QUE  
'OK?'
- CHI: **i'ti-yo.**  
want-PROG-\*01S.  
'(I) want'
- FAT: atta gid-e-lim mi, ol-ur mu?  
out/away go-OPT-1P QUE, OK QUE  
'let's go out, OK?'
- CHI: **i'ti-yo.**  
want-PROG-\*01S.  
'(I) want'
- FAT: iste-miyo-sun, biz gid-iyor-uz.  
want-NEG-PROG-2S we go-PROG-1P  
'you don't want (to go), we are going?'
- CHI: **i'ti-yo.**  
want-PROG-\*01S.  
'(I) want'

The production of the other verb *düş-* 'fall' which appears with the inflection *-DI* is also similar. As seen in (100-101) it is produced as a frozen form.

- (100) %sit: they are watching children playing outside.
- CHI: **dü'-tü** [:düştü] (/3). (Mine-1;6,21)  
fall-PAST.  
'(he) fell'

BRO: nası da düş-tü yer-e!  
 how TOP fall-PAST floor-DAT  
 'how he fell!'

CHI: **dü'-tü** [:düş-tü] (/4).  
 fall-PAST.  
 '(he) fell'

In (101) it is not even clear what she is talking about. She produces the same form as a response to any utterance.

(101) %sit: they talk about going out for a walk.

FAT: nere-ye gid-e-lim? (Mine-1;6,21)  
 where-DAT go-OPT-1P  
 'where shall we go?'

FAT: efendim?  
 pardon?

CHI: **dü'-tü** [düştü].  
 fall-PAST.  
 '(it?) fell'

BRO: atta gid-elim de-di.  
 out/away go-OPT-1P say-PAST  
 'let's go out, she said'

FAT: düş-tü mü?  
 fall-PAST QUE  
 'did it fall'

CHI: &ee.

FAT: ne düş-tü?  
 what fall-PAST  
 'what fell?'

CHI: a:na [:anne].  
 mother  
 'mother'

(...)

FAT: anne uyu-yo.  
 mother sleep-PROG  
 '(your) mother is sleeping'

FAT: e:e:e yap-ıyo anne, uyu-yo..  
 e:e:e do-PROG mother sleep-PROG  
 '(your) mother is doing e:e:e, (she) is sleeping'

CHI: e: e: &oooh.

CHI: d̥ü'-tü.  
 fall-PAST  
 'fell'

FAT: d̥üş-tü?  
 fall-PAST  
 'fell?'

In one instance, similar to Deniz's utterance in (98) and Tuna's and Azra's utterances mentioned above, Mine produces the verb *kaydet-* 'record' without verbal morphology (102).

(102) CHI: &a' ka:de' [=! touching the recorder].(Mine-1;6,21)  
 record  
 'record'

BRO: Mine ben sen-in ses-in-i kayd+ed-ice-m.  
 Mine I you-GEN&2S voice-POSS&2S-ACC record-FUT-1S  
 'Mine I will record your voice'

To sum up, the verbs in this stage either occur without verbal morphology or the morphology that they bear do not have the same functions as in adult speech. As seen above, there are also forms that appear to be frozen constructions. In short, children's speech lacks morphological evidence for the verb category in this stage.

#### 4.2.2. (The Lack of) Syntactic Evidence

As seen in the examples above, the verbs occur in one-word utterances, hence the position of the words cannot provide evidence for the syntactic category. Moreover, in one instance the verb *at-* 'throw' with verbal inflection occurs as a nominal in a predicate position.

- (103) CHI: **bu at-ti.** (Tuna-1;7,5)  
 this throw-PAST  
 'this is threw'
- MOT: **ah hep karıştır-ıyo(r)-sun.**  
 oh always confuse-PROG-2S  
 'oh, you always confuse'
- MOT: **ata hep atti diyo(r)sun.**  
 horse-DAT always throw-PAST say-PROG-2S  
 'you always call the horse threw'

When answering questions, too, the children do not produce adult-like responses. Azra's utterance in (61) which is repeated below in (104) is one of such responses. The verb *giy* 'wear' is produced as a response to the mother's question *ner-de* 'where'. Tuna's example in (105) is a similar one.

- (104) MOT: **ner-de terlik-ler hayat-ım?** (Azra-1;2, 10)  
 where-LOC slipper-PL life-POSS&1S  
 'where are the slippers, honey?'
- CHI: **giy.**  
 wear  
 'wear'
- (105) MOT: **Tuna ner(e)-de?** (Tuna-1;4)  
 Tuna where-LOC  
 'Tuna where is it?'
- CHI: **ka:k.**  
 get+up  
 'get up'
- MOT: **düştü mü?**  
 fall-PAST QUE  
 'did it fall?'

The answers children give to the *wh*-questions are considered to be syntactic evidence by Radford (1990) since they show the child's ability to comprehend and produce phrase structures of the language she is acquiring. Similarly, such responses are analyzed to see whether the subjects provide this kind of syntactic evidence.

In the examples in (106-110), their responses to the *wh*-questions are grammatical. In these examples the questions demand the agent or the theme argument of the verb as a response.

- (106) %sit: they are drawing picture (Deniz-1;3,3)  
 MOT: **şimdi ne yap-a-lım?**  
 now what do-OPT-1P  
 'now, what shall we do?'  
 CHI: **a:bi<sup>8</sup>**  
 brother  
 'brother'
- (107) MOT: **kimler uçurtma uçur-uyo(r) burda ?** (Deniz-1;3,12)  
 who-PL kite fly-PROG here-LOC  
 'who are flying kite here?'  
 CHI: **a:bi a:bi**  
 brother brother  
 'brother brother'
- (108) FAT: **bu ne peki?** (Azra-1;2,10)  
 this what well  
 'well, what is this?'  
 CHI: **pi:ssi:@c [:kedi].**  
 cat  
 'cat'
- (109) MOT: **kim gezsın burda?** (Azra-1;2,10)  
 who walk+around-OPT here-LOC  
 'who will walk around here?'  
 CHI: **be:m: [:ben].**  
 T'
- (110) MOT: **ne istiyosun Tuna?** (Tuna-1;3)  
 what want-PROG-2S Tuna  
 'what do you want Tuna'

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<sup>8</sup> *a:bi* 'brother' is the name she uses for all male children who is older than her. Here, she wants her mother to draw a picture of a boy.

CHI: **mama**  
 'food'  
 'food'

However, as seen in the examples (111-114) the grammaticality seems to be just a matter of coincidence, that is, they give the same answers to their parents no matter what the question is. In the utterances in (106-110) their responses are grammatical since the questions demand the agent or the theme argument of the verb. In the examples (111-114) however, they fail, since there, either the verb (111-112) or other information is demanded (113-114).

- (111) MOT: **bebek yaptın mı?** (Deniz-1;3,3)  
 baby do-PAST-2S QUE  
 'did you draw the baby'
- CHI: **be:bi** [:bebek].  
 baby  
 'baby'
- (112) MOT: **istiyo(r) musun Aydedeye bakmak?**(Deniz-1;3,12)  
 want-PROG QUE-2S moon-DAT look-INF  
 'do you want to look at the moon?'
- CHI: **Aydeddet** [:Aydede].  
 moon  
 'moon'
- (113) MOT: **nerde baba?** (Azra-1;2,10)  
 where-LOC father  
 'where is (the) father?'
- CHI: **baba.**  
 father  
 'father'
- (114) %sit: Hazo is singing (Tuna-1;3)
- MOT: **Hazo ne diyor?**  
 Hazo what say-PROG  
 'what does Hazo say?'

CHI: (H)a:do.  
'Hazo'

Hence, at this stage the responses the children give to the wh-questions are not consistent enough to be able to be considered as syntactic evidence.

Subject-verb agreement could be considered to be another syntactic evidence since it reveals the fact that the verbs have a subject. However, as seen in Tables-11-14 below, children do not produce agreement markers yet.

In the tables, in the first and the second columns the age and the MLU of the subjects are given. In the third and the fourth columns the verbs which do not require an overt subject verb-agreement, namely the verbs whose subject is third person singular<sup>9</sup> and those that occur in command form are listed. In the fifth column, those verbs that are ungrammatically produced without an agreement marker are given. In the last one, there are verbs that are produced grammatically<sup>10</sup> with an agreement marker. In Table-14 displaying data from Tuna, the verbs that do not belong to any of the above categories are listed under "other" column for they are used differently from the adult speech and reflect the developmental features of the stage in which they are produced.

**Table-11: AZRA: subject-verb agreement**

age	mlu	3S subject	command	no agreement	agreement
1;1,19	0.00	-	-	-	-
1;2	1.00	-	giy@	-	-
1;3	1.00	-	aç@	-	-

<sup>9</sup> The verbs in command/optative form (e.g. *gel-sin*) are not included here since they require an overt agreement.

<sup>10</sup> As will be seen in the next stage there are ungrammatical utterances where the child produces the second person singular marker instead of the first person singular marker. Such verbs, although they are marked ungrammatical, are listed in this column since they are not "agreement" errors in the sense we discuss here, that is, as will be argued, they do not result from the child's inability to assign a subject to the verb she is producing.

**Table-12:** DENİZ: subject-verb agreement

age	mlu	3S subject	command	no agreement	agreement
1;3,3	1.48	<i>düş-PAST</i>	<i>kapat@</i>	<i>bak-*</i> ØFUT-ØIS(?)	
1;3,12	1.39	-	<i>gel</i>	-	-
1;3,27	1.51	<i>bit-PAST</i>	-	-	-

**Table-13:** MİNE: subject-verb agreement

age	mlu	3S subject	command	no agreement	agreement
1;6,21	1.49	<i>düş-PAST</i>	<i>kaydet@</i>	<i>iste-PROG-*</i> ØIS	-

**Table-14:** TUNA: subject-verb agreement

age	mlu	command	3S subject	other	no agreement	agreement
1;3	1.13		<i>düş-PAST</i>	<i>at@</i> .. <i>kalk@</i> .	<i>at-*</i> ØPAST- <i>*ØIS</i>	
1;4	1.29	<i>at</i>	<i>ol-PAST@</i> <i>düş-*</i> ØPAST <i>git-PROG/PAST</i>	<i>at@</i> <i>kalk@</i>	<i>at-PAST-*</i> ØIS <i>duy-PAST-*</i> ØIS <i>at-*</i> ØPAST- <i>*ØIS</i>	<i>duy-PAST-IS</i>
1;5	1.33	<i>gel</i> <i>brak</i> <i>kapat</i> <i>aç</i> <i>bak</i>	<i>ol-PAST@</i> <i>bit-PAST</i>	<i>at-PAST@</i>	<i>bak-FUT-*</i> ØIP <i>gel-NEG-*</i> ØFUT- <i>*ØIS</i>	-
1;6	1.14	<i>bak</i> <i>aç</i> <i>dur</i>	<i>ol-PAST@</i>	<i>at-PAST@</i> <i>at@</i>	<i>kapa-PAST-*</i> ØIS <i>aç-??</i>	
1;7	1.10	<i>bak</i>	<i>ol-PAST@</i>	<i>at-PAST@</i>		-

As illustrated in the tables, the subjects either produce utterances that do not require an agreement marker or they produce ungrammatical structures which lack agreement markers. The only agreement marker is the first person singular marker in Tuna's word *duydum* 'I heard' which is argued to be a frozen form above. In short, children do not produce the subject verb agreement markers in this stage yet, and hence their utterances fail to provide syntactic evidence.

Case marking on the NPs is another syntactic property that is lacking at this stage. In Tuna, Mine, and Azra, there is no case recorded yet, as seen in Table-15.

**Table-15: DENİZ/ AZRA/ MİNE/ TUNA: case**

	child/age	*OACC	ACC	*ODAT	DAT	*OLOC	LOC	*OABL	ABL	*OINS	INS
		type (token)	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)
	<b>DENİZ</b>										
1.	1;3.3	-	-	1(1)	1(1)	-	-	-	-	-	-
2.	1;3.12	4(4)	1(1)	1(1)	-	-	-	-	-	-	-
3.	1;3.27	-	-	-	-	-	-	-	-	-	-
	<b>AZRA</b>										
1.	1;1.19	-	-	-	-	-	-	-	-	-	-
2.	1;2.10	-	-	-	-	-	-	-	-	-	-
3.	1;3.6	-	-	-	-	-	-	-	-	-	-
	<b>MİNE</b>										
1.	1;6.21	-	-	-	-	-	-	-	-	-	-
	<b>TUNA</b>										
1	1;3	-	-	-	-	-	-	-	-	-	-
2.	1;4	-	-	-	-	-	-	-	-	-	-
3.	1;5	-	-	-	-	-	-	-	-	-	-
4.	1;6	-	-	-	-	-	-	-	-	-	-
5.	1;7	-	-	-	-	-	-	-	-	-	-

In Deniz's speech, on the other hand, there is just one accusative marker in (115) which is lacking in four other utterances in the same context and one dative marker (116) which is again not produced in two other words in (117-118). In (115), she is producing these words while looking at a picture and hence rather than perceiving them as the arguments of a 'verb', she is naming the people that she sees in the picture.

(115) MOT: sonra Aslı kim-i al-mış yan-ı-na? (Deniz-1;3.3)  
 then Aslı who-ACC take-MIŞ side-POSS&3S-DAT  
 'then whom does Aslı take with her?'

CHI: **anne-i** [:annesini].  
 mother-\*OPOSS&3S-ACC.  
 'the mother (in stead of her mother)'

MOT: **anne-si-ni** al-mış.  
 mother-POSS&3S-ACC take-MIŞ  
 '(she) took her mother'

MOT: başka?  
else  
'(who) else?'

CHI: **baba** [:baba-sı-nı].  
father-\*0POSS&3S-\*0ACC.  
father  
'father'

MOT: baba-sı-nı da al-mış.  
father-POSS&3S-ACC too take-MIŞ.  
'she took her father, too'

MOT: başka?  
else  
'(who) else?'

CHI: **be:bi** [:bebeğ-i-ni].  
doll-\*0POSS&3S-\*0ACC.  
'doll'

MOT: bebeğ-ini de al-mış başka?  
doll-POSS&3S-ACC too take-MIŞ else.  
'she took her doll, too, who else?'

CHI: **he:keş** [:herkesi].  
everybody-\*0ACC.  
'everybody'

MOT: &haşıhş başka?  
else  
'(who) else?'

CHI: **anne**  
mother-\*0POSS&3S-\*0ACC.  
'mother (instead of her mother)'

MOT: anne-si-ni de mi al-mış?  
mother-POSS&3S-ACC too QUE take-MIŞ.  
'did she take her mother, too?'

(116) MOT: nere-ye git-mek isti-yo(r)-sun?  
where-DAT go-INF want-PROG-2S  
where do you want to go?

(Deniz-1;3;3)

CHI: **a:bi-ye.**  
brother-DAT.  
'to the brother'

MOT: abi-ye mi git-çek-sin?  
brother-DAT QUE go-FUT-2S  
'will you go to the brother'

- (117) MOT: bu saat-te nere-ye gid-iyo(r)-sun? (Deniz-1;3,3)  
 this hour-LOC where-DAT go-PROG-2S  
 'where are you going at this hour'
- CHI: **oyi@f.**  
 oyi@f-\*ODAT.  
 'oyi@f'
- MOT: oyi@f-ye.  
 oyi@f-DAT.  
 'to oyi@f'
- (118) MOT: kim-e el sallı-yo(r)-sun sen? (Deniz-1;3,3)  
 who-DAT hand wave-PROG-2S you  
 'to whom are you waving your hand?'
- CHI: **a:bi.**  
 brother-\*ODAT.  
 'brother'
- MOT: abi-ye mi el sallı-yo(r)-sun?  
 brother-DAT QUE hand wave-PROG-2S  
 'Are you waving your hand to the brother?'

#### 4.2.3. (The Lack of) Evidence for Productivity

As seen in the examples above, the earliest verbs are uttered in limited contexts as responses to specific situations or as reactions to specific questions without any evidence for productivity. They occur either in uninflected forms in single-word utterances or in frozen forms.

In Table-16 below the verbs that occur in only one form and those that occur in more than one form are shown. According to that table, at this stage there is no verb yet which occurs in more than one form with different inflectional markers in the speech samples of Azra, Mine and Deniz.

**Table -16:** AZRA-TUNA-DENİZ-MİNE: Verbs in various constructions

child	age	the verbs that occur in only one form	the verbs that occur in more than one form
AZRA	1;2,10-1;3,6	<i>gel-</i> <i>aç-</i>	-
DENİZ	1;3,3-1;3,27	<i>düş-PAST</i> <i>bit-PAST</i> <i>bak</i> <i>gel</i> <i>kapat</i>	-
MİNE	1;6,21	<i>iste-PROG-ØIS</i> <i>düş-PAST</i> <i>kaydet</i>	-
TUNA	1;3,20-1;7,15	<i>düş-PAST</i> <i>duy-PAST-IS</i> <i>ol-PAST@</i> <i>bit-PAST</i> <i>brak</i> <i>aç</i> <i>kalk</i>	<i>at</i> <i>at-PAST@</i>  <i>bak</i> <i>bak-FUT-ØIP</i>  <i>gel</i> <i>gel-NEG-ØFUT*ØIS</i>  <i>kapat</i> <i>kapa-PAST*ØIS</i>  <i>git-PROG</i> <i>git-PAST</i>

In Tuna's speech, on the other hand, at 1;5, five verbs occur both in uninflected forms and with tense/aspect or negative markers (119-121). These verbs can be considered to be the examples of a transition period where the two stages overlap.

(119) MOT: *bakalım mı gel bida:?* (Tuna- 1;5)  
look-OPT-1P QUE come once+more  
'come, shall I look once more'

CHI: ***bak-ay:*** [bak-a].  
look-OPT-1P  
'(let us) look'

(120) MOT: *gelmiycen mi?* (Tuna- 1;5)  
come-NEG-FUT-2S QUE  
'won't you come?'

CHI: **ge:-me** [gel-me].  
 come-NEG-\*OFUT-\*01S  
 '(I will) not come'

(121) CHI: **ka:pe:-di** [kapa-dı] [=! playing with a toy]  
 close-PAST-\*01S<sup>11</sup> (Tuna- 1;6)  
 '(I) closed (it)'

CHI: **aş** [aç] [=! tries to open].  
 'open  
 'open'

CHI: **&zah** (/2) [=! tries to open].

MOT: **e açık o ama.**  
 eh, open it but  
 'ah, but it is open'

MOT: **o-nu aç-ma-ya uğraş-ma.**  
 it-ACC open-INF-DAT try-NEG  
 'don't try to open it'

To sum up, the verbs lack subject-verb agreement markers which imply that they do not yet have syntactic subjects. The position of the verbs in the utterances cannot provide evidence since they occur in one-word utterances. Case marking on the NPs has not emerged yet, either. In short, there is no syntactic evidence for the verb category at this stage.

#### 4.2.4. Other Characteristics of the Second Stage

##### 4.2.4.1. Inflections without Verbs

At this stage there are still long sequences of sounds which cannot be parsed into smaller units. These sequences can be considered to be examples of the children's struggle with the highly inflected complex structures. In order to be able to capture the

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<sup>11</sup> In this context, this form could also be the passive/middle form of the verb *kapa-n-du* 'it closed'. This is a typical situation for the first passive verbs to emerge. The child tries to open the toy but it closes, it resists against the child's act (Savaşır & Gee 1987).

melody of the words, they produce long sequences of sounds which are rarely meaningful in adult sense although they *sound like* Turkish multisyllabic words and sometimes even multiword utterances. In one instance given in (122), Deniz produces only the suffixes that would be attached to the verb without producing the verb stem<sup>12</sup>.

(122) CHI: **&im-bas:** [(kaşı)nmaz]. (Deniz-1;3,3)  
 (scratch)-PASS-NEG&AOR  
 'it must not be scratched'

MOT: **evet ora-yı kaşı-ma sonra yara ol-ur.**  
 yes there-ACC scratch-NEG then wound be-AOR  
 'yes, do not scratch there, then it gets injured'

This utterance reveals her 'semantically unmotivated analysis of words into combinable syllables' (Aksu-Koç & Slobin 1985:848).

#### 4.2.4.2. Other Words for Action

In section 4.2.1 above we have seen the "verb" *at* - 'throw' used as a "noun" naming an object by Tuna. In the data analyzed, there is also a noun which is used like a verb expressing the demand for an action. The word *da.t[:kağıt]* 'paper' is used by Deniz

<sup>12</sup> However, a similar example is produced by Mine at a much later age. In this utterance she produces only the inflection that is supposed to be attached to the verb stem (i). The same verb can be produced grammatically, as well, in the same context.

(i) %sit: they are looking at a book. (Mine-1;10,21)  
 MOT: bit-ti bak son.  
 finish-PAST look end  
 'it finished, look, it is the end'

CHI: **ti:** [(bit)-ti]!  
 (finish)-PAST.  
 'it finished!'

MOT: bit-ti.  
 finish-PAST  
 'it finished'

when she wants to draw something (123). It is also the word for a 'picture or 'something that is drawn' (124). In (125) it is not clear with what function she produces the word.

(123) %sit: takes the paper from her mother (Deniz-1;3,3)

CHI: **da:t da:t da:t** [:kağıt].  
'paper paper paper'

MOT: **sen mi yap-acak-sın?**  
you QUE do-FUT-2S  
'will you do?'

(124) MOT: Deniz o ne? (Deniz-1;3,3)  
Deniz it what  
'Deniz, what is it?'

CHI: **da:t da:t da:t** [:kağıt]!  
'paper paper paper'

(125) MOT: **ben ne yap-t-yım.** (Deniz-1;3,3)  
I what do-OPT-1S  
'what shall I do?'

CHI: **da:t** [:kağıt].  
'paper'

Another group of words that are used instead of verbs with the functions that are attributed to the verbs in adult speech are the onomatopoeic words which encode events and actions before the emergence of the verbs<sup>13</sup>. These words, which become a part of the child directed speech as well, are produced in this stage and throughout the initial phases of the next stage and with the emergence of more and more verbs they start to disappear. What is significant about the onomatopoeic words is that, similar to Deniz's *da:t[:kağıt]* 'paper' example, they describe the actions that the children perform or observe in a way similar to the earliest verbs.

<sup>13</sup> Here the emergence of verbs refers to the emergence of individual verbs and not to the syntactic category "verb" as a whole. In the developmental periods observed some verbs emerge later than the others, and until the child can produce the verb itself (or although she can produce the verb), as seen in the examples, she uses other words (or other ways) to express the action that is expressed with the respective verb in adult speech.

In (126), Deniz uses the word *bam bam* instead of the word *düş-müş* 'he fell'. At this stage she can produce the verb *düş-* 'fall', but here she prefers to express this event with an onomatopoeic word.

- (126) %sit: Deniz and her mother are looking at a picture book.  
 MOT: bisiklet-i-ne bin-miş göl-ün kenar-ı-na gel-miş.  
 bicycle-POSS&3S-DAT get+on-MIŞ lake-GEN&3S side-POSS&3S-DAT come-MIŞ  
 'he gets on his bicycle, and comes to the lake side'  
 CHI: bam:@o bam:@o (Deniz-1;3,12)  
 MOT: bam@o diye düş-tü.  
 fall-PAST  
 'he fell bam!'

In (127), *ne:ne:* is used instead of *uyuyor* 'she is sleeping'.

- (127) MOT: peki bur-da güneş nap-ıyo?  
 OK here-LOC sun what do-PROG  
 'OK, what is the sun doing here?'  
 CHI: ne:ne:@o.  
 MOT: e: e: @o uyu-yo. (Deniz-1;3,12)  
 sleep-PROG  
 'she is sleeping e:e:'

Similar examples with *e:e:* are seen in other subjects, too. In all the subjects, *e:e:* refers to a sleeping scene and it is used that way before the emergence of the verb *uyu-* 'sleep' (128-129). It is important to note that in (128) the father produces both the verb *uyu-* and the word *e:e:@o*, and the child picks up the word *e:e:@o* reflecting her preference for an onomatopoeic word to a verb.

- (128) FAT: anne uyu-yo. (Mine-1;6,21)  
 mother sleep-PROG  
 '(your) mother is sleeping'

FAT: e:e:e:@o yap-1yo anne.  
do-PROG mother  
'(she) is doing e:e:e:@o'

FAT: uyu-yo.  
sleep-PROG  
'(she) is sleeping'

CHI: e: e:@o.

(129) CHI: a:ba [:abla]. (Tuna-1;4)  
sister  
'sister'

CHI: e:eh@o.

MOT: hayır abla uyu-mu-yo.  
no sister sleep-NEG-PROG  
'no your sister is not sleeping'

Interestingly, these words do not refer only to the actions. They are also used to express notions that are related to these actions. Tuna, for instance, uses the word e:e:@o to refer to the bed of the teddy bear in the book (130). It is not clear whether she is talking about the act of sleeping or the bed where the action takes place.

(130) CHI: e:e:@o [=! points to the bed in the book].

MOT: yatak evet. (Tuna-1;7)  
bed yes  
'bed, yes'

CHI: ayı.  
'bear'

(...)

CHI: e:e:@o.

MOT: ayı-lar bura-da e:e:@o yap-ıyor.  
bear-PL here-LOC e:e:@o do-PROG.  
'the bears are sleeping here'

MOT: yatak-ta uyu-yor.  
bed-LOC sleep-PROG  
'they are sleeping in the bed'

This example shows the lack of differentiation in the way the child refers to the events and the objects. As opposed to Pinker (1984), the child does not necessarily link actions to verbs and object names to nouns. Such a distinction is required for the development of the syntactic categories nouns and verbs.

#### **4.2.5. Conclusion**

As discussed above, the earliest verbs that are produced at this stage are hardly productive and they lack syntactic and morphological evidence to be classified as verbs in the adult sense. The children produce the stem of the verbs without inflections or the inflections without stems or they are produced together but without any evidence for productivity. The nouns and onomatopoeic words are also produced along with the verbs referring to the actions. There has been no contrastive use of these categories in the speech of the children. By the end of this period, children start to produce utterances that reveal the features of a transition period. In the next stage, as discussed in the following section, we see concrete evidence for the development of the verb category.

### **4.3. Stage Three: The Emergence of the Verb Category**

In this stage the children's speech provide both morphological and syntactic evidence for the verb category and furthermore the children start to use verbs productively in various constructions. The analysis of this stage is based on the verbs produced by Azra (between 1;6,21 - 2;0,10), Mine (between 1;7 - 1;11,23) and Deniz (between 1;5,9 - 1;8,27). Tuna is excluded from this stage since her speech samples belong to the previous stage. The MLU of the subjects is around 2.0 at this stage.

### 4.3.1. Morphological Evidence

As discussed in the previous section, tense/aspect marking on the verbs is considered to be morphological evidence for the development of this category verb. As seen in Tables-17-19 below, at this stage all the subjects start to produce these morphemes and by the age of 2;0, all the tense/aspect morphemes are completely mastered. In Deniz's speech they are already established at 1;8,27, hence the rest of the data is excluded from the analysis of this stage.

**Table-17: AZRA: tense/aspect inflection**

sess	age	-DI	-Iyor	-mİş	-(y)AcAK	-Ir	-(y)A
4	1;6,11	1(2)	-	-	-	-	-
5	1;10,4	2(2)	-	-	2(4)	-	-
6	1;11	8(9)	-	-	7(10)	1(1)	-
7	2;0,10	14(16)	8(10)	1(1)	7(10)	3(4)	-

**Table-18: MİNE: tense/aspect inflection**

sess	age	-DI	-Iyor	-mİş	-(y)AcAK	-Ir	-(y)A
2	1;7	2(3)	1(1)	-	1(1)	-	-
3	1;8	1(1)	3(4)	1(1)	1(1)	-	-
4	1;9	2(3)	8(26)	-	1(1)	-	-
5	1;10,9	5(14)	7(10)	- <sup>14</sup>	2(3)	-	1(1)
6	1;10,21	10(26)	11(30)	-	4(6)	-	1(3)
7	1;11,23	22(39)	18(21)	1(2)	10(16)	6(7)	4(6)

<sup>14</sup> she replaces *-mİş* with *-DI* in two utterances as in (i)

- (i) STR: bu ne giy-miş? (Mine-1;10,9)  
 this what wear-MİŞ  
 'what has this worn?'  
 CHI: çoyap gi:-di.  
 socks wear-\*PAST.  
 'he wore socks'

Table-19: DENİZ: tense/aspect inflection

sess	age	-DI	-iyor	-miş	-(y)AcAK	-ır	-(y)A
4	1;5,9	2(3)	-	-	-	-	-
5	1;5,28	8(17)	2(2)	-	-	-	-
6	1;6,9	4(9)	-	-	-	-	-
7	1;7,3	20(59)	1(1) <sup>15</sup>	-	16	-	2(7)
8	1;7,8	6(7)	8(11)	-	-	-	2(4)
9	1;7,23	10(18) <sup>17</sup>	14(25)	-	2(7)	-	3(4)
10	1;8,11	11(35)	9(16)	4(9)	-	2(4)	10(14)
11	1;8,14	11(21) <sup>18</sup>	7(14)	1(1)	2(6)	2(4)	4(7)
12	1;8,27	19(41)	12(20)	7(7)	4(4)	5(17)	13(21)

#### 4.3.2. Syntactic evidence

At this stage children start to produce subject-verb agreement and by 2;0 years of age they completely master it. In Azra the first person marker is recorded at 1;6,21 (131), which is accepted to be the first session of the second stage.

(131) CHI: \*ac-ı:-cı-m [aç-ıl-dı-m] [?].  
 open-PASS-PAST-1S  
 'I am opened (it)'

<sup>15</sup> deletes -iyor in four utterances.

<sup>16</sup> deletes in one utterance.

<sup>17</sup> deletes in two words.

<sup>18</sup> deletes in one word.

In this example, which is ungrammatical, she attaches the agreement marker to a passive verb whose subject is third person singular<sup>19</sup>. In the later sessions as seen on Table-20, she produces agreement markers at proper contexts without any errors.

**Table-20: AZRA: subject-verb agreement**

age	mlu	3S subject	command	no agreement	agreement
1;6,11	1.29	<i>aç-PASS-PAST</i>	<i>al</i> <i>aç</i> <i>bak</i> <i>gel</i> <i>kalk</i> <i>otur</i> <i>uyu</i>	-	<i>aç-PASS-PAST-*IS [?]</i>
1;10,4	1.70	<i>bit-PAST</i> <i>kalk-PAST</i> <i>salla-*</i> ØREFL- <i>*ØPROG</i>	<i>al</i> <i>aç</i> <i>bak</i> <i>bul</i> <i>koy</i> <i>tak</i> <i>sil</i> <i>kapat</i>	-	<i>diş-FUT-IS</i> <i>otur-FUT-IS</i>
1;11	2.52	<i>al-PAST</i> <i>bat-PAST</i> <i>de-FUT</i> <i>dinle-FUT</i> <i>gel-PAST</i> <i>git-PAST</i> <i>kork-PAST</i> <i>salla-REFL-PAST</i> <i>yap-*</i> ØCAUS-FUT <i>çal-FUT</i> <i>ısır-PAST</i>	<i>(y+)et</i> <i>al</i> <i>aç</i> <i>bak</i> <i>bırak</i> <i>koy</i> <i>sus</i> <i>tak</i> <i>ver</i> <i>yap</i> <i>çal</i>	-	<i>al-FUT-IS</i> <i>giy-FUT-IS</i> <i>iste-FUT-IS</i> <i>iç-AOR&amp;NEG-IS</i> <i>iç-FUT-IS</i> <i>sok-PAST-IS</i> <i>çık-CAUS-FUT-IS</i> <i>üşü-PAST-IS</i>

<sup>19</sup> This example, as will be discussed in detail in the next chapter on the development of the argument structures of these verbs, can be analysed as an active verb in future tense, as well. No matter what the preceding suffix is, here it is apparent that she attaches a person marker onto the verb and hence provides evidence for the emergence of subject-verb agreement in the child's speech..

2;0,10	1.97	<i>a+yap-PAST</i> <i>-PROG</i> <i>al-PAST</i> <i>aç-PAST</i> <i>bağır-FUT</i> <i>dans+et-PROG</i> <i>düş-PAST</i> <i>gel-PROG</i> <i>gel-NEG-PAST</i> <i>git-PROG</i> <i>-PROG</i> <i>iste-PROG</i> <i>iste-MIŞ</i> <i>otur-PAST</i> <i>sok-PAST</i> <i>tut-PROG</i> <i>vur-PAST</i> <i>yap-FUT</i> <i>-PROG</i> <i>-PAST</i> <i>ye-FUT</i> <i>ye-PROG</i> <i>çek-PAST</i> <i>çevir-PAST</i>	<i>anlat</i> <i>aç</i> <i>tak</i> <i>ver</i> <i>yak</i> <i>çal</i>	<i>aç-AOR-QUE-2S</i> <i>aç-FUT-1S</i> <i>bak-FUT-1S</i> <i>iste-AOR-1S</i> <i>iste-AOR-QUE-2S</i> <i>kavga+et-PAST+1P</i> <i>oyuna-FUT-1P</i> <i>ver-∅AOR-QUE-2S</i> <i>ye-FUT-1P</i>
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In Deniz, the first agreement markers emerge at 1;5,9 in the verbs *aç-tı-k* 'we opened' and *bul-du-m* 'I found it'.

- (132) MOF: Nur taş-ı bul-unca ne di-yor-du? (Deniz-1;5,9)  
 Nur stone-ACC bul-ADVR what say-PROG-PAST  
 'what did Nur use to say when she found the stone'

CHI: **bu:-du-m!**  
 find-PAST-IS  
 'I found it'

- (133) %sit: they untie a part of a pillow.

CHI: **at-tı:-k!** [aç-tık] (Deniz-1;5,9)  
 open-PAST-1P  
 'we opened it'

MOF: aç-tı-k.  
 open-PAST-1P  
 'we opened it'

CHI: **aç-tı:!** [aç-tı].  
 open-PAST-\*1P  
 \*(we) opened it'

Although Deniz produces the person markers in these examples it is very hard to attribute full productivity to these words. As seen in (133), she produces *aç-ti-k* 'we opened' without person markers as well. This is considered to be a result of the child's hesitations in the production of the morpheme<sup>20</sup>. *Bul-du-m* 'I found (it)' (132), on the other hand, can be considered to be a frozen form. It is the word Nur utters whenever she finds a stone, hence it could be any word, not necessarily a verb marked with past tense and first person singular marker.

In the next session recorded at 1;5,28, on the other hand, the evidence for the emergence of the agreement markers becomes more apparent. The person markers appear on five verbs and are lacking only in three verbs, as exemplified in (135). The same verb can occur with and without a person marker (134).

(134) a. CHI: **ka:k-ti:** [=! gets up]. (Deniz-1;5,28)  
 get+up-PAST-\*01S  
 '(I) got up'

MOT: *kalk-ti-n mı?*  
 get+up-PAST-2S QUE  
 'did you get up?'

b. CHI: **ga:-di-m.** (Deniz-1;5,28)  
 get+up-PAST-1S  
 'I got up'

(135) %sit: Deniz wants to hold the telephone.

CHI: **dit o:-n:nu** [:tut o-nu]  
 hold it-ACC  
 '(I will/want to) hold it' (Deniz-1;5,28)

What makes this session recorded at 1;5,28 very significant is the errors Deniz produces. In one instance Deniz attaches the first person marker to a verb in the command form, as illustrated in (137), and in another case, as shown in (136) it is attached to a verb

<sup>20</sup> As stated in Ketrez (1996) Deniz has difficulty in producing the /k/ sound in word final position until 1;5,28. The sound cannot be produced in other words such as *bebek* 'baby', either, throughout the period analyzed. This word too, can be an outcome of a phonological deletion process.

whose subject is third person singular. These utterances can be considered to be the consequence of the child's attempts to use these morphemes productively.

- (136) MOT: *ol-du mu?* (Deniz-1;5,28)  
 fit-PAST QUE  
 'did it fit?'
- CHI: *\*o:-du-m.*  
 fit-PAST-1S  
 'I fit it'
- (137) MOT: *Deniz na ap-ı-yım ben bu kitab-ı?* (Deniz-1;5,28)  
 Deniz, what do-OPT-1S I this book-ACC  
 'Deniz, what shall I do with this book?'
- CHI: *\*oku-m.*  
 read-\*1S  
 '\*I read (it)'
- MOT: *\*oku-m?*  
 read-\*1S  
 '\*I read (it)'
- MOT: *oku oku.*  
 readread  
 'read (it) read (it)'
- CHI: *oku oku oku.*  
 readreadread  
 'read (it) read (it) read (it)'

In (136) she places a piece of a puzzle and as a response to the mother's question she says *ol-du-m* 'I fit it'. A similar example is seen in 1;7,3 as well, in this case the performer of the action is the mother and Deniz produces *o-du-n* 'you did it' when describing what her mother has done. Here the mother is trying to put the pencils on the table and make flags. When she finally succeeds, Deniz describes the action her mother performed. As will be discussed in Chapter Five, this is a function of a certain phase in the development of the argument structures of the verbs. The child marks the agent of the verb on the verb as if it is the subject of the verb although it is not.

The other example (137) is quite different. It is an example for an over marking of first person singular morpheme and implies that Deniz is aware of the verb final/[m] sounds and tries to produce them productively. This example also indicates that she is not yet fully aware of the functions of the sounds that she hears.

The overt expression of the subjects at this stage also indicates that these verbs do have subjects.

(138) %sit: they are looking at a picture book (Deniz-1;7,23)

where a child is swinging

CHI: i::a::i::a:: **ben de yapıyom.**

I too do-PROG-1S

'I am doing i:a:, too'

MOT: evet sen de yap-ıyo-sun.

yes you too do-PROG-2S

'yes you are doing, too'

(139) MOT: Deniiz na-ap-ıyo-sun? (Deniz-1;7,23)

Deniz what do-PROG-2S

'Deniz what are you doing?'

CHI: **ben badi** [:pazıl] yap-ıyo-m.

I puzzle do-PROG-1S

'I am doing puzzle'

In the following sessions although there are still instances where she does not produce the agreement markers, they are few in number when compared with those that are used properly. At 1;7,3, there are also some instances where she replaces the first person markers with second person markers (140).

(140) %sit: she is drawing a picture of her grandmother (Deniz-1;7,3)

CHI: **omi@f-yi boya-dı-n.**

omi@f-ACC paint-PAST-\*2S

\*(you) painted Omi@f (instead of I painted omi@f)'

This error which is seen in children acquiring other languages as well (Wojcik & Smoczynska, 1997), may be due to the fact that people around the child produce verbs in second person singular when addressing the child and the child perceives this marker as a morpheme that marks herself. This alternation does not stem from the gradualness in the syntactic/ morphological development of the child.

**Table-21: DENİZ: subject-verb agreement**

age	mlu	3S Subject	command	no agreement	agreement
1;5,9	1..28	-	-	<i>aç-PAST-∅IP</i>	<i>aç-PAST-1P</i> <i>bul-PAST-1S</i>
1;5,28	1.58	<i>ol-PAST</i> <i>bit-PAST</i> <i>git-PROG</i> <i>ol-PAST-∅1S</i>	<i>bak</i> <i>git</i> <i>oku-∅1S (?)</i> <i>oku</i> <i>otur</i> <i>kalk</i>	<i>tak-PAST-∅1S</i> <i>kalk-PAST-∅1S</i> <i>tut-??-∅1S (?)</i>	<i>bul-PAST-1S</i> <i>kalk-PAST-1S</i> <i>gel-PAST-1S</i> <i>giy(dir)-PAST-1S</i> <i>yat-PAST-1S</i>
1;6,9	1.78	<i>git-PAST</i> <i>bit-PAST</i>	<i>çık-ar</i> <i>yap</i> <i>at</i> <i>ver</i> <i>bak</i> <i>gel</i> <i>kapat</i> <i>aç</i> <i>koy</i> <i>otur</i> <i>öp</i> <i>al-NEG</i>	-	<i>at-PAST-1S</i> <i>gel-PAST-1S</i>
1;7,3	2.44	<i>düş-PAST</i> <i>boya-PAST</i> <i>yap-PAST</i> <i>kapat-PAST</i> <i>vur-PAST</i> <i>at-PAST</i> <i>ye-PAST</i> <i>ol-PAST-∅2S</i>	<i>yap</i> <i>otur</i> <i>bak</i> <i>kapat</i> <i>kurtar</i> <i>aç</i> <i>oku</i> <i>getir</i> <i>koy</i> <i>ver</i> <i>tak</i> <i>gel-NEG</i> <i>ye-NEG</i> <i>götür</i> <i>gel</i> <i>öp</i>	<i>yap-∅PROG-∅1S</i> <i>boya-∅PAST-∅1S</i> <i>-PAST-∅1S</i> <i>otur-∅PAST-∅1S</i> <i>ye-∅OPT&amp;3S</i> <i>kapat-PAST-∅1S</i>	<i>boya-PAST</i> <i>-OPT-1S</i> <i>git-PAST-1P</i> <i>ye-PAST-1S</i> <i>kapat-PAST-1S</i> <i>al-PAST-1S</i> <i>-1P</i> <i>yap-PAST-1S</i> <i>bitir-PAST-1S</i> <i>aç-PAST-1S</i> <i>gel-PAST-1S</i> <i>git-PAST-1S</i> <i>kes-PAST-1S</i> <i>iç -OPT-1S</i> <i>koy-PAST-1S</i> <i>kalk -PAST-1S</i> <i>oku-PROG-3P</i> <i>boya-PAST-∅2S</i> <i>benzet-PAST-∅2S</i> <i>ye-PAST-∅2S</i> <i>yap-PAST-∅2S</i> <i>bitir-PAST-∅2S</i> <i>koy-PAST-∅2S</i>

1;7,8	1.91	<i>k+al-*</i> PAST <i>yat-PROG</i> <i>ye-PROG</i> <i>gel-PROG</i> <i>y+yağ-PROG</i> <i>giy-PROG</i> <i>ellen-PROG</i> <i>ü+yap-PROG</i> <i>git-PAST</i> <i>yan-PAST</i> <i>gel-PAST</i> <i>de-PROG</i>	<i>oku</i> <i>bak</i> <i>gel</i> <i>tak</i> <i>yap</i>		<i>bak-OPT-1S</i> <i>düş-PAST-1S</i> <i>de-OPT&amp;3S</i> <i>-PAST-1S</i>
1;7,23	2.67	<i>yağ-PROG</i> <i>uyu-PROG</i> <i>de-PROG</i> <i>al-PAST-QUE</i> <i>bit-PROG</i> <i>kal-PAST</i> <i>bit-PROG</i> <i>benze-PROG</i>	<i>al</i> <i>aç</i> <i>yap-NEG</i> <i>oku</i> <i>ört</i> <i>bin</i> <i>in</i> <i>bak</i> <i>otur</i> <i>ye</i> <i>iç</i> <i>koy</i> <i>git</i>	<i>sen yap-OPT-*</i> Ø1S <i>ben bin-OPT-*</i> Ø1S <i>oku-PROG-*</i> Ø1S	<i>yap-PROG-1S</i> <i>bul-PAST-1S</i> <i>git-FUT-1S</i> <i>gel-PAST-1P</i> <i>iste-PROG-1S</i> <i>gel-PAST-1S</i> <i>-PROG-1S</i> <i>git-PROG-1S</i> <i>al-PAST-1S</i> <i>in-PAST-1S</i> <i>ver-PROG-1S</i> <i>aç-PAST-1S</i> <i>oku-PROG-1S</i> <i>koy-OPT-1S</i> <i>oku-OPT-1S</i> <i>ye-FUT-1S</i> <i>iç-PROG-1S</i> <i>düş-PAST-1S</i> <i>gel-PAST-1P</i>
1;8,11	2.73	<i>yap-PROG</i> <i>uyu-PROG</i> <i>ye-PROG-</i> <i>-MIŞ</i> <i>çıkart-PROG</i> <i>-MIŞ</i> <i>yağ-MIŞ</i> <i>yat-PROG</i> <i>gel-PAST</i> <i>çal-PAST</i> <i>git-PROG</i> <i>yap-PROG</i> <i>ol-PAST</i> <i>otur-NEG-PAST</i> <i>bit-PAST</i> <i>de-MIS</i> <i>getir-MIS</i> <i>bit-NEG-MIS</i> <i>gel-NEG-PAST</i>	<i>bak</i> <i>gel</i> <i>oku</i> <i>oku-NEG</i> <i>boya</i> <i>yat</i>	<i>oku-*</i> ØOPT-*Ø1S	<i>oku-OPT-1P</i> <i>kapat-PAST-1S</i> <i>aç-OPT-1S-QUE</i> <i>oyna-OPT-1S-QUE</i> <i>gel-PAST-1S</i> <i>bezle-OPT-1P</i> <i>yat-AOR&amp;NEG-1S</i> <i>otur-NEG- OPT&amp;3S</i> <i>-OPT&amp;3S</i> <i>uyu-PROG-3P</i> <i>getir-PAST-1S</i> <i>oku-PROG-1S</i> <i>öp-OPT-1S</i> <i>bak-OPT-1S</i> <i>boya-*</i> ØOPT-1S <i>-OPT-1S</i> <i>boya-PAST-1S</i> <i>*ØOPT-1P</i> <i>beğen-PAST-1S</i> <i>de-AOR&amp;NEG-1S</i> <i>uyu-NEG&amp;OPT-1P</i>

1;8,14	2.94	<i>ye-PROG</i> <i>açıl-PAST</i> <i>bit-PAST</i> <i>bit-NEG-PAST</i> <i>at-FUT</i> <i>uyu-PROG</i> <i>de-PROG</i> <i>gel-PROG</i>	<i>al</i> <i>ye</i> <i>bak</i> <i>açıl-NEG</i> <i>dur</i> <i>ye</i> <i>ağla</i> <i>bul</i> <i>elle</i> <i>uyu</i>	-	<i>gör-PAST-1S</i> <i>ye-PROG-1S</i> <i>-FUT-1S</i> <i>sür-PROG-1S</i> <i>gel-PAST-1P</i> <i>-1S</i> <i>bak-OPT-1S</i> <i>giy-PAST-1S</i> <i>otur-OPT-1S</i> <i>git-PAST-1P</i> <i>-OPT-1P</i> <i>gel-PAST-1P</i> <i>-1S</i> <i>çıkır-NEG-OPT-1S</i> <i>bul-PAST-1S</i> <i>-PROG-1S</i> <i>-OPT-1S-QUE</i> <i>ye-AOR-QUE-2S</i> <i>al-PAST-1S</i> <i>düş-PAST-3P</i> <i>uyu-OPT-3S</i> <i>-2P</i>
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In Mine the first agreement marker is produced at 1;19 (96).

(141) CHI: **bij did-ıyo-j** [biz gid-ıyo(r-u)z]. (Mine-1;9)  
 we go-PROG-1P  
 'we are going'

FAT: **nere-ye gid-ıyor-sunuz?**  
 where-DAT go-PROG-2P  
 'where are you going?'

(...)

CHI: **did-ıyo-j** *atta:@c* **bij** [gid-ıyo(r-u)z *atta* biz].  
 go-PROG-1P away we  
 'we are going away'

(142) a. CHI: **ba:ka a:-ca-ş** [başka al-ıca-z]. (Mine-1;10,21)  
 other take-FUT-1P  
 'we will take another one'

b. CHI: **hadı okku:-de-ş** [hadı oku-yca-z].  
 come+on read-FUT-1P  
 'come on, we will read'

Before this age, between 1;7-1;9 she does not produce the agreement markers in four verbs (143-146). In almost no utterance she produces the first person markers. The first person plural markers, however, appear in the utterances as seen in (141-142) above.

- (143) CHI: **ah tüş-üyo:** [düş-üyo(r)]. (Mine-1;8)  
 oh, fall-PROG-\*0I  
 'I am) falling'  
 MOT: **düş-mü-yor-sun.**  
 fall-NEG-PROG-2S  
 'you are not falling'
- (144) CHI: **boj-o:** [boz-uyo(r)]. (Mine-1;9)  
 destroy-PROG-\*0IS  
 'I am) destroying'  
 FAT: **boz-uyor mu-sun?**  
 destroy-PROG QUE-2S  
 'are you destroying them?'
- (145) CHI: **te:lik ki:-yo:** [terlik giy-iy(o)r]. (Mine-1;9)  
 slippers put+on-PROG  
 'I am putting on slippers'  
 FAT: **terlik mi giy-iyor-sun?**  
 slippers QUE put+on-PROG-2S  
 'are you putting on slippers?'
- (146) CHI: **oya-a aç-ıca:** [=! wants to turn the page]. (Mine-1;9)  
 there-ACC open-FUT  
 'I will turn there (the page)'

In a previous study which concentrated on the person markers in these subjects, the lack of the first person markers in Mine's speech is argued to be a consequence of the phonological development that she goes through (Ketrez, in press), that is the child has difficulty in producing nasal sounds and thus, these errors do not result from her syntactic development. Further evidence for this conclusion is observed in the examples (147-149) in which the child deletes only the final sounds of the morpheme and can produce the morpheme partially.

- (147) CHI: **ben oku-yu:.** (Mine-1;10,21)  
 I read-OPT-\*0IS  
 'let (me) read'

MOT: *sen oku tamam.*  
 you read, OK  
 'you read, OK'

(148) CHI: **bak-a-lı:** [bak-a-lı] (Mine-1;10,21)  
 look-OPT-1P  
 'let (us) look'

(149) MOT: *bu-nu oku-ya-lım mı?* (Mine-1;10,21)  
 this-ACC read-OPT-1P QUE  
 'shall we read this'

CHI: **oku-y.**  
 read-OPT-\*01P  
 'Let (us) read'

Moreover, as exemplified in (150) the [m] sound is not produced in the possessive marker either.

(150) CHI: **bu:n-u: aci-dı** [burn-u aci-dı]. (Mine-1;10,21)  
 nose-POSS&1S hurt-PAST  
 'My nose got hurt'

MOT: *burn-un mu aci-dı?*  
 nose-POSS&2S QUE hurt-PAST  
 'Did your nose get hurt?'

The deletion of the first person markers leads to a misinterpretation of the utterance by the adults and, as seen in the examples (151-152), they talk about the child as if she is a third person singular subject.

(151) CHI: **di:y-di:** [giy-di]. (Mine-1;9)  
 put+on-PAST-\*01S  
 '(I) put (it) on'

STR: **giydi::! Mine ayakkabı-sı-nı giy-di::!**  
 put+on-PAST Mine shoe-POSS&3S-ACC put+on-PAST  
 '(she) put (it) on, Mine put on her shoe'

(152) MOT: *hoppacık@i, gel.* (Mine-1;10,21)  
 come  
 'come!'

CHI: **otn:-du:** [otur-du].  
 sit-PAST  
 '(I) sat down'

MOT: otur-du.  
 sit-PAST  
 'she sat down'

This raises the question of whether the child perceives herself as a third person subject. Although such instances are observed in Azra's speech samples (153) the overt expression of the subjects in the examples (154-155) implies that it is quite unlikely for Mine, that is, it is apparent that she is not talking about herself as a third person singular subject.

(153) CHI: **Azza: bu:n-u siy** [Azra burn-u sil]. (Azra-1;10,4)  
 Azra nose-\*OPOSS&1S-ACC clean  
 'Azra clean nose'

MOT: efendim?  
 pardon?

MOT: Azra na-ap-ıcak?  
 Azra what do-FUT  
 'what will Azra do?'

CHI: **bu:n-u-nu si:-cak.**  
 'nose-POSS&3S-ACC clean-FUT  
 '(she) will clean her nose'

MOT: burn-u-nu sil-ıcek Azra.  
 'nose-POSS&3S-ACC clean-FUT Azra  
 'Azra will clean her nose'

(154) CHI: **ben çevir-ce:** (Mine-1;10,21)  
 I turn-FUT-\*01S  
 '(I) will turn (it)'

MOT: sen mi çevir-cek-sin?  
 you QUE turn-FUT-2S  
 'will you turn (it)?'

(155) a. CHI: **ben, anne, ben koy-i:** (Mine-1;10,21)  
 I mother I put-OPT-\*01S  
 'I, mother, I, let (me) put'

b. CHI: **be' koy** [ben koy].

I put  
\*'I put'

The deletion of the third person plural marker in utterances like the one in (156), on the other hand, is considered to be resulting from the child's overgeneralization of the optional deletion rule in Turkish agreement<sup>21</sup>, since the child can produce this marker in other utterances in the previous sessions as illustrated in (157).

(156) CHI: **\*hebaba gid-o:** [hep beraber gid-iyor]. (Mine-1;10,21)  
all+together go-PROG  
\*'s/he is going all together'

(157) STR: **Ali ner-de Mine-ci-im?** (Mine-1;9)  
Ali where-LOC Mine-DIM-POSS&1S  
'Where is Ali, Mine?'

CHI: **git-ti okul-a git-ti.**  
go-PAST school-DAT go-PAST  
'he went to school'

(...)

STR: **baba ner(e)-de?**  
daddywhere-LOC  
'where is the daddy?'

CHI: **git-ti.**  
go-PAST  
'he went'

(...)

<sup>21</sup> The third person plural marker can optionally be dropped in those structures where the subject is overtly expressed.

- (i) a. **Çocuk-lar bahçe-de oynu-yor-lar**  
'children are playing in the garden'
- b. **Çocuk-lar bahçe-de oynu-yor**  
'children are playing in the garden'
- c. **∅ bahçe-de oynu-yor-lar**  
'(children) are playing in the garden'
- d. **\*∅ bahçe-de oynu-yor**

CHI: **dit-ti-le:, anne** [git-ti-le(r), anne].  
 go-PAST-3P mother  
 'they went, mother'

Another reason for the deletion can be that Mine takes the adverb *hepberaber* 'alltogether' in the structure as the subject of the verb or a constituent that expresses plurality and hence, she does not mark the plurality twice. In any case, it is apparent that this error does not stem from an uneven development of the child's agreement system.

In 1;11,23 a significant decrease is observed in the agreement errors and by 2;0 they completely disappear.

**Table-22: MINE: subject-verb agreement**

age	mlu	3S subject	command	no agreement	agreement
1;7	1.45	git-PAST act-PROG bit-PAST	oku al	iste- $\emptyset$ NEG- $\emptyset$ PROG- $\emptyset$ IS iç-FUT- $\emptyset$ IS	
1;8	2.07	gel-MIS getir-PAST bit-PAST al-FUT çal-PROG	tut- $\emptyset$ NEG	bak-PROG- $\emptyset$ IS düş-PROG- $\emptyset$ IS	-
1;9	2.78	dur-PROG git-PAST aç-PROG	al bak çıkır say	bak-FUT- $\emptyset$ IS böz-PROG- $\emptyset$ IS giy-PROG- $\emptyset$ IS iste-PROG- $\emptyset$ IS çıkır-PAST- $\emptyset$ IS yap-PROG- $\emptyset$ IS	git-PROG-1P
1;10,9	2.04	yat-PROG -PAST sev-PROG salla-PROG bin-PROG otur-PAST giy-PAST ye-PROG iç-PAST git-PROG atla-PAST $\emptyset$ PAST oyna-FUT yap-PROG çıkır-PROG git-PROG	otur giydir çek ver çıkır bak	giy-PAST- $\emptyset$ IS oku- $\emptyset$ PAST- $\emptyset$ IS aç-FUT- $\emptyset$ IS iç- $\emptyset$ PAST- $\emptyset$ IS bak-OPT- $\emptyset$ IS	git-PAST-3P

1;10,21	2.25	<p>koy-PROG -PAST yat-PROG ol-PAST ye-PROG iç-PROG gel-PAST salla-PROG bit-PAST dök-PROG başla-PAST otur-PROG -PAST acı-PAST düş-PAST giy-PAST uyu-PROG oyna-PROG</p>	<p>çevir oku öp çıkar</p>	<p>ben koy-OPT-*Ø1S -PAST-*Ø1S bak-OPT-*Ø1P ben çevir-FUT-*Ø1S -PAST-*Ø1S otur-PROG-*Ø3P gel-PAST-*Ø1S ben oku-OPT-*Ø1S *ØOPT-*Ø1P git-PROG-*Ø3P al-FUT-*Ø1S çıkar-PROG-*Ø1S otur-PAST-*Ø1S yap-FUT-*Ø1S</p>	<p>bak-FUT-1P -OPT-1P oku-FUT-1P al-FUT-1P</p>
1;11,23	3.32	<p>bozul-PAST açıl-PAST -PROG sıkış-PAST karıl-AOR ol-PROG -MIS git-PAST -PROG -FUT oku-PROG okun-AOR dur-PROG ye-PROG giy-PROG vur-PAST ağla-PAST boya-PAST oyna-PROG</p>	<p>aç konuş söyle şişir at çıkar yap bırak bak</p>	<p>boz-PROG-*Ø1S çıkar-FUT-*Ø1S yap-PROG-*Ø1S aç-PROG-*Ø1S</p>	<p>boz-PAST-1S tak-AOR-1P otur-OPT-3S git-FUT PROG-1S oku-OPT-3S doldur-PAST-1P elle-NEG-PROG-1S bak-PROG-1S -OPT-1P ye-FUT-1S şişir-PAST-1P kız-PAST-1S -FUT-1P -FUT-1S -OPT-1P boya-FUT-1S düş-PROG-1S oyna-PAST-1P kalk-PAST-1S bas-FUT-1S gel-PAOR-AOR-QUE-1S -PAST--1S -FUT--1S koy-FUT-1S uyu-PAST-1S yat-PROG-3P çevir-PROG-1S</p>
2;1	3.30	<p>gel-PROG çık-PROG uyu-PROG dök-PROG muncıkla-PROG oku-PROG yat-PROG otur-MIS koş-PROG gir-MIS tak-MIS başla-PROG de-PAST</p>	<p>aç gel bak</p>	-	<p>boz-PAST-1S bak-OPT-1P yap-PROG-3P tanı-NEG- DI-1S gül-PROG-3P gez-PROG-3P sev-NEG-PAST-1S yat-PROG-3P otur-PROG-3P gir-AOR-1P git-PROG-1P -AOR-QUE-1S dur-OPT-3S</p>

Further syntactic evidence for the verb category is observed in the case markings on the NPs. As seen in Tables-23-25 all the case markers emerge and fully establish in this period before 2;0 years of age.

**Table-23: AZRA: case**

	AZRA	*0ACC	ACC	*0DAT	DAT	*0LOC	LOC	*0ABL	ABL	*0INS	INS
	age	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)
4.	1;6,11	1(1)	-	-	1(1)	-	1(2)	-	-	-	-
5.	1;10,4	-	2(4)	-	1(1)	-	7(11)	-	-	-	-
6.	1;11	2(2)	6(28)	1(1)	4(10)	-	7(10)	-	3(11)	-	-
7.	2;0,10	1(1)	8(14)	1(1)	8(16)	-	5(10)	-	2(3)	-	1(1)

**Table-24: DENİZ: case**

	DENİZ	*0ACC	ACC	*0DAT	DAT	*0LOC	LOC	*0ABL	ABL	*0INS	INS
	age	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)
4.	1;5.9	-	-	-	-	-	1(1)	-	-	1(1)	-
5.	1;5.28	-	1(3)	1(1)	2(2)	-	1(1)	-	-	-	-
6.	1;6.9	-	3(7)	1(1)	2(3)	-	-	-	-	-	-
7.	1;7.3	3(3)	6(11)	1(2)	6(11)	-	3(8)	-	2(2) (*1)	-	-
8.	1;7.8	-	1(4)	1(1)	5(6)	-	-	-	1(1)	-	-
9.	1;7.23	1(1)	4(10)	1(1)	7(15)	2(2)	9(29) (*1)	-	3(3)	-	1(1)
10.	1;8.11	-	11(65)	1(1)	4(5)	1(1)	3(19) (*1)	-	1(1)	-	1(1)
11.	1;8.14	-	4(13)	-	6(8)	-	5(25)	-	-	-	-
12.	1;8.27	3(6)	6(21)	1(1)	12(29)	-	6(15)	-	4(9) (*1)	-	-

Table-25: MINE: case

	MINE	*0ACC	ACC	*0DAT	DAT	*0LOC	LOC	*0ABL	ABL	*0INS	INS
	age	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)	type (token)
2.	1;7	-	1(1)	-	-	-	1(1)	-	-	-	-
3.	1;8	1(2)	-	1(1)	-	-	1(3)	-	-	-	-
4.	1;9	-	-	1(1)	2(2)	-	1(1)	-	-	-	-
5.	1;10,9	1(1)	1(1)	2(2)	2(3) *1(1)	-	2(10)	-	-	-	1(3) *1(1)
6.	1;10,21		1(1)	-	1(6)	-	2(11)	1(1)	-	-	-
7.	1;11,23	5(5)	5(7) *1(3)	2(2)	11(27) *2(2)	-	5(14)	-	3(4)	-	1(1)

Another syntactic evidence we discussed in the previous section was concerned with the answers the children give to the wh-questions. We concluded that their responses are arbitrary and the grammatical answers cannot be considered as evidence for syntactic ability. In this stage, too, there are ungrammatical utterances similar to the ones seen in the previous stage.

(158) MOT: peki (/3) bura-da na-ap-iyor? (Deniz- 1;5, 28)  
OK here-LOC what do-PROG  
'OK, what is he doing here?'

CHI: top.  
ball  
'ball'

MOT: top.  
ball  
'ball'

MOT: top-la oynu-yor.  
ball-INS play-PROG  
'(he is) playing with (the) ball'

(159) FAT: na-ap-ti-n Mine? (Mine-1;7)  
what-PAST-2S Mine  
'what is Mine doing?'

CHI: te:lik.  
slippers  
'slippers'

BRO: www.

FAT: **terlik mi giy-di-n?**  
 slippers QUE put+on-PAST-2S  
 'have you put on (your) slippers?'

However, the errors in the utterances at this stage do not result from the child's inability to construct phrases syntactically. Rather, as seen in the following examples, the children just do not know what information must be given in the responses. Although the answers that Deniz gives to the *wh*-questions are ungrammatical and thus she can be considered to be in the precategorical stage (Radford, 1990) throughout which children can produce such ungrammatical answers, she can master the sentence completion skills which Radford uses as another criterion in determining the child's grammatical performance. In this skill, the adult starts a sentence and the child completes it with the correct structure.

- (160) MOT: **no-ol-uyo bura-da?** (Deniz 1;7,8)  
 what happen-PROG here-LOC  
 'what is happening here?'
- CHI: **ya:buy** [:yağmur].  
 rain  
 'rain'
- MOT: **yağmur?**  
 rain  
 'rain?'
- CHI: **ya:-yo.**  
 rain-ing  
 '(it is) raining'
- MOT: **yağ-ıyor.**  
 rain-ing  
 '(it is) raining'
- MOT: **a:@i!**
- MOT: **bu ne?**  
 this what  
 'what is this?'

CHI: *diyen* [ːtren].  
 train  
 'train'

MOT: *çuf@o çuf@o çuf@o çuf@o.*

CHI: *ya:buy ya:-yo.*  
 rain rain-PROG  
 '(it is) raining'

MOT: *evet.*  
 yes  
 'yes'

In the first utterance in (160), she produces only the word *yağmur* 'rain' when the verb, (*yağmur*) *yağ-* 'rain' is questioned. When the mother starts the sentence with question intonation that expresses her demand for the following word she can say *yağıyor* 'raining'. This utterance shows her ability to complete sentences with correct phrases. The following is another example:

- (161) MOT: *çocuk na-ap-muş ayı-yı Deniz?* (Deniz- 1;7,28)  
 child what-MIŞ teddy-ACC Deniz  
 'what has he done to the teddy, Deniz?'
- CHI: *kuda-a-na.*  
 lap-POSS&3S-DAT \*0al-MIŞ  
 'on his lap'
- MOT: *kuca-a-na?*  
 lap-POSS&3S-DAT  
 'on his lap?'
- CHI: *a:-dı.*  
 put-PAST  
 '(he) put (it on his lap)' (literally, he held it)

In the following structures where the NPs occur in multiword utterances, it is apparent that the child produces these NPs as arguments of specific verbs that can be inferred from the context. They are even case marked when necessary.

- (162) MOT: *Ali-ye san-a ne al-dı?* (Deniz-1;5,28)  
 Aliye you-DAT what buy-PAST  
 'what did Aliye buy (for) you?'

CHI: bebek.  
doll  
'doll'

MOT: bebek al-dı.  
doll buy-PAST  
'(she) bought a doll'

MOT: başka kim san-a bebek get-ir-di?  
who+else who you-DAT doll bring-PAST  
'who else did bring you a doll?'

CHI: omi@f bebek.  
omi@f doll  
'omi doll'

(163) CHI: bu-nu anne. (Deniz-1;6,9)  
this-ACC mommy  
'this mommy'

MOT: evet bu-nu anne tut-uyor.  
yes this-ACC mother hold-PROG  
'yes, mommy is holding this'

(164) CHI: ba:duda [:palyaço] s u. (Deniz-1;5,28)  
clown water  
'clown water'

MOT: ba:duda [:palyaço] su mu iç-mek isti-yor?  
clown water QUE drink-INF want-PROG  
'does the clown want to drink water?'

In this example, too, we see that such ungrammatical utterances do not result from a lack of knowledge of the grammatical categories of phrases. The child does not know what to express in what context. She has not yet learned to "adapt the size and the complexity of [her] sentences to changing situations and interlocutors" as Brown (1973:168) states.

In short, in this stage children provide evidence for the development of the category verb and the errors do not result from a lack of syntactic knowledge.

### 4.3.3. Evidence for productivity

At this stage verbs start to appear in a variety of constructions. Those that occur in only one form in the previous sessions appear in other constructions marked with different tense/aspect markers and with different subjects in the sessions recorded at that stage. In addition to these, new verbs emerge in various forms.

In Azra's recordings at 1;6,11, we see the verb *aç-* 'open' in three different constructions (165-167). In the next recording at 1;10, she can produce the verbs *kalk-* 'get up' and *otur-* 'sit' whose command forms were recorded previously in various forms in this stage.

- (165) CHI: **aç-** (Azra-1;6,11)  
open  
'open'
- (166) CHI: **aç-ı-çı** [aç-ıl-dı]. (Azra-1;6,11)  
open-PASS-PAST  
'it opened'
- (167) CHI: **\*aç-ı-çı-m** [aç-ıl-dı-m]. (Azra-1;6,11)  
open-PASS-PAST-\*1S  
'\*I am opened (it)'

In Mine's recordings at 1;9, she can produce the verb *git-* 'go' with progressive marker and third person plural and first person plural subjects (168-170). It also appears with past tense marker.

- (168) CHI: **bij did-iyo-j** [biz gid-iyo(r-u)z]. (Mine-1;9)  
we go-PROG-1P  
'we are going'
- (169) %sit: she is talking about her brother. (Mine-1;9)
- CHI: **git-ti okul-a git-ti.**  
go-PAST school-DAT go-PAST  
'he went to school'

(170) %sit: she is talking about her brother and father. (Mine-1;9)

CHI: **dit-ti-le:, anne** [git-ti-le(r), anne].  
 go-PAST-3P mother  
 'they went, mother'

The verb *düş-* 'fall' which was recorded as *düş-tü* '(it) fell' in the first session is produced in another construction *düş-üyor-um* 'I am falling' at 1;8. *Bak* 'look' is another verb that is marked with both progressive and future and occurs in command form without markers.

In Deniz, at 1;5,28 the verb *kalk-* 'get up' occurs in various constructions (171-173). The verbs *otur-* 'sit', *git-* 'go', *ol-* 'be', and *oku-* 'read' are the similar examples that occur in various constructions.

(171) CHI: **anne ga:k** [:kalk] anne. (Deniz-1;5,28)  
 mother get+up mother  
 'mother, get up, mother!'

(172) CHI: **ka:k-ti.** [=! gets up] (Deniz-1;5,28)  
 get up-PAST-\*01S  
 '(I)got up'

(173) CHI: **ga:-dü-m.** (Deniz-1;5,28)  
 get+up-PAST-1S.  
 'I got up'

#### 4.3.4. Other characteristics of the third stage

Onomatopoeic words are produced by the children, throughout this stage, too. They are very similar to those produced in the previous stage and are considered to be characteristics of a transition phase. The utterance in (174) produced by Deniz is an example for such a word which replaces *ye-* 'eat'.

- (174) CHI: ham@o! (Deniz-1;5,9)  
 MOT: ham@o yap-ıyo(r) di-mi çocuk.  
 do-PROG NEG-QUE child  
 'the child is doing ham, isn't he?'

In this stage, the verbs that are replaced by onomatopoeic words in the previous sessions start to appear in the children's speech. As seen in (175), Azra practices the verb *uyu-* 'sleep' along with the word *e:e:@o*.

- (175) MOT: na-ap-ıca-z? (Azra -1;6,11)  
 what do-FUT-1P  
 'what will we do?'
- CHI: e: e:@o
- MOT: na-ap-ıca-z Azra?  
 what do-FUT-1P Azra  
 'what will we do, Azra?'
- MOT: e:e@o uyu:-ca-z evet.  
 sleep-FUT-1P yes  
 'we will sleep, e:e:@o, yes'
- MOT: hadi uyu-ca-z pı:şıpı:şıpı:@o  
 let's uyu-FUT-1P  
 'let's sleep, pı:şıpı:şıpı:@o'
- CHI: u:yu.  
 sleep  
 'sleep'

With the emergence of multi-word utterances, these words appear in correct verb positions, as seen in (176-177). In (176) Azra is talking about a doll who is asleep and in (177), Deniz is talking about her grandmother who is crying.

- (176) CHI: bebe e:e:@o. (Azra -1;6,11)  
 doll  
 'doll e:e:'
- MOT: bebe e:e:@o mi yap-ıyor?  
 doll QUE do-PROG  
 'is the doll doing e:e:@o?'

- (177) CHI: **omi@f hi::@o omi@f** (Deniz-1;5,28)  
 'omi@f is doing hi::@o' (omi @f is crying)

These are the last onomatopoeia examples observed in the children's speech. With the emergence of new verbs, they totally disappear.

#### 4.3.5. Conclusion

As also stated in Aksu-Koç & Slobin (1985) and in van der Heijden (1997) the verb category emerges before 2;0 years of age. Both morphological and syntactic evidence for the verb category start to appear by 1;5-1;7 in the subjects and with the emergence of the verb category the child starts to assign subjects to the verbs which appear in the form of subject-verb agreement on the verbs. The arguments occur appropriately with correct case marking. It is also important to note that verb morphology emerges at the same time with the nominal morphology implying that the differentiation of the categories start at that stage.

In this stage and after the age 2;0 when the child starts to produce complex structures she starts to face difficulties in production. These will be discussed in detail in the next chapter.

## **CHAPTER FIVE**

### **ACQUISITION OF TURKISH ARGUMENT STRUCTURE**

This chapter concentrates on the acquisition of verb argument structures and describes the development of verbs with different argument frames and the valency changing processes observed in the children's speech. The major aim of the chapter is to figure out whether children have difficulty in the production of certain types of verbs. The analysis is based on the data collected between 1;6 (the age when the evidence for the verb category start to appear) and 3;3 (the last recording of the longitudinal study).

Each type of argument structure and the verbs that belong to each type will be described in section 5.1. below. Section 5.2. discusses voice alternations that the verbs undergo.

#### **5.1. The Emergence of the Argument Structures**

As discussed in Chapter Four, the earliest verbs produced by the subjects provide hardly any evidence for the category verb and hence are not expected to have verbal argument structures. There are instances, for example, where a transitive agentive verb like *at-* 'throw' names the theme of the verb rather than describing the relation between the arguments.

The emergence of argument structures start at the same time with the development of the verb category which is by the end of the second stage. After this time, any verb produced is assigned an adult-like argument structure, that is, when the child produces the verb *aç-* 'open', for instance, it will be accepted to be an example for a two place predicate that has an agent argument who performs the action and a theme which is affected in the action. Thus any verb produced at this stage is considered to be an example of the type of argument structure that it possesses in adult speech. Thus, the verb *aç-* 'open' is considered to be exemplifying the emergence of a transitive agentive argument structure, or the verb *düş-* 'fall' that of an unaccusative argument structure.

All the verbs and their argument structures are shown in the tables in Appendix II. In each table the verbs are listed under the respective argument structure types. As seen in these tables, for all the subjects, the majority of the verbs produced are transitive agentive and unergative verbs whose subjects have the thematic role agent. Ditransitive verbs, too, appear although they are not as frequent as the transitive agentive and unergative verbs. Psychological verbs are quite rare. The most frequent one among them are psychological state verbs. The others almost never occur. Unaccusative verbs, whose subjects have the thematic role theme, appear in the first stages of the development but they are limited to a number of verbs. The most frequent unaccusative verbs in all subjects are *bit-* 'finish' and *düş-* 'fall'. Although the number of unaccusative verbs increase in time they are never produced as frequently as the transitive agentive and unergative verbs.

The major questions investigated in this section are as follows:

- (i) whether the child can produce all types of argument structures with equal ease, or not,

(ii) if the subject has difficulty with some argument structures, what are the possible reasons.

The analysis in this section is based on the verbs produced by Azra, Deniz, and Mine. The main concentration will be on verbs produced through the third stage and those produced after the age 2;0 since it is only by this time that the verb category develops and the argument structures start to appear. Those that are produced in the transition period of the previous stage, especially Tuna's verbs produced after 1;5, will also be taken into consideration.

### 5.1.1. The Analysis of the Argument Structures

Following is the discussion of each argument structure types observed in the children's speech. The classification of the argument structures is based on the Prominence Theory (Grimshaw, 1992).

#### 5.1.1.1. Transitive Agentive

Transitive agentive is the most frequent structure produced by the children. Such verbs like *aç-* 'open', *al-* 'take', *oku-* 'read' appear in a variety of constructions in the samples. The earliest transitive agentive verbs emerge as commands (178-179) and are accompanied by vocatives (180) or internal arguments (181) in two-word utterances.

(178) CHI: a:ç a:ç . (Azra- 1;6,11)  
 open open  
 'open open'

(179) CHI: o:kku. (Mine-1;7)  
 read  
 'read'

MOT: oku-ya-ma-m şimdi.  
 read-POT-AOR&NEG-1S now  
 'I cannot read now'

(180) CHI: anne **gid-aş** [:çık-ar]. (Deniz-1;6,9)  
 mother come+out-CAUS.  
 'mother take (this) off'

(181) MOT: ne yap-ıca-m? (Deniz-1;6,9)  
 do-FUT-1S  
 'what will I do?'

CHI: Dedi [-Deniz] **yap** [:yap].  
 Deniz do  
 'draw Deniz'

With the emergence of tense/aspect/modality markers the transitive agentive verbs occur in inflected forms as well (182).

(182) CHI: **at-tı-k** [:açtık]. (Deniz 1;5,9)  
 open-PAST-1P  
 'we opened it'

MOT: **açtık**.  
 open-PAST-1P  
 'we opened it'

The subjects, from the earliest phases onwards, produce the arguments of transitive agentive verbs. The case markers occur on the arguments when necessary (183), though, in the earliest phases there are instances such as (184) where the case markers are not present.

(183) CHI: **o-nu** +//. (Mine-1;7)  
 it-ACC  
 'it'

CHI: **iç-çece** [:içicem].  
 drink-FUT-\*01S  
 '(I) will drink (it)'

- (184) FAT: *ne-yi aç-a-lım?* (Azra- 1;6,11)  
 what-ACC open-OPT-1P  
 'what shall we open?'  
 CHI: **bu:** [=! points to the tape recorder].  
 this-\*0ACC  
 'this'

These errors are not due to the child's uneven development of the argument structures since from the contexts the verbs are produced, it is very apparent that the child is expressing a relation between the theme and the agent. Although she can produce the arguments and the verbs appropriately, she cannot yet assign accusative case to the internal argument which is considered to be a property of the development of the inflectional system.

The verbs children produce occur in proper contexts and in correct grammatical structures with or without arguments. There are also instances where the child produces only the arguments (with case marking) and deletes the verb itself. She is apparently trying to produce a two place predicate<sup>22</sup>.

- (185) CHI: **bu-nu anne.** (Deniz-1;6,9)  
 this-ACC mother  
 'this mother'  
 MOT: *bu-nu anne, evet bu-nu anne tut-uyo(r).*  
 this-ACC mother yes this-ACC mother hold-PROG.  
 'this mother, yes the mother is holding this'

<sup>22</sup> Children acquiring English, too, produce similar utterances, as exemplified in (i-ii)

- (i) cat more meat (the cat needs more meat)  
 (ii) Mummy cottage cheese (Mummy is eating cottage cheese)

Felix (1992:32) argues that these examples violate the theta criterion (Chomsky, 1981) since the NPs lack theta roles which are assigned by the verbs. Since there is no verb in the structure, the NPs lack theta roles. He argues that the utterances also violate X-bar theory since the NPs are the complements of a headless VP. In the Turkish example, however, we see that the NPs can bear theta roles and case although the verbs are not produced overtly. The accusative marker on the pronoun *bu* 'this' can be considered to be a syntactic evidence which is lacking in the English examples since in English nouns are not marked with overt case markers. The example implies that, such utterances (i-ii), as opposed to what Felix (1992) proposes, cannot provide evidence for the violation of UG principles.

In the production of transitive agentive verbs no difficulty has been observed in the children's speech. The verbs occur in the proper contexts. The only errors that result from the gradual development of argument frame of the verbs are observed in the causative structures which will be discussed in section 5.2.2.

#### 5.1.1.2. Unergative

The unergative verbs, like transitive agentive verbs emerge in one word utterances in command forms (186) and are sometimes accompanied by vocatives (187).

(186) CHI: **otuy!** (Azra-1;6,11)  
sit  
'sit down'

(187) CHI: **anne de:.** (Azra-1;6,11)  
mummy come  
'mummy come'

Soon after, they appear in a variety of combinations with overt arguments. In Deniz the first overt agent occurs with the verb *git-* 'go' (188). In Mine, with the verb *gel-* 'come' (189).

(188) CHI: **baba git-ti atta@c** (Deniz- 1;6,9)  
daddy go-PAST away'  
'daddy went away'

(189) CHI: **anne de:-miş** (Mine-1;8)  
mommy come-MIŞ  
'mommy came'

The verbs emerge in different constructions different subjects' speech. Although the first verbs are the same, they may be used in different constructions. In some subjects, some verbs emerge in command forms without inflections and in some

others they appear with full verbal morphology. The verb *bak-* 'look' which is one of the first unergative verbs produced by all the subjects provides evidence for this. In Deniz's speech, it occurs in command form in one word utterances (190), then appears with vocatives (191) and sentences (192). Only afterwards it is produced with verbal morphology (193).

- (190) CHI: **bak!** (Deniz-1;5,28)  
look  
'look'
- (191) CHI: **bak anne bak!** (Deniz-1;7,3)  
look mommy look  
'look mommy look'
- (192) CHI: **bak miki!** (Deniz-1;6,9)  
look Miki  
'look, Miki!'
- (193) CHI: **kapat-ti, bak!** (Deniz-1;7,3)  
close-PAST-\*01S look  
'look, (I) closed!'
- (194) CHI: **bak-i-ym** (Deniz-1;7,8)  
'look-OPT-1S'  
'let me look'

In Mine's speech however, the first *bak-* 'look' verb occurs with the tense/aspect markers at 1;8 (195-197). It is recorded in command form (198) only after 2;1.

- (195) CHI: **bak-iyó** (Mine-1;8)  
look-PROG-\*01S  
'(I) am looking'
- (196) CHI: **bak-ica:** (Mine-1;9)  
look-FUT-\*01S  
'(I) will look'
- (197) CHI: **anne, bi+da: bak-a-lum** (Mine-1;10,21)  
mother, once+more look-OPT-1P  
'mother, let's look once more'

- (198) CHI: **bak, popişini açıyo.** (Mine-2;1)  
 look bottom-POSS&3S-ACC open-PROG  
 'look, he is opening his bottom'

In Azra's speech, too it is one of the first unergative verbs recorded. It occurs only in command form.

- (199) CHI: **bak!** (Azra-1;6,11)  
 look  
 'look'

- (200) CHI: **bak, bu:da.** (Azra-1;10,4)  
 look, here-LOC  
 'look, it is here'

The subjects do not have difficulty in the production of the underived unergative verbs either. The only error is observed in the reflexive verb *sallan-* 'swing (oneself)' in Azra's and Deniz's speeches. The errors will be discussed in section 5.2.3.

### 5.1.1.3. Ditransitive

Ditransitive verbs emerge soon after the transitive agentive and unergative verbs. The first ditransitive verbs that appear in children are *ver-* 'give' (202, 203, 205) and *koy-* 'put' (201, 204, 206).

- (201) CHI: **xx xx koy.** (Deniz 1;6,9)  
 put  
 'put xx'
- MOT: **koy-yi-m ne-yi koy-iy-ım Deniz?**  
 put-OPT-1S what-ACC put-OPT-1S Deniz  
 'what shall I put, Deniz?'
- CHI: **bu-nu koy.**  
 this-ACC put.  
 'put this'

- (202) CHI: **kodada [:çikolata] ver.** (Deniz-1;6,9)  
chocolate give  
'give (me) chocolate'
- (203) CHI: **bu-nu vey çindi** (Azra-1;11)  
this-ACC give now  
'give this now'
- (204) CHI: **su koy** (Azra-1;11)  
water pour  
'pour water'
- (205) CHI: **ve:, çika: çika:** (Mine-1;9)  
give take+out take+out  
'give, take+out take+out'
- (206) CHI: **Ali koy-du oya-a** (Mine-1;10,21)  
Ali put-PAST there-LOC  
'Ali put (it) there'

No error has been observed in the production of ditransitive verbs.

#### 5.1.1.4. Psychological State

In the subjects' speech the verbs *bul-* 'find' and *iste-* 'want' appear as the most frequent psychological state verbs.

- (207) CHI: **bak da:pa [sayfa] bu:-du-m** (Deniz 1;8,27)  
look, page find-PAST-1S  
'look, I found it a page'
- (208) CHI: **Komi(k) Amca-y1 +//.** (Azra-2;0,10)  
comic uncle-ACC  
'Comic Uncle'
- CHI: **seyye:-me:k iste-e-mi-sin?**  
watch-INF want-AOR-QUE-2S  
'would you like to watch Comic Uncle?'
- (209) FAT: **fış+fış@o kayıkçı xx.** (Mine-1;9)  
boatman  
'fış+fış@o boatman'

CHI: bi+da (/2) **itti-yo** bi+da.  
 'once more want-PROG-\*01S once more'  
 'I want (to do it) once more'.

In Mine the verbs like *kız-* 'get angry with' (1;11,23), *sev-* 'like' (2;1), *tanu-* 'know' (2;1), in Azra's speech, *kork-* 'be afraid' (1;11), *şaşır* 'be surprised' (2;11,14), in Deniz's speech *inan-* 'believe' and *gör-* 'see' are among the other psychological verbs that are recorded.

#### 5.1.1.5. Psychological Causative

There has been no psychological causative verb observed in the subjects' speech<sup>23</sup> throughout the period analyzed.

#### 5.1.1.6. Psychological Agentive

Psychological Agentive verbs are produced quite rarely as well. In Deniz's speech *rahatsız et-* 'disturb' (1;11,10) and in Azra's speech *zarar ver-* 'do harm' (2;11,14) are the only examples recorded.

(210) MOT: rahatsız+et-me şimdi baba-yı. (Deniz-1;11,10)  
 disturb-NEG now daddy-ACC  
 'don't disturb the daddy now'

CHI: **ya:attız+et-ce-m** [=! goes to her father's room].  
 disturb-FUT-1S.  
 'I will disturb (him)'

<sup>23</sup> This verb *işe+yara* - is classified as a psychological causative verb in Kartal (1995). In the data, it is recorded in Mine's speech at 2;6, however in the present study this utterance is classified as an unaccusative verb

(i) CHI: hiç+biy **işe+yaya-ma-mış.** (Mine-2;6)  
 none work-NEG-MİŞ  
 'but it didn't work'

- (211) CHI: arkadaş-lar-in-a zarar+ver-me. (Azra-2;11,14)  
 friend-PLU-POSS&2S-DAT do+harm-NEG.  
 'don't do harm to your friends'

### 5.1.1.7. Unaccusative

Unaccusative verbs whose internal argument functions as their subjects, emerge at around the same time with transitive agentive and unergative verbs. When compared to the other verbs that have an agent subject (transitive agentive, unergative and ditransitive verbs), they are produced less frequently throughout the first stages of the development<sup>24</sup>. The earliest unaccusative verbs in Deniz and Mine are *bit-* 'finish' and *düş-* 'fall' which appear in one word utterances during the second stage. As discussed in the previous chapter, these forms occur in frozen form. In Azra, however, the first unaccusative verb is the passive verb *açıl-* 'be opened/open' which will be discussed in detail in the next section on argument alternations.

In the first utterances unaccusative verbs are limited to the description of the states of their subjects, as illustrated in the examples below. In (36) Mine is talking about her arm which is hurt.

- (212) CHI: **acı-yo:.** (Mine-1;7)  
 hurt-PROG  
 'it hurts'
- MOT: *neresi acıyo?*  
 where-POSS&3S hurt-PROG  
 'what hurts?'

In (213) however, she is talking about her feet. Just as the utterances, in the previous sessions, this example reveals an unproductive use of the verb *dur-* 'stay' since she utters

<sup>24</sup> There are 63 unaccusative verb types in the recorded data. The total number of the verbs that have an agent subject (transitive agentives, unergatives and ditransitives), on the other hand is 203, as seen in Appendix III.

the same form no matter what the father asks. In (214) she is talking about the final state of the book that they are reading.

- (213) FAT: **niye orda duruyo ayaklar?** (Mine-1;9)  
 why there-LOC stay-PROG foot-PL  
 'why do these feet stay there'
- CHI: **tu:-yo**  
 stay-PROG  
 '(they) stay'
- FAT: **niye dur-uyo?**  
 why stay-PROG  
 'why do (they) stay (there)'
- CHI: **tu:-yo**  
 stay-PROG  
 '(they) stay'
- FAT: **durmasa olmaz mı?**  
 stay-NEG-COND be-NEG&AOR QUE  
 'what if they do not stay?'
- CHI: **tu:-yo**  
 stay-PROG  
 '(they) stay'
- (214) CHI: **dit-ti!** (Mine-1;9)  
 finish-PAST.  
 'it is finished'
- MOT: **bit-me-di bak,son-u-na kadar çevir-e-lim.**  
 finish-NEG-PAST look end-POSS&3S-DAT till turn-OPT-1P  
 it is not finished, let's turn (the pages) until the last (page)

In Deniz we see similar, examples. In (215 and 216) they are talking about the state of the book, in (217), on the other hand, she is talking about a toy that, she says, resembles a stick.

- (215) MOT: **bit-ti mi?** (Deniz-1;5,28)  
 finish-PAST QUE  
 'did it finish'
- CHI: **bit-ti.**  
 finish-PAST.  
 'it finished'

- (216) MOT: **bit-ıyo mu kitap?** (Deniz-1;7,23)  
 finish-PROG QUE book  
 'is the book finishing?'  
 CHI: **bid-ıyo** [:bitiyor].  
 finish-PROG  
 'it is finishing'  
 (...)  
 CHI: **ay gal-dı** [:az kal-dı]  
 few remain-PAST  
 '(A) few (pages) remained'
- (217) CHI: **u:-a bendi-ya** [;çubuğ-a benzi-yor].(Deniz-1;7,23)  
 stick-DAT resemble-PROG.  
 'it resembles a stick'

Azra, similarly describes how she was hurt in (218) and in (219) she is talking about a pillow that falls on the floor. (220) exemplifies another unaccusative verb. In the example she is trying to put a glass into another glass which is much smaller.

- (218) CHI: **buya-a bat-tı.** (Azra-1;11)  
 here-DAT prick-PAST  
 'it pricked here'
- (219) CHI: **&a: sa:tuk düş-kü** [yastık düş-tü]. (Azra-2;1,29)  
 pillow fall-PAST  
 '(the) pillow has fallen'
- (220) CHI: **bu bu-ya sı:-mı-yo.** (Azra-2;1,29)  
 this here-DAT fit-NEG-PROG  
 'this does not fit here'

Unaccusative verbs are observed to cause difficulty for the children since in these structures a theme occurs in the subject position which, in children's grammar, is linked to the agent role. The errors are mostly observed in the passive structures and are seen in the process of mapping the arguments onto the syntactic positions. Such errors, which will be discussed in detail in section 5.2, are considered to result from the child's inability to link the role theme with the subject function-especially when there is an agent

involved in the event described by the verb. Similar to the passive verbs, the verb *ol-* 'be/happen/fit', too, appears in ungrammatical utterances. In such examples like (221-222) the verb agrees with the performer of the action, (the child herself) although the subject of the verb is third person singular. These utterances will be analyzed in detail in section 5.2.2.3 below.

(221) MOT: *ol-du-mu?* (Deniz-1;5,9)  
 be-PAST-QUE.  
 'did it fit'

CHI: \**o:-du-m.*  
*ol*-PAST-1S  
 '\*I fit (it)'

(222) MOT: *ol-du-mu?* (Deniz-1;7,8)  
*ol*-PAST-QUE.  
 'did it fit'

CHI: \**o:-du-n.*  
*ol*-PAST-2S.  
 '\*you fit (it)'

In other words, the child assigns the argument structure of the verb *yap-* 'do' to the verb *ol-* 'be'. The structure would be grammatical if she has chosen the verb *yap-* 'do' in both instances.

### 5.1.2. Conclusion

The subjects are observed to have no difficulty in simplex transitive agentive, unergative and psychological verbs. In these structures the overt expression of the arguments are determined by the pragmatic conditions. The children express the argument when they want to stress them or when they want to draw attention to them. Children's speech provides no evidence for a difficulty in the argument structures of the verbs. In

complex structures, specifically in the causative and reflexive verbs, the errors reflect the children's difficulty in assigning proper argument structures to the verbs they produce. These problems will be dealt with in detail in section 5.2.

In the acquisition of the unaccusative verbs the only error in mapping the argument structures is observed in the verb *ol-* 'be/happen/fit' in only one of the subjects speech and only in two instances. As will be discussed in the next section, in complex unaccusative structures, namely passives, however, argument structure errors are more frequent.

## 5.2. Voice alternations

In this section, passive, causative, reflexive, and reciprocal structures which emerge in the third stage of development are analyzed. The analysis is based on the speech samples of Azra, Deniz and Mine. For each construction the following issues are investigated:

- (223) a. the age the structures emerge
- b. whether the subjects use the structures productively or not. In order to determine the degree of productivity, the following issues are investigated:
- (i) Whether the stem form of the verb emerges earlier (or in the same session)
  - (ii) Whether the stem and the derived form ever occur in the same session/age
  - (iii) Whether they occur in the same context (when talking about the same/ similar topics)
  - (iv) Whether the subject can shift from one form to the other appropriately

- c. whether the child performs errors in these structures and what the nature and the possible reasons of these errors are.
- d. whether the morphological and syntactic requirements of these constructions are fulfilled simultaneously.

### 5.2.1. Passive

Passive verbs emerge at 1;6,11 in Azra's recordings. In Deniz's speech samples such forms appear at 1;7,8, and in Mine's speech, the first passive is recorded at 1;11,23. The total number of the passive verbs and the ratio of passive verbs to the total number of verbs in the data are shown in Table-26. According to this picture, in the subjects' speech, about %10 of the verbs bear passive morphology.

**Table-26:** The ratio of the passive verbs in the data

child	no. of sessions	age	total no. of verbs	total no. of passives	ratio
			type/token	type/token	type/token
AZRA	13	1;1,19-3;3,3	151/830	9/10	5.96/1.20
DENİZ	21	1;3,3-2;0,4	164/1917	14/26	8.53/1.35
MİNE	17	1;6,21-2;10	167/1108	16/46	9.58/4.15

#### 5.2.1.1. Passive verbs and productivity

In the tables below, all the passive verbs produced by the subjects and the ages of their emergence in the data are listed. In the first column the verb is given in passive form and in the next one the first time the form emerged is reported. The third and the fourth columns present the active forms and their age of emergence respectively. The age in the fifth column indicates the first recording when they occur at the same session,

and the one in the sixth column is the age when the child can produce the active and passive verbs in the same context, that is, when talking about the same topic. The age on the last column, on the other hand, is the age when the child can shift from one form to the other without error. Passive and middle verbs are separated with a thick line in the tables. The symbol [\*] indicates that the utterance of the respective verb at that age is ungrammatical.

**Table-27: Deniz: passive verbs**

I	II	III	IV	V	VI	VII
Verb	Age of Emergence	Verb	Age of Emergence	Occur. at the same session.	Occur. at the same context	Shift
<i>açıl-</i> 'be opened'	1;8,14	<i>aç-</i> 'open'	1;5,9	1;10,3	-	-
<i>delin-</i> 'be pierced'	1;8,27	<i>del-</i> 'pierce'	-	-	-	-
<i>yırtıl-</i> 'be torn'	1;8,27	<i>yırt-</i> 'tear'	-	-	-	-
<i>dökül-</i> 'be poured'	1;11,10	<i>dök-</i> 'spill'	1;9,2	1;11,10	1;11,10	1;11,10
<i>kırıl-</i> 'be broken'	1;11,10	<i>kır-</i> 'break'	1;11,10	1;11,10	1;11,10	1;11,10
<i>bozul-</i> 'be out of order'	1;11,21	<i>boz-</i> 'destroy'	1;10,3	1;11,21	-	-
<i>yıkıl-</i> 'collapse'	1;11,21	<i>yık-</i> 'destroy'	-	-	-	-
<i>ellen-</i> 'be touched'	1;7,8	<i>elle-</i> 'touch'	1;8,14	1;9,1	1;9,1	1;9,1
<i>yen-</i> 'be eaten'	1;10,3	<i>ye-</i> 'eat'	1;7,3	1;10,3	-	-
<i>den-</i> 'be said'	1;11,10	<i>de-</i> 'say'	1;7,8	1;11,10	-	-
<i>çıkaryl-</i> 'be taken off'	1;11,21	<i>çıkır-</i> 'take off'	1;6,9	-	-	-
<i>kapan-</i> 'be closed'	1;11,21 [*]	<i>kapa(t)-</i> 'close'	1;3;3	1;11,21	-	-
<i>(tutul-)</i> 'be held'	1;11,10	<i>tut-</i> 'hold'	1;11,21	-	-	-

In Deniz, the first passive *ellen-* 'be touched' emerges at 1;7,8. In this session she does not yet produce *elle-* 'touch' which emerges at 1;8,14. At 1;8,14, also *açıl-* 'open'

whose stem form was already recorded at 1;5,9, is produced for the first time. Hence at 1;8,14 Deniz has, at least, two passive verbs together with their active forms in her lexicon. Only after 1;9,1 she can use both *elle-* 'touch' and *ellen-* 'be touched' in the same context with a proper shift from one form to the other which is considered to be the evidence for productivity. The example is shown in (224).

- (224) CHI: bak bu-nnay baya [:para]. (Deniz-1;9,1)  
 look this-PL money  
 'look, this is money'
- MOT: evet o-nlar para.  
 yes it-PL money  
 'yes it is money'
- CHI: **elle-n-mi-yo.**  
 touch-PASS-NEG-PROG  
 'it is not being touched'  
 (...)
- CHI: **elle-n-mi-yo yap elle-n-mi-yo.**  
 touch-PASS-NEG-PROG do touch-PASS-NEG-PROG  
 'it is not being touched, say, it is not being touched'
- MOT: elle-n-mi-yo para-lar, çünkü?  
 touch-PASS-NEG money-PL because  
 'the money is not being touched, because?'
- CHI: bis [:pis].  
 dirty  
 'it is dirty'
- MOT: pis.  
 dirty  
 'it is dirty'
- CHI: **baba+anne de elle-mi-yo.**  
 grandmother either touch-NEG-PROG  
 'the grandmother doesn't touch it either'
- MOT: tabii.  
 of course  
 'of course'
- CHI: **elli-yo (/2).**  
 touch-PROG  
 '(she is) touching'
- MOT: elli-yo mu?  
 touch-PROG QUE  
 '(is she) touching?'

- CHI: **elli-yo.**  
touch-PROG  
'(she is) touching'
- MOT: **ama mecburen.**  
but compulsorily  
'but she has to'
- MOT: **bakkal-da para ve-rmek için tabii elle-me-si gerek-ir.**  
shop-LOC money give-INF for of course touch-INF-POSS&3S require-AOR  
'at the shop, to be able to give money (to the shopkeeper), she has to touch it of course'

In the example, they are talking about money and the mother wants it to be her habit not to touch money since it is not very clean. The example also indicates that, at this age, Deniz is aware of the semantic features that are embodied in the passive structures, that is, she knows that *elle-n-mi-yo* 'it is not being touched' means nobody, including her grandmother, is allowed to touch it.

In Mine's data the first passive verbs, *aç-ıl-* 'be opened', *bozul-* 'be destroyed', *kır-ıl-* 'be broken', *elle-n-* 'be touched' and *oku-n-* 'be read' are produced at 1;11,23. At the same session she can produce the verb *oku-n-* 'be read' interchangeably with its active form (225).

- (225) CHI: **Minik Kuş okku.** (Mine-1;11,23)  
Little Bird read  
'read Little Bird'
- MOT: **şimdi Minik+Kuş oku-n-ma-z.**  
now Little+Bird read-PASS-NEG-AOR
- CHI: **oku-n-u:r.**  
read-PASS-AOR  
'it is read'
- MOT: **oku-n-ur-mu?**  
read-PASS-AOR-QUE  
'is it read?'
- CHI: **oku-n-u:r.**  
read-PASS-AOR  
'it is read'

At this session, as seen in the table, the verbs *açıl-ıl-* 'be opened' and *bozul-ıl-* 'be destroyed', too, appear together with their active forms. These verbs imply that at 1;11,23 Mine can use-at least these passive verbs in proper contexts.

**Table-28: Mine: passive verbs**

I	II	III	IV	V	VI	VII
Verb	Age of Emergence	Verb	Age of Emergence	Occur. at the same session	Occur at the same context	Shift
<i>açıl-</i> 'be opened'	1;11,23	<i>aç-</i> 'open'	1;10,9	1;11,23	1;11,23	1;11,23
<i>bozul-</i> 'be out of order'	1;11,23	<i>boz-</i> 'destroy'	1;9	1;11,23	1;11,23	-
<i>kırıl-</i> 'be broken'	1;11,23	<i>kır-</i> 'break'	-	-	-	-
<i>yorul-</i> 'be tired'	2;3	<i>yor-</i> 'tire'	-	-	-	-
<i>sıkıl-</i> 'be bored'	2;3	<i>sık-</i> 'bore'	-	-	-	-
<i>yıkıl-</i> 'collapse'	2;3	<i>yık-</i> 'collapse'	-	-	-	-
<i>okun-</i> 'be read'	1;11,23	<i>oku-</i> 'read'	1;7	1;11,23	1;11,23	1;11,23
<i>söylen-</i> 'be sung'	2;5	<i>söyle-</i> 'say'	1;11,23	2;5	2;5	2;5
<i>oynan-</i> 'be played'	2;8	<i>oyna-</i> 'play'	1;10,21	2;8	2;8	2;8
<i>d+giril-</i> 'enter-P'	2;8 [*]	<i>d+gir-</i> 'enter'	2;1	2;8	2;8	-
<i>r+çekil-</i> 'be taken a photo of'	2;8	<i>r+çek-</i> 'take'	-	-	-	-
<i>yapıl-</i> 'be made'	2;10	<i>yap-</i> 'make'	1;8	2;10	2;10	2;10
<i>gidil-</i> <i>go-P'</i>	2;8	<i>git-</i> 'go'	1;7	2;8	2;8	-
<i>gelin-</i> 'come-P'	2;8	<i>gel-</i> 'come'	1;7	-	-	-
<i>ellen-</i> 'be touched'	1;11,23 [*]	<i>elle-</i> 'uch'	2;10	-	-	-
<i>b+yapıl-</i> 'have bath-PASS'	2;10	<i>b+yap</i> 'have bath'		-	-	-

Azra, too, can shift from one form to the other when the passive/middle verb *açıl-* 'open/be opened' emerges at 1;6, 11, as indicated in Table-29. Her other passive verbs emerge after 2;1.

- (226) CHI: **aç.** (Azra-1;6,11)  
 open  
 'open'
- MOT: **aç-tı-m o-nu o açık.**  
 open-PAST-1S it-ACC it open  
 'I opened it, it is open'
- MOT: **o bi teyp.**  
 it a tape-recorder  
 'it is a tape-recorder'
- CHI: **\*ac-ı:-cı-m [aç-ıl-dı-m]<sup>25</sup>.**  
 open-PASS-PAST-1S  
 'I am opened'
- MOT: **ac-ı:-dı-m, evet.**  
 open-PASS-PAST-1S yes  
 'I am opened, yes'
- MOT: **sen de aç-tı-n di: mi?**  
 you too open-PAST-2S NEG QUE  
 'you, too, opened (it), didn't you?'

The interpretation of the mother suggests that she takes the child's utterance as an active verb *aç-tı-m* 'I opened it'. The child's real intention, however, is not that clear. It is important to note that at this session she can produce the verb *aç-* 'open' along with the passive form, that is, she could have produced the active form if her intention were to utter an active sentence. Thus, *her* preference of the verb type is considered to be reflecting her

<sup>25</sup> In the utterance, the lateral sound in the passive suffix is deleted in a position where it is followed by a consonant and the preceding vowel is lengthened. This is a typical deletion process observed in children's speech (Arslan, 1996; Ketrez, 1996, Topbaş, 1996, among others). The plosive sound [d] is also assimilated to the preceding consonant or it is affricated and realized as an affricate sound. These processes, too, are observed very frequently in children's speech.

An alternative analysis could be that the child intends to say *aç-ıca-m* 'I will open (it)'. However, the mothers response to the utterance indicates that the child does not attempt or try to perform an action. Rather she seems to talk about something that she has done, an event in the past. The mother's immediately following utterance, in which she repeats the form produced by the child in past tense, also implies this. Moreover, as stated above the vowel length indicates the deletion of a consonant in this position. Because of all these reasons, this utterance is analyzed as a passive verb in the present study.

intention. In the analysis of the error, the interpretation is based on the form the child produces, rather than the mother's response to the utterance.

**Table-29:** Azra: passive verbs

I	II	III	IV	V	VI	VII
Verb	Age of Emergence	Verb	Age of Emergence	Occur. at the same session	Occur. at the same context	Shift
<i>açıl-</i> 'be opened'	1;6,11	<i>aç-</i> 'open'	1;3,6	1;6,11	1;6,11	1;6,11
<i>sıkıl-</i> 'be bored'	2;9,25	<i>sık-</i> 'bore'	-	-	-	-
<i>yorul-</i> 'be tired'	2;9,25	<i>yor-</i> 'tire'	-	-	-	-
<i>yıkıl-</i> 'collapse'	2;9,25	<i>yık-</i> 'collapse'	-	-	-	-
<i>dökül-</i> 'be poured'	2;9,25	<i>dök-</i> 'pour'	-	-	-	-
<i>üzül-</i> 'be sad'	3;3,3	<i>üz-</i> 'make sad'	-	-	-	-
<i>açıl-</i> 'be opened'	1;6,11 [*]	<i>aç-</i> 'open'	1;6,11	1;6,11	1;6,11	1;6,11
<i>yen-</i> 'be eaten'	2;1,9	<i>ye-</i> 'eat'	2;0,10	-	-	-
<i>boyan-</i> 'be coloured'	2;9,25	<i>boya-</i> 'colour'	-	-	-	-

As the tables and the examples indicate, there is evidence for the productive use of passive morphology at 1;6,11 for Azra, at 1;11,23 for Mine and at 1;9,1 for Deniz. At least at these ages, the children can produce these structures at proper contexts, interchangeably and together with their active counterparts which proves that children can productively construct passive morphology and further it implies that the children are aware of the syntactic and semantic properties of passive structures and can use them properly.

Although the children appear to master these structures, there are still errors, albeit rare, which can be considered to be significant since they reveal children's inability to produce some specific passive structures. Before going on to the nature and the reasons

of these errors, a classification of passives will be presented since such a classification will play a significant role in the analysis of the errors.

### 5.2.1.2. The types of passives

The passives produced by the subjects are classified in two major categories. Those that have a middle reading are grouped as middle passives, and all others (including those that are derived from intransitive verbs) are listed under the category other passives. As discussed in Chapter Two, middle passives are those which do not involve an agent in the action/state being described. Other passives, on the other hand, describe the action/state that is an outcome of an action performed by an agent.

According to this classification, the distribution of the passive verbs produced in both grammatical and ungrammatical structures are given in Table-30.

As seen in the first part of the table, the children are observed to have no difficulty in producing middle structures like *aç-ıl* 'open' as exemplified in (227). In this example Deniz is talking about her diapers while her mother is trying to diaper her and the mother's "intentions cannot be fulfilled due to the resistance from the object", in Savaşır and Gee's (1982)<sup>26</sup> terms.

- (227) CHI: **ad-ı:-dı** [aç-ıl-dı]. (Deniz-1;8,14)  
 open-PASS-PAST
- MOT: aç-ıl-dı, evet.  
 open-PASS-PAST yes  
 'it opened, yes'

---

<sup>26</sup> In this example as opposed to the proposals of Savaşır and Gee (1982) the resistance is expressed without a negative morpheme and is not restricted to the sentences in the present tense.

**Table-30:** The types of passives and their production.  
The numbers in the parantheses are the number of tokens

	AZRA		DENİZ		MINE	
	gram.	ungram.	gram.	ungram.	gram.	ungram.
middle	<i>aç-il-</i> (1) 'open'	-	<i>aç-il-</i> (12) 'open'	-	<i>aç-il-</i> (8) 'open'	-
	<i>sık-il-</i> (1) 'be bored'		<i>del-in-</i> (1) 'be pierced'		<i>boz-ul-</i> (6) 'be out of order'	
	<i>yor-ul-</i> (2) 'be tired'		<i>yırt-il-</i> (1) 'be torn'		<i>kır-il-</i> (7) 'break'	
	<i>üz-ül-</i> (1) 'be sad'		<i>dök-ül-</i> (1) 'be poured'		<i>yor-ul-</i> (5) 'be tired'	
	<i>yık-il-</i> (1) 'collapse'		<i>kır-il-</i> (1) 'break'		<i>sık-il-</i> (2) 'be bored'	
	<i>dök-ül-</i> (1) 'be poured'		<i>boz-ul-</i> (1) 'be out of order'		<i>yık-il-</i> (1) 'collapse'	
			<i>yık-il-</i> (1) 'collapse'			
other (tranV+ PASS)	<i>ye-n-</i> (1) 'be eaten'	* <i>aç-il</i> (1) 'be opened'	<i>kapa-n-</i> (1) 'be closed'	* <i>kapa-n-</i> (1) 'be closed'	<i>oku-n-</i> (2) 'be read'	* <i>elle-n-</i> (3) 'be touched'
	<i>boya-n-</i> (1) 'be coloured'		<i>elle-n-</i> (6) 'be touched'		<i>söyle-n-</i> (1) 'be sung'	
			<i>ye-n-</i> (1) 'be eaten'		<i>oyna-n-</i> (2) 'be played'	
			<i>tut-ul-</i> (1) 'be held'		<i>çek-il-</i> (1) 'be taken'	
			<i>de-n-</i> (1) 'be said'		<i>yap-il-</i> (1) 'be made'	
			<i>çık-ar-il-</i> (1) 'be taken off'			
(intranV+ PASS)	-	-	-	-	<i>gel-in-</i> (3) 'come-PASS'	* <i>gir-il-</i> (2) 'go+into-PASS'
					<i>gid-il-</i> (1) 'go-PASS'	
					<i>banyo+</i> <i>yap-il-</i> (1) 'have+bath-PASS'	
total	type (token) 8 (9)	type (token) 1 (1)	type (token) 14 (30)	type (token) 1 (1)	type (token) 14 (41)	type (token) 2 (5)

The other types of passives are produced grammatically when the children are talking about habits and norms, and general activities that are performed by everybody as exemplified in (228) in which Mine and her mother are talking about book reading at night.

(228) MOT: *şimdi Minik+Kuş oku-n-ma-z.* (Mine-1;11,23)  
 now Little+Bird read-PASS-NEG-AOR  
 'Little Bird is not read now' (We cannot read Little Bird now)

CHI: **oku-n-u:r.**  
 read-PASS-AOR  
 'it is read'

Similar to the middle passives above, these types of constructions lack specific agents who are supposed to perform the action and the event is presented as a general activity.

Although the children can produce these structures, they perform errors when the agents have specific reference. In these structures the agent is specifically the child herself, as opposed to the middle structures exemplified in (227) above it is not everybody (or nobody), as seen in (229).

(229) MOT: *elle-me!* (Mine-1;11,23)  
 touch-NEG  
 'Don't touch (it)'

CHI: **\*elle-n-mi-yo-m** *anne.*  
 touch-PASS-NEG-PROG-IS mother  
 'I am not touched (it), mother'

CHI: **\*elle-n-mi-yo-m.**  
 touch-PASS-NEG-PROG-1S  
 'I am not touched (it)'

MOT: *elle-mi-yo(r)-sun peki.*  
 touch-NEG-PROG-2S OK  
 'you are not touching (it), OK'

In these ungrammatical utterances the children express an action performed by themselves but attempt to talk about it from the point of view of the object that is undergoing the action. Although the subject is the internal argument which is the third person singular, the verb agrees with the agent that refers to the child herself, which she cannot (and perhaps does not want to) suppress. It is very significant to note that in (229) the mother's command preceding the child's utterance and her response to the child's utterance are in active forms indicating that the utterance produced by the child is expected and perceived as an active verb. This can be because of the person marker on the verb the child produces which is more salient than the passive marker in the middle of the verb. What is significant here is that the child produces a passive verb although the mother's command is in active form. Most probably her error results from her attempt to produce a passive verb in an active context. If the mother's utterance were in passive form she, perhaps, would not fail. It is a context she hears the verbs in passive form and she is just confused when she has to struggle with both forms. It is apparent that in this utterance she means 'I know that it must not be touched and so, I am not touching it'. Following are the detailed analysis of such errors and the developmental reasons that lie behind them.

### 5.2.1.3. The analysis of errors

As seen in table-30, errors are never seen in middle structures for which an agent is irrelevant. The most apparent example for the distinction children make between the types of passives come from Azra's first passive verb *açıl-* 'open'. In the same session she produces the verb twice in two different contexts and only one of these utterances is ungrammatical.

(230) CHI: *aç-ı:-cı [aç-ıl-dı].* (Azra-1;6,11)  
 open-PASS-PAST  
 'it opened'

- (231) CHI: \***ac-ı:-cı-m** [aç-ıl-dı-m]. (Azra-1;6,11)  
 open-PASS-PAST-1S  
 'I am opened'
- MOT: acı:-dı-m, evet<sup>27</sup>.  
 open-PASS-PAST-1S yes  
 'I am opened, yes'
- MOT: sen de aç-tı-n di: mi?  
 you too open-PAST-2S NEG QUE  
 'you, too, opened (it), didn't you?'

In the first case seen in (230), she holds a doll and the eye of the doll opens by itself. The other utterance is produced when she is talking about the recorder. She reminds her mother that once she was allowed to turn it on. The first utterance describes a state that "arises out of the properties of the object" (Savaşır & Gee 1982), and the second one is about the action performed intentionally by the child.

The errors observed in other subjects' speech are similar. In (232), Deniz is talking about a toy that she is trying to close. When she finally succeeds she announces her success: *kapa-n-dı-m* 'I am closed it'.

- (232) CHI: yap-a-mi-yoy-um [=! tries to close something]  
 do-POT-NEG-PROG-1S  
 'I cannot do it'
- CHI: kapa-n-ma-z, ben \***kapa-n-dı-m**<sup>28</sup>.  
 close-PASS-NEG-AOR I close-PASS-PAST-1S  
 'it does not close, I am closed (it)'
- MOT: sen mi kapadın? (Deniz-1;11,21)  
 you QUE close-PASS-PAST-2S  
 'Are you closed?'

In (233) Mine is talking about the recorder which she is not allowed to touch while they are doing the recording. Example (229) above, was also a similar example produced in the same context.

<sup>27</sup> The mother repeats the form produced by the child.

<sup>28</sup> The utterance is ungrammatical only in the intended meaning. It would be grammatical if the child meant 'I was veiled'. This is how the utterance is interpreted by the mother as we understand from the rest of the conversation which is not quoted here.

- (233) CHI: \*o, anne, o-nu **elle-n-mi-yce-m.** (Mine-1;11,23)  
 it mother it-ACC touch-PASS-NEG-FUT-IS  
 '\*it, mother, I will not be touched it'
- MOT: bu-nu elle-mi-y(e)cek-sin tabii.  
 this-ACC touch-QUE-FUT-2S of course  
 'of course, you will not touch this'

In this example, the pronoun *o* 'it' in nominative case is the subject of the passive verb *ellen-* 'be touched', however, after producing the subject, she "corrects" it and marks it with the accusative case as if she will produce an active verb, but she does not change the verb and produces it in the passive form. Despite that she marks it with the agreement marker as if it is an active verb that has a first person singular subject. All these reflect the child's hesitations about which syntactic structure requires which form of the verb.

In (234) she is talking about what she and her brother have done in the summer. Here, passive is introduced into the structure since it is an activity that is done by everyone in the summer. It could have been expressed as a general summer activity in passive form, but since she is talking about what she and her brother-two specific agents have done in the summer, she seems to be confused.

- (234) CHI: \*de:d-e [denize] **gi:r-il-di-k.** (Mine-2;8)  
 sea-DAT enter-PASS-PAST-1P  
 '\*we are gone into water'
- CHI: \*deniz-e **gir-il-di-k.**  
 sea-DAT enter-PASS-PAST-1P  
 '\*we are gone into water'
- CHI: sonra xx yap-tı-k.  
 then xx do-PAST-1P  
 'then we did xx'

What is significant about the syntactic structures of these errors is that children can produce the passive suffix, but the syntactic requirements of the passive constructions are

not fulfilled; the external argument, cannot be suppressed, as can be inferred from the agreement markers in the utterances from (229) to (234) and from the overt expression of the agent *ben* 'I' in (232). Moreover, the verb, although it contains the passive morpheme, still assigns accusative case to the NP in the internal argument position (233).

In short, passive morphology emerges at 1;6, 11 in Azra's speech, at 1;7,8 in Deniz's speech samples and at 1;11,23 in Mine's recordings, and their utterances at this age and in later sessions provide evidence for the productive use of the passive structures. The children, as seen above, can produce the structures in which the agent can be totally eliminated and become irrelevant for the state or the action that the verb describes that is, in those structures, the agents are suppressed easily. In those structures where the agent has a specific reference, the children have difficulty and their attempts to produce such constructions result in errors which surface as a discrepancy between the components involved in the passive formation. Possible reasons for this inability and its results and implications are as follows.

#### 5.2.1.4. Discussion

As seen in the examples above, early emergence and even the productive use of passive morphology does not imply the complete mastery of the structure as the children have difficulty in producing some specific constructions until 2;8. The errors have been observed only in those structures where the agent of the verb has a specific reference. These subjects can produce middle verbs and impersonal passives where the agent implies a non-specific person (or a group of people). This distinction appear to be similar to the adjectival-verbal passive distinction in English. In adjectival passives (e.g. the glass was broken), like the impersonal and middle Turkish passives, there appears to be no agent involved in the action whereas, in verbal passives (e.g. the glass was broken by the children) there is an agent who takes part in the event. Syntactically speaking,

verbal passives require the movement of the internal argument to the subject position while adjectival passives are formed in the lexicon without a syntactic movement. In the studies done on the acquisition of English passives, verbal passives are reported to emerge after the adjectival passives (Borer & Wexler 1987). According to Borer & Wexler (1987) the gradualness in the emergence of verbal passives is a consequence of the lack of the ability to form A-chains which, they argue, matures biologically.

Radford (1990), too, very similarly, states that the children in the early phases of development cannot form A-chains required in the passive formation. However, as opposed to Borer & Wexler (19987) he argues that this inability does not result from the uneven development of syntactic movement. According to Radford (1990) all the argument positions are inherently theta-marked in children's grammars and movement from one position to the other is not allowed since it results in double theta-marking, violating the theta criterion. According to his hypothesis the subject position already has the theta role agent and cannot be occupied by another argument with another theta-role. The arguments of Grodzinsky & Fox (1998), too, are very similar-if not the same. They argue that a child's inability to form passive structures results from her/his inability to associate one potential theta-position with more than one argument. Because of this inability, a theme cannot be transferred to the subject position and an agent cannot be moved to the by phrase where it will be assigned oblique case.

In the present study, too, children appear to have difficulty in forming passive structures other than middle and impersonal passives. They attach the passive suffix but it does not trigger suppression of the external argument and the structural case of the verb. As Borer & Wexler (1987) assume, in passive formation, syntax seems to emerge after the morphology. However, the reason that lies behind the errors is considered to be the uneven development of the argument structures of the verbs, that is, the mapping of the arguments to the syntactic positions rather than the gradual development of syntactic mechanisms. The first reason for this conclusion is that children can produce a great

majority of the passive verbs and have difficulty in only a number of them as seen in Table-30. If they had syntactic difficulty they would be expected to fail in all the structures that require the operation of the same mechanism. Secondly, children can also form another structure, the unaccusatives (such as *düş-* 'fall' or *bit-* 'finish'), which involve a similar kind of movement in syntax as discussed above. They can produce unaccusative structures which have the structure  $((y))$  in which there is no external argument. In passives, however, the structure Grimshaw (1990) proposes is  $(x-\emptyset(y))$  where there is an external argument but it is suppressed. As we have argued above, in the middle structures there is no agent involved in the event. It is totally eliminated and hence from the two possible structures, they are closer to the one proposed for the unaccusatives  $((y))$ . In short, there are two passive structures in Turkish and the child has difficulty with only one of them. The fact that children can produce structures in other impersonal passives, (such as *ellenmez* 'must not be touched' in command forms) reveals that they assign them the structure  $((y))$  and not the other one  $(x-\emptyset(y))$ , since they, just like middle verbs, describe the properties of the objects and do not necessarily involve an agent in the event structure from the point of view of the child. For instance, the recorder must not be touched and this is a property of the recorder, not a property of an action the agent can potentially perform.

When structures that the children master are compared to those in which they fail we see that the apparent lack of interface between the components can only result from the child's inability to eliminate the agent and is not a consequence of the gradual development of one of the individual components (morphology and syntax). In short, the uneven acquisition of the semantic structures of the passives blocks the interface of morphology and syntax. In a heavily inflected language like Turkish this gradual acquisition becomes apparent.

### 5.2.2. Causative

Causative emerges at 1;11 in Azra's recordings, in Deniz's speech samples it appears at 1;6,9 and in Mine's speech, the first causative is recorded at 1;9. The total number of the causative verbs and the ratio of the causative verbs to the total number of verbs in the data are shown on Table-31. According to the table, in the subjects' speech, less than %10 of the verbs bear causative morphology.

**Table-31:** The ratio of the causative verbs in the data

child	no. of sessions	age	total no. of verbs type/token	total no. of causatives type/token	ratio type/token
AZRA	13	1;1,19-3;3,3	151/830	7/11	74.63/1.32
DENİZ	21	1;3,3-2;0,4	164/1917	16/57	9.75/2.97
MİNE	17	1;6,21-2;10	167/1108	14/48	8.38/4.33

#### 5.2.2.1. The causative verbs and their productivity

In Deniz, the first causative verb is *çık-ar-* 'take off' which appears at 1;6,9 (235). This is the first causative verb recorded in the data.

(235) CHI: *anne, gid-aş* [ːçık-ar]<sup>29</sup>. (Deniz-1;6,9)  
 mother come+out-CAUS  
 'mother, take (it) off'

<sup>29</sup> The form is the outcome of the metathesis process through which the velar (/k/) and the coronal (/ç/) sounds in a verb are inverted (Ketz, 1997)

Before that, at 1;5,28, her first attempt to form a causative structure fails. In the example she is dressing one of her dolls (236). At this age she is unable to attach the causative suffix to the stem and this results in an ungrammatical construction.

- (236) CHI: \***gi:-di-m** [giy-di-m]. (Deniz-1;5,28)  
 put+on-\*0CAUS-PAST-1S  
 'I put (it) on'
- MOT: giy-di-m.  
 put+on-\*0CAUS-PAST-1S  
 'I put (it) on'
- MOT: **ama sen onu giydirdin.**  
 but you it-ACC put+on-CAUS-PAST-2S  
 'but you dressed it'

In (237) and (238) which are recorded at 1;7,3 she can again form causative verbs. In (237) she is drawing a picture of a girl who, she says, resembles Di:ba@c. Instead of saying *Di:ba@c'ya benzedi* 'She resembled Di:ba@c' she wants to say *Di:ba@c'ya benzettim* 'I made her resemble Di:ba@c' since she, on purpose, draws a picture resembling Di:ba@c. At 1;7,23 she can produce the verb *benze-* 'resemble' in a proper context as well. In (238) she is again drawing a picture.

- (237) a. CHI: Di:ba@c-yı<sup>30</sup> **bende-t-ti-n**<sup>31</sup>. (Deniz-1;7,3)  
 Di:ba-DAT/ACC (?) resemble-CAUS-PAST-\*2S  
 'I made it resemble to Di:ba@c'
- b. CHI: ur-a [:çubuğa] **bendi-ya** [:benziyor]. (Deniz-1;7,23)  
 stick-DAT resemble-PROG  
 'it resembles a stick'
- (238) CHI: **mıd-id-di-n** [:bit-ir-di-m]. (Deniz-1;7,3)  
 finish-CAUS-PAST-1S  
 I finished (it)

Although at 1;6,9 she can produce *çık-ar-* 'take off', at 1;8,11 and 1;9,1 she is unable to produce it properly.

- (239) MOT: bur(a)-da na-ap-muş? (Deniz-1;8,11)  
 here-LOC what do-MIŞ  
 'what has he done here?'
- MOT: badi-si-ni?  
 badi-POSS&3S-ACC  
 'her body?'
- CHI: \***tık-ıyo:-muş** [çık-ar-ıyor-muş].  
 come+out-\*0CAUS-PROG-MIŞ  
 '\*he is coming out (it)'
- MOT: çık-ar-ıyo(r)-muş.  
 come+out-CAUS-PROG-MIŞ  
 'he is taking it off'

<sup>30</sup> In this example she seems to replace the dative case with accusative case. However, it is quite unlikely for the child to perform such a case error, although it is not totally impossible. Throughout the period analyzed there is only one instance where she performs such an error and corrects it in the same utterance.

- (i) CHI: bu-nu [ɪ] bak bu-na.  
 this-\*ACC look this-DAT  
 'this, look at this'

In the example she finds a piece of paper on the floor and shows it to her mother. She produces the pronoun *bu* 'this' in accusative case and then corrects it.

Another analysis which is based on the phonological development of the child would be more plausible. Deniz goes through a period where she produces the low vowels (e.g. /e/ and /a/) as high vowel (e.g. /i/ or /ɪ/). She produces the word *anne* 'mother' as /anni/, for instance, and the word *kestim* 'I cut it' is produced as /gittim/. *Kalem* 'pencil', which is recorded as /kilem/, is another example. (Ketrez 1996:59-60). Hence this example, too, can be an outcome of the vowel raising processes, rather than a case marking error.

<sup>31</sup> She replaces the first person markers with second person markers in this period of development. From the context we understand that she is talking about what *she* has done.

(240) MOT: **çık-ar-i-ym mi ben san-a o-nu.** (Deniz-1;9,1)  
 come+out-CAUS-OPT-1S QUE I you-DAT it-ACC  
 'would you like me take it out for you?'

CHI: **\*çık [çık-ar].**  
 come+out  
 '\*come out'

(241) MOT: **o-ndan sonra?** (Deniz-1;9,1)  
 it-ABL after  
 'and then?'

CHI: **\*üt-tü-nü çık-yo [çık-arı-ıyor].**  
 cloth-POSS&3S-ACC come+out-PROG  
 'he is coming out his clothes'

MOT: **üst-ü-nü çık-ar-ıyo.**  
 cloth-POSS&3S-ACC come+out-CAUS-PROG  
 'he is taking off his clothes'

These errors imply that causative is not productive in her speech at 1;6,9 when she produces the first causative verb. The verb *çık-ar-* 'take+off' re-emerges at 1;9,19 and *giydir-* 'dress' emerges with correct morphology at 1;10,19 (242-244).

(242) CHI: **bu-nnay-ı dık-ay-ıy-mı-dım?** (Deniz-1;10,19)  
 this-PLU-ACC come+out-CAUS-AOR-QUE-2S  
 'could you take these off?'

MOT: **çıkariyım mı hepsini?**  
 come+out-OPT-1S QUE all-POSS&3S-ACC  
 'shall I take off all of them?'

CHI: **dık-ay hepdi-ni.**  
 come+out-CAUS all-POSS&3S-ACC  
 'take off all of them'

(243) CHI: **çık-a:-ma-dı-k.** (Deniz-1;10,19)  
 come+out-CAUS-NEG-PAST-IP  
 'we did not take off these'

(...)

CHI: **bu-nlar-ı dık-ar.**  
 this-PLU-ACC come+out-CAUS  
 'take off these'

- (244) CHI: **anne-ti toyap** [:çorap] **giy-diy-ye.** (Deniz-1;10,19)  
 mother-POSS&3S socks put on-CAUS-PROG  
 'her mother is putting on his socks'

Besides *giydir-* 'dress' and *çıkart-* 'take off' other causative verbs occur with proper causative morphology in proper syntactic structures. She can shift causative and non-causative verbs properly at 1;9,19 (245) which can be considered as an evidence for its productive use.

- (245) CHI: **dat-m-ı düse:-t-iyoy-um** [düzel-t-iyor-um]. (Deniz-1;9,19)  
 hair-POSS&2S-ACC fix-CAUS-PROG-1S  
 'I am fix-ing your hair'

(...)

- CHI: **düde:-di** [düzeldi].  
 fix-PAST  
 'it is fixed'

Table-32: Deniz: causative verbs

I	II	III	IV	V	VI	VII
Verb	Age of Emergence	Verb	Age of Emergence	Occur. at the same session.	Occur. at the same context	Shift
<i>giydür-</i> 'dress'	1;5,28 [*] 1;10,19	<i>giy-</i> 'wear'	1;5,28	-	-	-
<i>çıkart-</i> 'take off'	1;6,9 1;8,11 [*] 1;9,1 [*] 1;9,19	<i>çık-</i> 'come out'	1;8,11 [*] 1;9,1	1;9,19	-	-
<i>benzet-</i> 'to liken'	1;7,3	<i>benze-</i> 'resemble'	1;7,23	1;7,3	-	-
<i>bitir-</i> 'finish'	1;7,3	<i>bit-</i> 'finish'	1;3,27	1;8,27	-	-
<i>yapıştır-</i> 'stick on'	1;8,27	<i>yapış-</i> 'stick'	-	-	-	-
<i>düşür-</i> 'drop'	1;8,27	<i>düş-</i> 'fall'	1;3,3	1;8,27	-	-
<i>yedir-</i> 'feed'	1;9,2	<i>ye-</i> 'eat'	1;7,3	1;9,2	1;9,2	1;9,2
<i>düzel-</i> 'arrange'	1;9,19	<i>düzel-</i> 'be arranged'	1;9,19	1;9,19	1;9,19	1;9,19
<i>yatır-</i> 'lie'	1;9,19	<i>yat-</i> 'lay'	1;9,1	1;9,19	1;9,19	1;9,19
<i>kopar-</i> 'break off'	1;10,3	<i>kop-</i> 'break'	-	-	-	-
<i>değiştir-</i> 'change'	1;10,3	<i>değiş-</i> 'change'	-	-	-	-
<i>kaldır-</i> 'pick up'	1;10,19	<i>kalk-</i> 'get up'	1;5,28	-	-	-
<i>karıştır-</i> 'mix'	1;11,10	<i>karış-</i> 'mix'	1;11,10	1;11,10	-	-
<i>doldur-</i> 'fill'	1;11,10	<i>dol-</i> 'be filled'	-	-	-	-
<i>koştur-</i> 'make run'	1;11,21	<i>koş-</i> 'run'	1;11,21	1;11,21	-	-
<i>dedirt-</i> 'make say'	1;11,21	<i>de-</i> 'say'	1;7,8	1;11,21	-	-

The first causative observed in Mine is *çıkart-* 'take off' which is pronounced as *ka*.<sup>32</sup> at 1;9. In both examples, she is talking about her socks.

<sup>32</sup> The form is the outcome of the metathesis process through which the first and the last syllables of the word are inverted and then the last syllable is reduced. This processes results from the child's tendency to produce the velar sounds before the coronal sounds in a word (Ketrez 1997).

- (246) CHI: (çı)k-a: [:çık-ar]  
come+out-CAUS  
'take off'
- FAT: sen çık-ar.  
you come+out-CAUS  
'you take off'
- (...)
- FAT: çık-ar-dı-n mı?  
come+out-PAST-2S QUE  
'did you take it off?'
- CHI: (çı)k-a:-dı.  
come+out-CAUS-PAST-\*01S  
'(I) took (it) off'
- (247) CHI: çoyab-ı ka-çı-cak [:çorabı çıkarıcam]<sup>33</sup> .(Mine-1;11,23)  
socks-ACC come+out-FUT-\*01S.  
'(I) will take off the socks'

The other causative verbs recorded at 1;11,23 are *şişir-* 'blow up', *kaldır-* 'pick up', and *doldur-* 'fill'. *Düşür-* 'drop', *giydir-* 'dress', *durdur-* 'stop', *geçir-* 'put+on', *yedir-* 'feed', *batır-* 'sink', and *içir-* 'make drink' are the other causative verbs that are produced grammatically.

She can produce the verbs *yat-* 'lie' and *yatır-* 'lay' at the same session at 2;1 and the strongest evidence, that is, the use of two verbs with a shift occurs only at 2;10.

- (248) CHI: ayı-çığ-a yemek ye-dir-iyor.  
teddy+bear-DIM-DAT food eat-CAUS-PROG  
'he is feeding the teddy bear'
- MOT: anne-si na-ap-ıyo?  
mother-POSS&3S what do-PROG  
what is her mother doing?
- CHI: anne-si de yi:-yo anne-si de.  
mother-POSS&3S too eat-PROG mother-POSS&3S too  
'her mother is eating, too'

<sup>33</sup> She has difficulty in producing the first person marker until 1;11,23. We understand from the context that she, herself, is trying to take off the socks.

She can alternate between two forms of the verbs when she is stressing different arguments at 2;10. In such structures, the NPs occur with proper case markings from 2;6 onwards.

- (249) a. CHI: **buyaya ye:leş-tir-i-ym bu-nu** (Mine-2;10)  
 here-DAT place-CAUS-OPT-1S this-ACC  
 'let me place it here'
- b. CHI: **buya-a ye:leş-ti bu.**  
 here-DAT be+placed-PAST this  
 'this is placed here'
- (250) CHI: **sonra anne-si kurt-un karn-i-na bir dolu taş dol-dur-muş.**  
 then mother-POSS&3S wolf-GEN&3S belly-POSS&3S-DAT a+lot+of stone fill-CAUS-MIS  
 'then his mother fill the wolf's belly with a lot of stone' (Mine 2;6)

The first double causative construction is recorded at 2;7 when she is talking about her conversation with her doctor. The verb occurs twice in two different forms.

- (251) a. CHI: **sakın tolap-la-an-ı çık-a:-t-ma de-di.** (Mine 2;7)  
 don't-you sock-PLU-POSS&2S-ACC come+out-CAUS-CAUS say-PAST  
 'never take off your socks, he said'
- b. CHI: **sakın tolap-la-an-ı ka:-t-ma de-di.**  
 never sock-PLU-POSS&2S-ACC come+out-CAUS-CAUS say-PAST  
 'never take off your socks, he said'

Table-33: Mine: causative verbs

I	II	III	IV	V	VI	VII
Verb	Age of Emergence	Verb	Age of Emergence	Occur. at the same session	Occur at the same context	Shift
<i>çık-</i> 'take off'	1;9	<i>çık-</i> 'come out'	1;11,23	2;1	-	-
<i>doldur-</i> 'fill'	(1;11,23) 2;1	<i>dol-</i> 'be filled'	-	-	-	-
<i>şişir-</i> 'blow up'	1;11,23	<i>şiş-</i> 'be blown up'	-	-	-	-
<i>yatır-</i> 'lay'	2;1 2;10 [*]	<i>yat-</i> 'lie'	1;10,9	2;1	2;1	-
<i>düşür-</i> 'drop'	2;3	<i>düş-</i> 'fall'	1;6,21	-	-	-
<i>giydür-</i> 'dress'	1;10,9 1;11,23[*] 2;4	<i>giy-</i> 'wear'	1;8	1;10,9	1;10,9	-
<i>geçir-</i> 'put+on'	2;10	<i>geç-</i> 'get+on'	-	-	-	-
<i>yedir-</i> 'feed'	2;10	<i>ye-</i> 'eat'	1;10,9	2;10	2;10	2;10
<i>batır-</i> 'sink'	2;10	<i>bat-</i> 'sink'	-	-	-	-
<i>yerleştir-</i> 'place'	2;10	<i>yerleş-</i> 'be placed'	-	-	-	-
<i>içir-</i> 'make drink'	2;10	<i>iç-</i> 'drink'	1;7	2;10	-	-
<i>durdur-</i> 'stop'	2;8	<i>dur-</i> 'stop'	1;8	-	-	-
<i>patlat-</i> 'cause to explode'	2;10	<i>patla-</i> 'explode'	-	-	-	-
<i>gezdür-</i> 'take for a walk'	2;8	<i>gez-</i> 'walk around'	2;1	-	-	-

The only error is observed in the formation of a causative verb in the last session. Interestingly, Mine can produce this verb in a proper context at 2;1. However here at 2;10 she fails.

- (252) CHI: \*bebeğ-im-i yatağ-ım-a yat-tı-m. (Mine-2;10)  
doll-POSS&1S-ACC bed-POSS&1S-DAT lie-PAST-1S  
\*'I lay my doll on my bed'

Here, Mine cannot form the causative verb although syntactically the causative structure is constructed; the direct object of the verb appears with the accusative case and the indirect object appears with the dative case. The agent, the subject of the verb is marked with the first person marker on the verb. Although the verb does not bear causative morphology, the arguments fulfill the syntactic requirements of the causative construction.

In Azra, too, the first causative verb which emerges at 1;11 is *çık-ar-* 'take out'. The other causative verbs are *pişir-* 'cook' and *kaynat-* 'boil' (254) that emerge at 2;1,29, *kaldır-* 'pick up' (255) and *indir-* 'take down' (256) that emerge at 2;9,29, and *öldür-* 'kill' (257) in the last session:

- (253) CHI: **bu-nu çık-a:-da-m** [çık-ar-ıca-m]. (Azra-1;11)  
 this-ACC come+out-CAUS-FUT-1S  
 'I will take this out'
- (254) CHI: **bu: bebeğ-e su kayna-t-tıyo-yum.** (Azra-2;9,25)  
 this doll-DAT water boil-CAUS-PROG-1S  
 'I am boiling water for this doll'
- (255) MOE: **Bayan+Jumbo na-ap-tı?** (Azra-2;9,25)  
 mrs+Jumbo what do-PAST  
 'what did Mrs. Jumbo do?'
- CHI: **kal-dır-dı** çocuğ-u.  
 get+up-CAUS-PAST child-ACC  
 'she picked up the child'
- (256) CHI: **bu-nu indir** [=! doing gymnastics with her mother].  
 this-ACC go+down-CAUS  
 'take this down' (Azra-2;9,25)
- (257) MOE: **na ap-ıyo-sun karmca-ya?** (Azra-3;3,3)  
 what do-PROG-2S ant-DAT  
 what are you doing to the ant?
- CHI: **ö:-dü:-dü-m.**  
 die-CAUS-PAST-1S  
 'I killed it'

The verbs *kalk-* 'get up' and *kaldır-* 'pick up' occur in the same session at 2;9,25 and the verbs *çık-* 'come out' and *çıkart-* 'take out' occur at 2;11, 14 but in these recordings there is no shift from one form to the other. Despite lack of evidence for such a use in the data, she can use these verbs in proper contexts yielding to the fact that she is aware of the structure and its functions. In her speech recorded, there is only one error observed. In this example she produces the verb *yap-* 'do' instead of *yaptır-* 'have somebody do'.

(258) %sit: they are talking about her grandmother

MOT: berbere mi gitti? (Azra-1;11)  
 hairdresser-DAT QUE go-PAST  
 'did she go to the hairdresser?'

MOT: ne yaptı berberde?  
 what do-PAST hairdresser-DAT  
 'what did she do at the hairdresser'

CHI: \***kit+kit@o yap-cak.**  
 do-\*OCAUS-FUT  
 '\*she will do kit+kit@o'

Table-34: Azra: causative verbs

I	II	III	IV	V	VI	VII
Verb	Age of Emergence	Verb	Age of Emergence	Occur. at the same session	Occur. at the same context	Shift
<i>çık- 'take off'</i>	1;11	<i>çık- 'come out'</i>	2;9,25	2;11,14	-	-
<i>pişir- 'cook'</i>	2;1,29	<i>piş- 'be cooked'</i>	-	-	-	-
<i>kaynat- 'boil'</i>	2;1,29	<i>kayna- 'boil'</i>	-	-	-	-
<i>kaldır- 'pick up'</i>	2;9,25	<i>kalk- 'get up'</i>	2;9,25	2;9,15	-	-
<i>in-dır- 'take down'</i>	2;9,25	<i>in- 'come down'</i>	-	-	-	-
<i>yap-tır<sup>34</sup> 'have sb.do'</i>	1;11 [*]	<i>yap 'do'</i>	1;11	-	-	-
<i>çık-ar-t- 'take off'</i>	1;11,14	<i>çık-ar- 'take off'</i>	1;11	-	-	-
<i>öl-dür- 'kill'</i>	3;3,3	<i>öl- 'die'</i>	-	-	-	-

### 5.2.2.2. Analysis of the errors

As we have seen above, causative verbs are produced by the children very productively by 1;9. The errors, on the other hand, reflect a discrepancy between verb morphology, case marking and theta-roles similar to those seen in the acquisition of the passive structures. In such constructions, which are repeated below (259-264), the lack of the causative morphology on the verb does not block the occurrence of the appropriate case suffixes on the NP arguments reflecting change in the grammatical relations as predicted by the causative construction.

- (259) CHI: \*gi:-di-m. (Deniz-1;5,28)  
 put+on-\*OCAUS-PAST-IS  
 I put (it) on'

<sup>34</sup> She does not produce the verb in causative form. We understand from the context that the verb *yap* 'do/make' is produced with a causative sense.

- (260) MOT: bur(a)-da na-ap-muş? (Deniz-1;8,11)  
 here-LOC what do-MİŞ  
 'what has he done here?'  
 MOT: badi-si-ni?  
 badi-POSS&3S-ACC  
 'her body?'  
 CHI: \***tık-ıyo:-muş.**  
 come+out-\*0CAUS-PROG-MİŞ  
 '\*he is coming out (it)'
- (261) MOT: çık-ar-i-ym mi ben san-a o-nu? (Deniz-1;9,1)  
 come+out-CAUS-OPT-1S QUE I you-DAT it-ACC  
 'would you like me take it out for you?'  
 CHI: \***çık.**  
 come+out  
 '\*come out'
- (262) CHI: \*üt-tü-nü çık-yo . (Deniz-1;9,1)  
 cloth-POSS&3S-ACC come+out-PROG  
 'he is coming out his clothes'
- (263) CHI: \*bebeğ-im-i yatağ-ım-a yat-tı-m. (Mine-2;10)  
 doll-POSS&1S-ACC bed-POSS&1S-DAT lie-PAST-1S  
 'I lay my doll on my bed'
- (264) %sit: they are talking about her grandmother  
 MOT: berbere mi gitti? (Azra- 1;11)  
 hairdresser-DAT QUE go-PAST  
 'did she go to the hairdresser?'  
 MOT: ne yaptı berberde?  
 what do-PAST hairdresser-DAT  
 'what did she do at the hairdresser'  
 CHI: \***kit+kit@o yap-cak.**  
 do-\*0CAUS-FUT  
 '\*she will do kit+kit@o'

In the examples in (260-262) the intransitive verbs *çık-* 'come+out' and *yat-* 'lie' are produced as transitive verbs. In (259) and (264), on the other hand, the transitive verbs *giy-* 'wear' and *yap-* 'do' do not bear causative morphology which would make them

ditransitive verbs that could be produced in this context. The implications of these errors will be discussed in the following section.

### 5.2.2.3. Discussion

Causative verbs, too, appear quite early (around 1;6) in the data and they provide evidence for productivity by 1;9. Similar to the passives there are still errors in the utterances which can be argued to be resulting from the same tendencies discussed above in section 5.2.1.4.

In the causative errors the children use the underived stem form of the verbs, that is, the intransitive form, as transitive verbs. Instead of *çıkarmak*- 'take out/off', the child produces the verb *çık-* 'come out' or she replaces *yatır-* 'lay' with *yat-* 'lie'. The verbs *giy-* 'wear' and *yap-* 'do', too, although they are transitive agentive verbs, reflect a similar type of error in the utterances where they are supposed to be produced as ditransitive verbs.

These errors are similar to those reported in Bowerman (1982) for the children acquiring English. In (265) the verb 'die' replaces its causative counterpart 'kill', and (266) is produced instead of 'don't make me giggle'. In (267), similarly the verb 'eat' replaces the verb 'feed'.

- (265) he is gonna **die** you, David. (Hilary-4+ -Bowerman 1982:108)  
 (266) don't **giggle** me. (Eva-3;0 -Bowerman 1982:109)  
 (267) but I cannot **eat** her (Christy-3;3 Bowerman 1982:108)

Bowerman argues that these utterances are the outcome of the children's overgeneralization mechanism in which the verbs in question are treated as causative alternation verbs like 'open' which have both causative and noncausative counterparts with the same form (268).

(268) the door opened/the man opened the door

In Turkish, however, although the errors appear to be almost the same with the ones in Bowerman's data, the triggering mechanism must be different, since in Turkish such verbs that have both transitive and intransitive uses with the same form are quite rare<sup>35</sup>. Any kind of argument structure alternation of verbs in Turkish is marked with a different morphological structure. In Hebrew, too, like in Turkish, causativization requires morphological changes in the verb structure and Israeli children perform similar errors using intransitive verbs ungrammatically as transitives (Pinker, 1984, Slobin, 1984). Pinker (1984) argues that the children, rather than overgeneralizing the structures, have a mapping error as a result of which they map a different argument structure on the relational positions of the verb. In Hebrew, he states, the child must have created these verbs "by mapping the thematic roles of the causal predicate directly onto the grammatical relations that express them" (Pinker, 1984). In Turkish, too, this seems to be the plausible explanation of the errors reported above.

The causative errors are considered to be similar to the passive errors since in both structures, the agent, the performer of the action is mapped onto the subject position and is marked on the verb. In the errors with the verbs *giy-* 'wear', *çık-* 'come out', and *yat-* 'lie' the subject of the verb is inanimate. In the verbs *giy-* 'wear' and *yat-* 'lie' the subject is the doll and in the verb *çık-* 'come out' it is the socks. When we consider the event structure it is, actually, the argument that is affected by the action performed by the

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<sup>35</sup> The verb *yaz-* 'write' is one of such verbs a child can hear in her acquisition period.

(i) bu yazı-yı ben yaz-dı-m/bu kalem yaz-mı-yor.  
 this writing I write-PAST-IS/ this pen write-NEG-PROG  
 'I wrote this writing/ this pen does not write'

child. Hence, the child who perceives herself as the real performer of the action maps herself onto the subject position<sup>36</sup>.

The errors observed in the verb *ol-* are also the same with those discussed here. In the verb *ol-* 'be/happen/fit', too, although there is no agent in the argument structure of the verb the child inserts an agent who she accepts as the real performer of the action, and thus must be the subject of the verb.

In the ungrammatical structures Deniz produces, the verb agrees with this agent as a result of whose action the state that is described by the verb comes about.

(269) MOT: *ol-du-mu?* (Deniz-1;5,9)  
 be-PAST-QUE.  
 'did it fit'

CHI: *\*o:-du-m.*  
 ol-PAST-1S  
 '\*I fit (it)'

(279) MOT: *ol-du-mu?* (Deniz-1;7,8)  
 ol-PAST-QUE.  
 'did it fit'

CHI: *\*o:-du-n.*  
 ol-PAST-2S.  
 '\*you fit (it)'

In example (269) Deniz and her mother are trying to complete a puzzle. Deniz places a piece of the puzzle and says *o:dum* 'I fit it'. The one in (270) is produced in a similar context, in this case the mother is the performer of the action<sup>37</sup>. She places the pencils on the table and makes "flags" with them.

<sup>36</sup> This analysis finds support in the studies reported by psychologists (Cole & Cole, 1996). In children's early play, children direct their play actions at themselves and see themselves as "the agent" (e.g., an infant pretends to feed herself with a spoon). Only in the later phases of development, which is after 2;6, can they transfer the agent role to their toys (e.g., the child has a mother doll feed a baby doll, as if the doll is carrying out the action by itself). Similarly, in the causative errors reported in the present study, we see an inability to transfer the agent role to the object, and hence the themes cannot be transferred to the subject positions in the sentences.

<sup>37</sup> She can produce the verb grammatically as well. These are the only errors observed in the data.

In short, in causatives, too, like in passives, the argument which the child perceives as the agent of the verb is mapped onto the subject position of the verb.

### 5.2.3. Reflexive

Reflexive emerges at 1;11 in Azra's recordings, in Deniz's speech samples it appears at 1;8,27, and in Mine's speech, the first reflexive is recorded at 2;1. The total number of the reflexive verbs and the ratio of reflexive verbs to the total number of verbs in the data are shown on Table-10. According to the table, in the subjects' speech, less than %5 of the verbs bear reflexive morphology.

**Table-35:** The ratio of the reflexive verbs in the data

child	no. of sessions	age	total no. of verbs	total no. of reflexives	ratio
			type/token	type/token	type/token
AZRA	13	1;1,19-3;3,3	151/830	7/14	4.63/1.68
DENİZ	21	1;3,3-2;0,4	164/1917	3/10	1.82/0.52
MİNE	17	1;6,21-2;10	167/1108	8/15	4.79/1.35

#### 5.2.3.1. The first reflexive verbs and productivity

In Deniz, the first reflexive verb that appears at 1;8,27 is *yıkan-* 'have bath':

- (271) MOT: ah bur-da na ap-ıyo bebek? (Deniz-1;8,27)  
 ah here-LOC what do-PROG doll?  
 'ah what is the doll doing here?'  
 CHI: ba:yo.  
 bath  
 '(she is having) bath'

MOT: *banyo yap-ıyo.*  
 bath do-PROG  
 'she is having bath'

MOT: *bur-da?*  
 here-LOC  
 'here?'

CHI: *ıka-n-ıyo* [:yıkaniyor].  
 wash-REFL-PROG  
 she is having bath (literally she is washing herself)

MOT: *yıka-n-ıyo-mu?*  
 wash-REFL-PROG-QUE  
 'is she having bath?'

*Sallan-* 'swing (oneself)' and *saklan-* 'hide (oneself)' are the two other verbs that emerge at 1;11,10. In Deniz these three verb are the only verbs produced in reflexive forms. There is no example in which Deniz shifts from one form to the other. In the utterances with reflexives she appears to have no difficulty but at 1;7, 23 there is an example recorded in which she avoids using the reflexive verb and replaces it with an onomatopoeic form and the verb *yap-* 'do'.

(272) %sit: they are looking at a picture book (Deniz-1;7,23)

where a child is swinging

CHI: *i:: a:: i::a:: ben de yapıyom.*  
 I too do-PROG-IS  
 'I am doing i:a:, too'

MOT: *evet sen de yapıyosun.*  
 yes you too do-PROG-2S  
 'yes you are doing, too'

Table-36: DENİZ: reflexive verbs

I Verb	II Age of Emergence	III Verb	IV Age of Emergence	V Occur. at the same session.	VI Occur. at the same context	VII Shift
<i>yikan-</i> 'have bath'	1;8,27	<i>yıka-</i> 'wash'	1;11,10	1;11,10	-	-
<i>salla-n-</i> 'swing'	1;11,10	<i>salla-</i> 'swing'	1;10,3	-	-	-
<i>saklan-</i> 'hide oneself'	1;11,10	<i>sakla-</i> 'hide'	-	-	-	-

In Mine, the first attempt to produce a reflexive verb results in an ungrammatical utterance at 1;10,9. In this session she is looking at a book in which there is a picture of a boy swinging. In this example, unable to produce the reflexive verb, she replaces it with *salla-* 'swing'. The same error is repeated when she is talking about the same scene in the next session which is recorded at 1;10,21. From 2;1 onwards *sallan-* 'swing (oneself)' appears in the correct form. She is again looking at the same book.

- (273) STR: sonra:  
then  
then? (Mine-1;10,9)
- CHI: \***şa:lı-yo** [:sallanıyo] oya-da.  
swing-PROG there-LOC  
'she is swinging (someone) there'
- (274) MOT: na ap-ıyo kardeş?  
what do-PROG brother  
'what is the brother doing there?' (Mine-1;10,21)
- CHI: \***talı-yo** [:sallanıyo].  
swing-PROG  
'she is swinging (someone)'

- (275) MOT: sonra?  
then  
then? (Mine-2;1)
- CHI: bak **şalla-n-ıyo**.  
look swing-REFL-PROG  
'look, she is swinging(herself)'
- (276) CHI: **şalla-n-ıyo**, Menan(i) bu:-da otul-uyo.  
swing-REFL-PROG Melani here-LOC sit-PROG  
'she is swinging (herself), Melani is sitting here'

In addition to these, *görün-* 'show oneself' emerges at 2;5, *saklan-* 'hide oneself' appears at 2;6 and *giyin-* 'get dressed', *kurulan-* 'dry oneself', *temizlen-* 'clean oneself', *yıkan-* 'have bath' emerge at 2;10.

**Table-37: MİNE: reflexive verbs**

I	II	III	IV	V	VI	VII
Verb	Age of Emergence	Verb	Age of Emergence	Occur. at the same session	Occur at the same context	Shift
<i>salla-n-</i> 'swing'	1;10,9 [*] 1;10,21 [*] 2;1	<i>salla-</i> 'swing'	1;10,9	-	-	-
<i>gör-ün-</i> 'show oneself'	2;5	<i>gör-</i> 'see'	1;10,21	2;10		
<i>saklan-</i> 'hide oneself'	2;6	<i>sakla-</i> 'hide'	-	-	-	-
<i>giyin-</i> 'get dressed'	2;10	<i>giy-</i> 'dress'	1;8	-	-	-
<i>çekil-</i> 'withdraw oneself'	2;10	<i>çek-</i> 'withdraw'	-	-	-	-
<i>kurulan-</i> 'dry oneself'	2;10	<i>kurula-</i> 'dry'	-	-	-	-
<i>temizlen-</i> 'clean oneself'	2;10	<i>temizle-</i> 'clean'	2;8	-	-	-
<i>yıkan-</i> 'have bath'	2;10	<i>yıka-</i> 'wash'	2;4	-	-	-

In Azra, too, the first attempt to produce a reflexive verb result in a similar- if not the same, error at 1;10,4. She produces only the stem of the verb and even the attempt to imitate her mother's utterance fails<sup>38</sup>.

- (277)      MOT:    pisipisi bak na ap-ıyo?                      (Azra-1;10,4)  
                  cat look what do-PROG  
                  'look, what is the cat doing?'  
                  CHI:    \*salla.  
                  swing  
                  'swing'  
                  MOT:    salla-n-ıyo.  
                  swing-REFL-PROG  
                  'she is swinging'  
                  CHI:    \*alla:.  
                  swing  
                  'swing'

A number of new reflexive verbs emerge at later sessions with correct usage. These are *silkelen-* 'shake oneself' (2;9,25) *uzan-* 'stretch oneself' (2;9,25) and *görün-* 'show oneself' (2;11,14).

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<sup>38</sup> In the data analyzed we do not have the correct use of the form in the reflexive sense. In one instance, however, which was recorded at 1;11, she produces the reflexive verb *sallan-* 'swing' when she is talking about some objects falling from the table. Here the verb *salla-* 'swing' with this sense is not accepted to be a reflexive verb. Rather, it is analyzed as a middle structure and hence included into the category of unaccusative verbs category.

- (i) CHI:    **da:la-n-dı** [salla-n-dı].                      (Azra-1;11)  
                  shake-REFL-PAST  
                  'it shaked' [?]

Table-38: AZRA: reflexive verbs

I	II	III	IV	V	VI	VII
Verb	Age of Emergence	Verb	Age of Emergence	Occur. at the same session	Occur. at the same context	Shift
<i>salla-n-</i> 'swing'	1;10,4 [*]	<i>salla-</i> 'swing'	1;10,4	-	-	-
<i>silkele-n-</i> 'shake oneself'	2;9,25	<i>silkele-</i> 'shake off'	-	-	-	-
<i>uza-n-</i> 'stretch oneself'	2;9,25	<i>uza-</i> 'stretch'	-	-	-	-
<i>gör-ün-</i> 'show oneself'	2;11,14	<i>gör-</i> 'see'	2;9,25	2;11,14		
<i>tak-il-</i> 'attach oneself to'	2;9,25	<i>tak-</i> 'attach something'	-	-	-	-
<i>sar-il-</i> 'embrace'	2;9,25	<i>sar-</i> 'wrap'	-	-	-	-
<i>kat-il-</i> 'attend'	3,1,26	<i>kat-</i> 'add'	-	-	-	-

### 5.2.3.2. Analysis of the errors

Reflexive, like passive involves the suppression of one of the arguments of the verb. In this case, the internal argument of the verb which is coreferential with the external argument is suppressed, and as a result of this process an intransitive verb is formed. When we look at the errors in the attempts to produce reflexive verbs we see that they are very similar to the errors observed in the first passives, that is, the children are unable to suppress an argument- in this case the internal argument, of the verb.

### 5.2.3.3. Discussion

In the reflexive errors the children perform, we see a similar kind of discrepancy as well. As seen above in passive and causative verbs the children produce

the intransitive verbs as transitives in this case inserting a theme into the structure of the verb. In the reflexive errors recorded the child replaces the unergative verb *sallan-* 'swing' with the transitive agentive verb *salla-* 'swing' reflecting a similar tendency that is observed in the causatives. In other words, the child in the reflexive verbs cannot suppress the internal argument just as she cannot suppress the external argument in the passive verbs.

#### 5.2.4. Reciprocal

Reciprocal verbs which are restricted in number in Turkish are very rare in children's speech, as well. In the data analysed, the only attempt to produce a reciprocal verb fails at 1;11,10.

- (278) CHI: ellele **tut-ul-al** [ / ] **tut-ul-lım** mı ellele.  
 hand+in+hand hold-PASS(?)-OPT(?)-1PQUE hand+in+hand
- MOT: elele **tut-ut-alım** mı elele.  
 hand+in+hand hold-REFL-OPT-1P QUE hand+in+hand
- MOT: elele **tut-uş-alım**.  
 hand+in+hand hold-REFL-OPT-1P (Deniz-1;11,10)

In the example she replaces the reciprocal verb with a passive verb<sup>39</sup>.

Besides this there is no reciprocal verb recorded in the data. The verbs like *konuş-* 'talk (to eachother)', *anlaş-* 'be in agreement (with eachother)' *paylaş-* 'share (with eachother)', *birleş-* 'come together', *kariş-* 'be mixed' are not considered to be

<sup>39</sup> Such a substitution (but in the reverse direction) is reported to be observed in another child acquiring Turkish at a much later age (Ekmeççi, 1987). In this utterance, Ekmeççi states, the child replaces the passive verb with a reciprocal verb at 5;1.

- (49) CHI: \***sar-ış-alım**. (5;1- Ekmeççi 1987:207)  
 wrap-RECIP-OPT-1P  
 'let's hold each other'

In our analysis the verb *sarı-* 'hold' is not categorized as a passive verb since it involves an action performed by an agent. In this sense it is accepted to be an unergative verb. The example is given here since it is, in Ekmeççi (1987), analyzed as an example for a passive-reciprocal substitution.

reciprocal verbs in the analysis, However, there are cases where the children use these verbs in a reciprocal sense, in one case with a reciprocal pronoun.

(279) CHI: **konuş-uyo-lar birbir-leri-yle.** (Azra-1;11,14)  
 speak-PROG-3P eachother-PLU-COM  
 'they are talking to eachother'

(280) CHI: **iki-si paylaş-ıyor-lar.** (Azra-2;9)  
 two-POSS&3S share-PROG-3P  
 'they, two, share (it)'

In (279), Azra uses the verb *konuş-* 'speak' with a reciprocal meaning and expresses an activity performed collectively at 1;11,14. In (280), the verb *paylaş-* 'share' is produced as an activity performed by two people at 2;9.

### 5.3. Conclusion

Since the argument structures of the verbs are derived from their lexical semantic structures (Grimshaw, 1992), a child is expected to learn the argument array of a verb along with its meaning. As we saw in the examples in the previous discussions children have no difficulty in producing the verbs properly yielding the fact that they are aware of the argument structures of the verbs. As seen in the last section on the valency changes, they have difficulty only in those complex structures which require the interaction of various components of language.

## CHAPTER SIX

### IMPLICATIONS

The present study which is based on the speech samples of four monolingual Turkish girls recorded longitudinally between the ages 1;1-3;3 has implications both for the early language development and for linguistic theory. It presents evidence for the phases children follow in the development of the verb category. Secondly, the patterns observed in the acquisition of verbs and argument structures have implications for the development of the syntax-morphology-semantics interface. Further, the development of agency is observed to play a significant role in the acquisition of the argument structures of the verbs. In the sections below, we will discuss each of these issues.

#### **6.1. The development of the Turkish verb category**

As outlined in Chapter One, there are two major views, continuity and discontinuity views, concerning the development of syntactic categories in children's speech. According to the former, children are expected to have syntactic categories innately. In the latter view, on the other hand, children's categories develop through a gradual acquisition process and children go through a developmental stage in which they do not have the category verb. In the present study we have adopted the discontinuity view and argued that these Turkish children do go through the pre-categorial stage that is proposed for the children acquiring English by Radford (1990). We have claimed that Turkish children's early morphology is not productive and in this stage, there are utterances where children fail to produce the inflections and thus, produce ungrammatical

strings. At this stage, children's speech also lacks nominal morphology which is considered to be significant since it shows that children have not yet differentiated the syntactic categories. It implies that the verbs do not yet assign case or do not require case marked NPs as their arguments.

The category verb starts to appear by 1;6-1;7 and, as stated by Aksu-Koç & Slobin (1985) and van der Heijden (1997), the development is completed before 2;0. The developmental phases are reflected differently on individual verbs. Some verbs emerge in fully inflected but frozen forms, others are produced in base forms and refer both to the action and the state. All these reveal a lexically specific acquisition strategy which fails to cover all the verbs and further support the argument that children's speech lack a general verb category. Hence, the findings presented in the present study support the proposals of both Radford (1990) and Tomasello (1992) who claim that children do not have adult-like syntactic categories. However, the question of whether the development of the categories comes about as a consequence of a biological maturation (Radford, 1990) or a social interaction (Tomasello 1992) mechanism still remains to be answered.

## **6.2. The development of syntax-morphology-semantics interface**

According to the Principles and Parameters model, human language arises as a consequence of the interaction of rules and principles in distinct modules and it is an outcome of the interface between different components of language (Chomsky, 1981). Thus, a child acquiring her native language is expected to learn how these modular and interactive properties apply to her language. However, interactions between the various parameters enhance the complexity of the structures and this complexity results in "partial" or "non-discrete" development, thus giving rise to "apparent gradualness" in acquisition (Hyams, 1994).

The errors observed in the subjects' passive and causative constructions present evidence for the lack of interface in morphology and syntax in the children's

nascent grammars and thus appear to support the conclusion of Borer & Wexler (1987) which is based on the assumption that morphological and syntactic properties of a process can develop separately. Borer & Wexler's (1987) analysis is based on the lack of verbal passives in their data and hence they do not present conclusive evidence, thus in order to question the universality of this proposal, evidence is presented for the early emergence and productive use of such constructions in various non-European languages as well as in English (among them are Demuth, 1989, 1990; Allen & Crago, 1996; Pinker, Lebaux & Frost, 1987; Weinberg, 1987).

Like in all the non-European languages, in Turkish, too, passive morphology emerges quite early. However, as errors observed in the passive constructions indicate, early emergence does not imply early mastery of the structure and Turkish appears to support Borer & Wexler's (1987) assumption that an individual component can appear before another component. In Turkish the lack of interface seems to be apparent, when compared to English.

The errors observed further imply that the development of another component of language, namely, semantics has an influence on the development of these structures to a great extent. The uneven development of the semantics in passive and causative structures seem to have an influence on the morphology and syntax interaction in such a way that it blocks their interaction.

No matter what the reason that lies behind the errors is, it is apparent that it has an influence on one of the components and not on the other. In the ungrammatical structures, only one of the components is effected. For instance, in passive structures, the child produces the passive morphology but fails to apply the syntactic principles of the same construction as seen in section 5.2.13. In the causative, however, she produces the syntactic structure, with the proper case markings reflecting the mastery of the change in the grammatical relations, but cannot produce the causative morpheme as discussed in section 5.2.2.2. Such errors imply that the child does not have a problem with the whole structure. If she had, she would not produce the structure at all. Rather, she errs in the

production of only one components of the language implying that she cannot master the interface between the structures.

The lack of interaction between two (or more) components which surface as an uneven development of one of the components (usually morphology) are reported for other children (both normal and impaired) acquiring other languages as well. A similar kind of an "independent development of morphology" is observed in a child with congenital left hemisphere brain lesion (Levy, Amir & Shalev, 1992 in Levy, 1994). In this child's development, morphology is observed to be "clearly more advanced" than semantics and pragmatics. In the acquisition of binding conditions by normal Hebrew children as well, very similar results are reported by Hyams (1994).

What is significant in all these analyses is that children, throughout their language development, separate the two components revealing a discrepancy between them. All results reported in other studies and of the present study, raise the question of whether or not the components of language develop independently and whether this provides evidence for the discussions on the difference between word structure and phrase structure (Di Sciullo & Williams, 1987; Anderson, 1992; Sells, 1995 among others), or not. These questions remain for further investigation.

Another theoretical question raised by the present study for linguistic theory is that if the unmarked structures emerge earlier than the marked ones (Hyams, 1986), can the passive formations without absorption and movement be accepted to be unmarked and does this challenge Jaeggli's (1986) treatment of absorption as the "defining characteristic" of passive? Investigation of this question, too, remains for further analysis.

### **6.3. The role of agency**

As discussed in Chapter Five, semantics of the arguments appear to play a significant role in the mapping of the thematic roles onto the syntactic positions. The

child's errors seem to result from her wish to map the thematic role agent to the subject position. This result supports Radford's proposal that in child grammars the positions are already theta-marked and are independent of the thematic roles that the verbs bear in their argument structures. Similarly, the results are also in line with Fox and Grodzinsky's (1998) argument that the children cannot associate one theta role with more than one syntactic position.

In the Turkish data analysed in the present study, those verbs which have a non-agent subject (unaccusative verbs) are rare especially during the initial stages of the language development when compared to those verbs that have an agent subject (transitive agentives, unergatives and ditransitives). The children can master those structures with non-agent subjects only when there is no agent involved in the event structure. These are the verbs like *düş-* 'fall', *bit-* 'finish', and *açıl-* 'open'. The states described by these verbs are perceived as the properties of the themes in the subject position and are not necessarily attributed to an action performed by an agent. Hence, from the child's point of view, the toy falls on the floor by itself or the diapers open by themselves despite the mothers efforts to close them.

In other verbs, however, in which an agent is involved in the event structure, the children have difficulty, as their errors reveal. When the child is the agent of the verb *elle-* 'touch', for instance, and when she is fully aware that the statement *ellenmez* 'must not be touched' is a statement or command directed to her (not anyone else) at the moment of the utterance, she cannot produce an unaccusative verb to describe the situation. Because she wants to include an agent argument into the structure. The passive verbs like *ellen-* 'be touched' and *kapan-* 'be closed' which appear in ungrammatical utterances, as discussed in section 5.2.1.3, are examples for these.

The same tendency results in similar errors on a simplex unaccusative verb *ol-* 'be/happen/fit', too. The errors with this verb indicate that the child's errors result from a difficulty in the semantic structure of the verb. From the point of view of the child, there is an agent involved in the verb *ol-* 'be/happen/fit' as well.

Hence, the *child's* perception of the events has been significant in the interpretation of the verb argument structures. If the child perceives the event as a structure in which an agent is involved she hesitates in mapping another role (a role other than agent) to the subject position. In other words she cannot exclude the agent from the verb structure.

In causative structures, too, the errors are observed in instances where the subject of the verb is an inanimate object (the doll in *yat-* 'lie' and *giy-* 'wear' and socks in the *çık-* 'come out') which lacks the typical properties of an agent that can perform an action. Hence, the errors observed in both causative and passive verbs seem to result from the same mechanism. The surface difference between the passive and causative verbs, on the other hand, is attributed to the difference in the operations they involve. In passives, an argument is suppressed; whereas in causative an argument is added to the structure.

All these results, thus, appear to support a "semantically-based" language acquisition mechanism (Pinker 1984, 1989). The child's perception of the structures and the production of the argument structures of the verbs are very much influenced by the semantic structures of the verbs.

In short, this study has attempted to present an analysis of the early grammar of four monolingual Turkish children and concentrate on the development of the verb category and the acquisition of argument structures. The analysis provides implications not only for the early language development but also for linguistic theory as summarized above in three main headings. More detailed analyses of these issues and their implications still remain for further study.

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## APPENDIX I

## THE DATA

Following are the ages of the subjects, the MLU of the subjects at each recording, the total number of the morphemes produced and the total number of the utterances.

## AZRA

<u>Sess</u>	<u>Age</u>	<u>MLU</u> (morph)	<u>total no</u> <u>of mor.</u>	<u>total no.</u> <u>of utter.</u>
1.	1;1,19	0.00	0	0
2.	1;2,10	1.00	8	8
3.	1;3,6	1.00	43	43
4.	1;6,11	1.29	168	130
5.	1;10,4	1.70	269	158
6.	1;11	2.52	354	140
7.	2;0,10	1.97	469	170
8.	2;1,29	3.14	484	137
9.	2;9,25	2.82	994	276
10.	2;10,26	4.27	303	50
11.	2;11,14	5.13	1124	219
12.	3;1,26	3.83	703	162
13.	3;3,3	3.31	1108	294

## DENİZ

<u>Sess</u>	<u>Age</u>	<u>MLU</u> (morph)	<u>total no</u> <u>of mor.</u>	<u>total no.</u> <u>of utter.</u>
1	1;3.3	1.94	117	98
2.	1;3.12	1.34	101	75
3.	1;3.27	1.24	96	77
4.	1;5.9	1.20	105	87
5.	1;5.28	1.58	217	137
6.	1;6.9	1.73	192	111
7.	1;7.3	2.53	639	252
8.	1;7.8	1.95	317	162
9.	1;7.23	2.74	548	200
10.	1;8.11	2.93	838	286
11.	1;8.14	3.03	570	188
12.	1;8.27	3.42	938	274
13.	1;9.1	3.35	443	132
14.	1;9.2	3.35	188	56
15.	1;9.19	2.01	517	148
16.	1;10.3	3.81	1339	351
17.	1;10.19	3.52	448	127
18.	1;11.10	3.67	397	108
19.	1;11.10	2.29	1057	277
20.	1;11,21	3.20	1306	408
21.	2;0,4	4.32	1121	259

## MINE

<u>Sess</u>	<u>Age</u>	<u>MLU</u> (morph)	<u>total no</u> <u>of mor.</u>	<u>total no.</u> <u>of utter.</u>
1.	1;6,21	1.49	73	49
2.	1;7	1.69	56	33
3.	1;8	2.40	60	25
4.	1;9	3.05	159	52
5.	1;10,9	2.21	264	119
6.	1;10,21	2.45	455	185
7.	1;11,23	3.51	815	232
8.	2;1	3.30	462	140
9.	2;1	3.20	414	129
10.	2;3	2.94	681	231
11.	2;4	2.86	149	52
12.	2;5	2.60	245	94
13.	2;5	3.36	84	25
14.	2;6	4.76	990	208
15.	2;7	5.75	259	45
16.	2;8	4.39	554	126
17.	2;10	3.45	724	499

## TUNA

<u>Sess</u>	<u>Age</u>	<u>MLU</u> (morph)	<u>total no</u> <u>of mor.</u>	<u>total no.</u> <u>of utter.</u>
1.	1;3	1.13	190	167
2.	1;4	1.29	74	57
3.	1;5	1.33	265	187
4.	1;6	1.14	147	128
5.	1;7	1.10	77	70

## APPENDIX II

## THE ARGUMENT STRUCTURES

## AZRA

sess	age	tr.agent	unergat.	ditrans	p.state	p.caus	p.agent	unaccus
1.	1;1,19	-	-	-	-	-	-	-
2.	1;2,10	giy-	-	-	-	-	-	-
3.	1;3,6	aç-	-	-	-	-	-	-
4.	1;6,11	aç- at-	bak- uyu- kalk- gel-	-	-	-	-	açıl- açıl-[*]
5.	1;10,4	bak- aç- at- salla- kapat- sil- at-	otur- kalk-	koy- tak-	bul-	-	-	düş-
6.	1;11	aç- at- iç- bırak- giy- y.et- dinle- çal- çıkır- kut+yap- ısır-	gel- git- sus- bak-	ver- tak- koy-	kork- iste-	-	-	işit- çal- bat- sallan-
7.	2;0,10	vur- aç- çek- at- ye- yap- seyret- bak- çevir-	bağır- kavg+et- otur- dans+et-	ver-	iste-	-	-	düş-

8.	2;1,29	ısıt- pişir- al- yap- kaynat- aç- iç-	otur- gel- konuş- koş- anlaş- bak-	ver- at- koy- ruj+sitr-	iste- sev-	-	-	düş- kay- yen- siğ- gir- çık- ol-
9.	2;9,25	yap- ye- al- kaldır- oku- de- tak- paylaş- sil- kapa(t)- çevir- çek- indir- silkele- saç- dinle-	komiklik+ yap- cimnastik +yap- bin- bak- git- gel- konuş- uyu- kalk- yat- takal- silkelen- ışlık+çal sarıl- gül- kal- uzan- zıpla- dur- takla+at- dans+et- kaç- (isim)koy-	ver-	bil- iste- gör- sev-	-	-	çal- ol- sarhoş+ol- oyna- yan- düş-yarıl- dökül- yıkıl- çık- boyan- sıkıl-
10.	2;10,26	al- seyret- yap- de- ye- aç- anlat- çek-	bak- otur- çalış- geç- konuş-	bırak-	bil- gör-	-	-	ol- bit-

11.	2;11,14	oku- iste- anlat- söyle- al- it- bas- vur- yap- öp- ısır- de- giy- topla- kapa- aç- kokla- davet+et sil- kıs- oyna- sor- çalış- k.yap-	sarı- konuş- uç- gel- in- hapşır- takıl- ağla- öz+dile- git- dolaş- otur- görün- d.+et- dur- kalk- uyu-	ver- koy-	z.+kal- bil- sev- şaşır- kork- bul- gör-	-	z.+ver-	işe+yara bit- ol- çık- düş- kay- kok- ak- yamul-
12.	3;1,26	de- söyle- ye- sık- ıslat- yap- al- dik- m.+et- dinle- çıkır- getir- sık-	bak- konuş- tel.+et- gel- git- geri+dön in-	koy-	bil- gör- sev- bul- anla-	-	oyala-	akullan- yan- çalış- ol- dur-
13.	3;3,3	yap- bas- öldür- çalış- tut- izle- çiz- de- çek- sor- çağır- kullan- getir- aç- al- yaz- as- kat- topla- tak-	bak- yürü- ağla- oyna- konuş- gel- uyu- git- kattı- dur-	ver- koy-	gör- bil- hatırla- iste- inan-	-	-	üzül- ol- küçül- düş-

## DENİZ

sess	age	tr.agent	unergat.	ditrans	p.state	p.caus	p.agent	unaccus
1.	1;3.3	kapat-	bak-	-	-	-	-	düş-
2.	1;3.12	-	gel-	-	-	-	-	-
3.	1;3.27	-	-	-	-	-	-	bit-
4.	1;5.9	aç bul-	-	-	-	-	-	-
5.	1;5.28	oku- giy- bul-	bak- kalk- gel- git-	tak-	-	-	-	ot- bit-
6.	1;6.9	çıkır- aç- yap- at- çiz- bak- bekle- kapat- öp-	git- gel- otur-	ver- at-	-	-	-	bit-
7.	1;7.3	yap- boya- bak- ye- kapat- al- bitir- aç- kes- iç- ört-	otur- git- gel- uyu- kalk-	benzet- vur- getir- koy- ver- at-	gör-	-	-	düş- ot- boya-
8.	1;7.8	de- kuc.al- oku- giy- ye-	ütü+ yap- yat- gel- bak-	ver- tak- at-	-	-	-	y.yağ- ellen- yan- düş- git-
9.	1;7.23	oku- bak- yap- al- ört- de- ot- bin- giy- iç- ye- aç- in- bul-	git- gel- uyu- sus- dur- bin-	ver- koy- tak-	iste-	-	-	y.yağ- bit- kal- düş- benze- dur-

10.	1;8.11	ye- yap- oku- bak- k. çal- al- kapat- aç- oyna- bezle- de- öp- boya-	bak- uyu- yat- gel- git- otur- kalk-	kuc+al- getir-	-	-	-	y.yağ- çal- gel- bit- çık- [*]
11.	1;8.14	al- bak- yap- ye- kapat- giy- elle- bul-	dur- otur- uç- git- gel- gir- ağla- uyu-	siir-	gör-	-	-	açıl- bit- acı- düş-
12.	1;8.27	bak- söyle- elle- yap- oku- iç- giy- al- dinle- boya- yaptıştır- düşür- vur- aç- ye- kes- kapat- bitir-	konuş- turman- dur- gel- ağla- yikan- git- uyu- otur- oyna- yat- uyan-	ver- koy-	sev-inan- bul- iste-	-	-	bit- yırtıl- sıkış- kuru- git- acı- delin- düş- ol-
13.	1;9.1	boya- elle- yap- al- bak- vur- ye- de- iç- oku-	oyna- git- yat-	koy- ver- tak-	-	-	-	geç- bit- ellen- y.başla- çık- çık- [*]
14.	1;9.2	yap- al- oku- bin- bak-	uyu- oyna- anlaş-	yedir- dök- koy-	-	-	-	-

15.	1;9.19	yap- çıkār- al- de- aç- düzelt- m+et- azarla- ye-	oyna- yat- güt- ağla- bak-	tak- at- yatur- koy- ver-	iste-	-	-	kal- bit- ol- düzelt- çık- gir-
16.	1;10.3	boz- elle- kapat- yay- kopar- et- aç- tart- m+et- bas- yap- oyna- boya- topla- oku- değiştir- de- ye- salla- bekle- temizle- anlat- bul-	bak- gel- dur- kaç- kal- gir- güt- konuş- yat-	koy- al- dök- ver- getir- tak-	iste- sev-	-	-	gerek- ol- güt- açıl- kaşın- yen-
17.	1;10.19	kaşı- yap- bak- oku- kapat- de- getir- aç- yapıştır- elle- anlat- ye- bul-	dur-	ver- al- kaldır- giydir-	sev- gör-	-	-	bit- kaşın- geç-
18.	1;11.10	oku- ye- çıkār- yap- giy- al- elle- kurtar- yıkā- kurula-	bak- sallan- uyu- tutuş- oyna- tel+et- saklan- ban+yap gel- yikan-	ver- koy- yatur-	iste-	-	-	y.yağ- bit- düz- ol-

19.	1;11.10	yap-elle-iç-oyna-geür-oku-çalış-çakar-anlat-de-al-yaz-yıka-karıştır-hazırla-kar-bük-say-kapat-	bak-gel-uyan-rah+dur-dur-git-yat-	at-koy-ver-doldur-dök-	iste-kız-	-	rah+et-	çal-den-düş-ol-soğudökül-karıl-kal-bit-dur-oynan-
20.	1;11,21	seyret-kapat-yap-oyna-tut-al-öp-boz-aç-yaz-de-koştur-dedürt-ol-	bak-git-gel-kalk-koş-duy-yat-gül-kaç-	ver-koy-	unut-bul-sev-iste-beğen-	-	-	y.yağ-kal-düş-bozul-yıkıl-kapan-çikarıl-(yer)kal-benze-(uyk)gel
21.	2;0,4	al-yap-de-kapat-aç-kaldır-iç-ye-yaz-boz-yakala-söyle-çikar-vur-sarıl-dinle-kov-arı-	bak-saklan-gel-s+et-gül-otur-dur-oyna-git-konuş-ayakta+dur-çık-	ver-at-koy-yapıştır-göster-	bul-iste-duy-kız-	-	rahatsız+et-şansım+zorla-	görün-ol-bit-(uğ)ol-açıl-başla-

## MINE

sess	age	tr.agent	unergat.	ditrans	p.state	p.caus	p.agent	unaccus
1.	1;6,21	kaydet-			iste-			düş-
2.	1;7	iç- oku- iç- al-	git-		iste-			bit- acı-
3.	1;8	al- getir- tut- cal-	bak gel-		iste-			düş- bit-
4.	1;9	say- çakar- aç- giy- yap- boz- say- yap- al-	bak- git-	ver-	iste-			dür- acı-
5.	1;10,9	sev- salla- aç- giydür- ye- iç- oku- boya- yap- çek- çakar- boya-	yat- bin- otur- bak- git- atla- oyna-	ver-				
6.	1;10,21	çevir- ye- iç- salla- oku- dök- öp- al- çakar- giy-	bak- yat- otur- oyna- gel- uyu-	koy-				ol- bit- başla- acı- düş-

7.	1;11,23	boz- aç- al- tak- oku- söyle- doldur- elle- ye- şişir- at- giy- çık- ar- yap- boya- brak- çevir- vur- yap- boya- brak-	konuş- otur- git- dur- yaşa- koş- bak- ağla- oyna- kalk- bas- gel- uyu- yat-	vur- koy- kaldır-	kız-			bozul- açıl- sıkış- kırıl- ol- okun- ellen- çık- düş-
8.	2;1	aç- yap- de- başla- tak- gir- oku- dök- muncıkla bas-	bak- git- gel- koş- otur- yat- uyu- gez- gül-	-	tan- sev-	-	-	dur- çık-
9.	2;1	yatır- oku- al- aç- ye- bin- doldur- giy-	bak- koş- yat- git- otur- sallan- dolaş- k.et-	-	sev- bil-	-	-	çık- ol- yağ- başla-
10.	2;3	seç- al- oku- çık- ar- giy- oyna- m.yap- aç- kapat- söyle- anlat- iste- gönür- salla- (çay)yap düşür- y.ye-	bak- yürü- uyu- büyü- atla- git- aşı+ol- öksür- dolaş- yat- gel-	koy-	bul- tan- bil- unut-			yıkıl- yorul- sıkıl- kal- ol-

11.	2;4	oku- yaz- çık- arıdır- giy- öp- bak- yık-	sallan- oyna- ağla-	-	-	-	-	yağ- ıslan-
12.	2;5	söyle- bas- yap- aç-	otur- oyna-bak-	ver-	bil- bul- iste-	-	-	uç- ol-
13.	2;5	söyle- bin- ez-	-	-	iste- san- bil- özür+dile	-	-	söylen- görün-
14.	2;6	yap- ye- doldur- bak- çiz- topla- at- söyle- dök- giy- gidir- kaldır- de- anlat- aç- dinle- yut- çık- getir- göster- çek- al-	bak- gel- git- bağır- ağla- koş- saklan- gir-	ver-	bil- bul- rastla- iste-	-	-	çık- ağır- ol- işe-yara- susa-
15.	2;7	çarp- de- yap- m. et- çıkart-	gel- git- otur-	koy-	-	-	-	ol-
16.	2;8	al- iste- durdur- çık- ye- temizle- de- kayıt+yap söyle-	konuş- uyu- yat- gir- oyna- yüz-	vur-	bil- hatırla-	-	-	giril- oynan- gelin- gidil- çık- bat- sıkıl- çekil- ol-

17.	2;10	söyle- anlat- getir- çal- al- oku- bak- yap- ayarla- elle- de- çal- dök- aç- ye- yedir- bin- k.et- kapat- öp- yadır- in- batır- götür- sar- sür- süpür- konuş- iç- dağıt- çevir- (yardım)+ et- kurula-	git- uyu- giyin- bağır- çekil- oyna- kurulan- temizlen- yikan- şampuanlan- sallan- dolaş- uç- yat- büyü- kalk- otur- gir- bas- yemek+ye	geçir- ver- yerleştir- burak- koy-	unut- kız- bul- bil- hatırla- beğen- gör- sev-	-	-	sığ- kırıl- kop- ol- b.yapıl- acı- kal- görün- oynan- birleş- y.yağ- ıslan- sıra.gel- üşü- büyü- yerleş-
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## TUNA

sess	age	tr.agent	unergat.	ditrans	p.state	p.caus	p.agent	unaccus
1.	1;3	at-	kalk-	-	duy-	-	-	ol- düş-
2.	1;4	al- burak-	git- gel- bak-	-	-	-	-	-
3.	1;5	yap- aç-	-	-	-	-	-	bit-
4.	1;6	kapa(t)-	dur-	-	-	-	-	-
5.	1;7	-	-	-	-	-	-	-

## APPENDIX III

## GLOSSARY

## Transitive Agentive

1.	<i>aç-</i>	'open'
2.	<i>al-</i>	'take'
3.	<i>anlat-</i>	'tell'
4.	<i>ara-</i>	'call/look for'
5.	<i>as-</i>	'hung'
6.	<i>at-</i>	'throw'
7.	<i>ayarla-</i>	'set'
8.	<i>azarla-</i>	'insult'
9.	<i>bas-</i>	'press (a button)'
10.	<i>batır-</i>	'sink'
11.	<i>bekle-</i>	'wait for'
12.	<i>bezle-</i>	'diaper'
13.	<i>bırak-</i>	'leave'
14.	<i>bin-</i>	'get on'
15.	<i>bitir-</i>	'finish'
16.	<i>boya-</i>	'paint/colour'
17.	<i>boz-</i>	'destroy'
18.	<i>bul-</i>	'find'
19.	<i>bük-</i>	'twist'
20.	<i>çağır-</i>	'call'
21.	<i>çal-</i>	'play'
22.	<i>çalış-</i>	'work'
23.	<i>çarp-</i>	'hit/strike'
24.	<i>çek-</i>	'pull'
25.	<i>çevir-</i>	'turn (a page)'
26.	<i>çıkart(t)-</i>	'take out'
27.	<i>çiz-</i>	'draw'
28.	<i>dağıt-</i>	'spread/distribute'
29.	<i>davet+et</i>	'invite'
30.	<i>de-</i>	'say'
31.	<i>değiştir-</i>	'change'
32.	<i>dik-</i>	'saw'
33.	<i>dinle-</i>	'listen to'
34.	<i>doldur-</i>	'fill'
35.	<i>dök-</i>	'pour'
36.	<i>durdur-</i>	'stop'
37.	<i>düzeltil-</i>	'fix'
38.	<i>elle-</i>	'touch'
39.	<i>et-</i>	'make/do'
40.	<i>ez-</i>	'crush'
41.	<i>getir-</i>	'bring'
42.	<i>giy-</i>	'wear'
43.	<i>giydir-</i>	'dress'

44.	<i>göster-</i>	'show'
45.	<i>götür-</i>	'take'
46.	<i>hazırla-</i>	'prepare'
47.	<i>ısır-</i>	'bite'
48.	<i>ıslat-</i>	'wet'
49.	<i>iç-</i>	'drink'
50.	<i>indir-</i>	'take down'
51.	<i>iste-</i>	'want'
52.	<i>it-</i>	'push'
53.	<i>izle-</i>	'follow'
54.	<i>kaldır-</i>	'hold'
55.	<i>kapa(t)-</i>	'close'
56.	<i>kariştir-</i>	'mix'
57.	<i>kaşı-</i>	'scratch'
58.	<i>kat-</i>	'add'
59.	<i>kaydet-</i>	'record'
60.	<i>kayıt+yap</i>	'record'
61.	<i>kaynat-</i>	'boil'
62.	<i>kes-</i>	'cut'
63.	<i>kır-</i>	'break'
64.	<i>kıs-</i>	'turn the volume down'
65.	<i>kıt+yap-</i>	'have (hair) cut'
66.	<i>kokla-</i>	'sniff'
67.	<i>konuş-</i>	'speak'
68.	<i>kopar-</i>	'pick'
69.	<i>kov-</i>	'chase'
70.	<i>kucağına+al-</i>	'hold'
71.	<i>kullan-</i>	'use'
72.	<i>kurtar-</i>	'save'
73.	<i>kurula-</i>	'dry'
74.	<i>muncıkla-</i>	'knead'
75.	<i>muayene+et-</i>	'examine'
76.	<i>muayene+yap-</i>	'examine'
77.	<i>oku-</i>	'read'
78.	<i>oyna-</i>	'play'
79.	<i>öldür-</i>	'kill'
80.	<i>öp-</i>	'kiss'
81.	<i>ört-</i>	'cover'
82.	<i>paylaş-</i>	'share'
83.	<i>pişir-</i>	'cook'
84.	<i>saç-</i>	'spread'
85.	<i>salla-</i>	'shake/swing'
86.	<i>sar-</i>	'cover'
87.	<i>say-</i>	'count'
88.	<i>seç-</i>	'choose'
89.	<i>sev-</i>	'carress'
90.	<i>seyret-</i>	'watch'
91.	<i>sık-</i>	'tighten'
92.	<i>sil-</i>	'blow (one's nose)'
93.	<i>silkele-</i>	'shake off'
94.	<i>sor-</i>	'ask'
95.	<i>söyle-</i>	'tell'
96.	<i>süpür-</i>	'sweep'
97.	<i>sür-</i>	'spread'

98.	<i>şişir-</i>	'blow'
99.	<i>tak-</i>	'wear'
100.	<i>tart-</i>	'weight'
101.	<i>temizle-</i>	'clean'
102.	<i>topla-</i>	'gather'
103.	<i>tut-</i>	'hold'
104.	<i>vur-</i>	'hit'
105.	<i>yakala-</i>	'catch'
106.	<i>yap-</i>	'do'
107.	<i>yapıştır-</i>	'stick'
108.	<i>yardım+et-</i>	'help'
109.	<i>yatır-</i>	'lay'
110.	<i>yay-</i>	'spread'
111.	<i>yaz-</i>	'write'
112.	<i>ye-</i>	'eat'
113.	<i>yedir-</i>	'feed'
114.	<i>yıka-</i>	'wash'
115.	<i>yut-</i>	'swallow'

### Unergative

1.	<i>ağla-</i>	'cry'
2.	<i>anlaş-</i>	'get along with/agree with'
3.	<i>aşı+ol-</i>	'be vaccinated'
4.	<i>atla-</i>	'jump'
5.	<i>ayakta+dur</i>	'stand'
6.	<i>bağır-</i>	'shout'
7.	<i>bak-</i>	'look'
8.	<i>ban+yap</i>	'have bath'
9.	<i>bas-</i>	'step on'
10.	<i>bin-</i>	'get on'
11.	<i>büyü-</i>	'grow up'
12.	<i>çalış-</i>	'work'
13.	<i>çekil-</i>	'withdraw'
14.	<i>çık-</i>	'come out/up'
15.	<i>dans+et-</i>	'dance'
16.	<i>dolaş-</i>	'wander'
17.	<i>dur-</i>	'stop/stay'
18.	<i>e+tutuş-</i>	'hold hands'
19.	<i>geç-</i>	'cross'
20.	<i>gel-</i>	'come'
21.	<i>geri+dön</i>	'return'
22.	<i>gez-</i>	'walk around'
23.	<i>gir-</i>	'go into'
24.	<i>git-</i>	'go'
25.	<i>giyin-</i>	'get dressed'
26.	<i>görün-</i>	'show oneself'
27.	<i>gül-</i>	'laugh'
28.	<i>hapşur-</i>	'sneeze'
29.	<i>ışık+çal</i>	'whistle'
30.	<i>in-</i>	'go down'
31.	<i>kaç-</i>	'run away'
32.	<i>kal-</i>	'stay'
33.	<i>kalk-</i>	'get up'

34.	<i>katıl-</i>	'join/attend'
35.	<i>kavga+et-</i>	'fight'
36.	<i>konus-</i>	'speak'
37.	<i>koş-</i>	'run'
38.	<i>kurulan-</i>	'get dried'
39.	<i>otur-</i>	'sit down'
40.	<i>oyna-</i>	'play'
41.	<i>öksür-</i>	'cough'
42.	<i>öz+dile-</i>	'apologize'
43.	<i>rah+dur-</i>	'relax'
44.	<i>ruj+sür-</i>	'put lipstick on'
45.	<i>saklan-</i>	'hide oneself'
46.	<i>sallan-</i>	'swing'
47.	<i>sarıl-</i>	'hold'
48.	<i>silkelen-</i>	'shake oneself'
49.	<i>sohbet+et-</i>	'have chat'
50.	<i>sus-</i>	'shut up'
51.	<i>şampuanlan-</i>	'shampoo'
52.	<i>takıl-</i>	'hang oneself on'
53.	<i>takla+at-</i>	'turn a somersault'
54.	<i>tel+et-</i>	'telephone'
55.	<i>temizlen-</i>	'clean oneself'
56.	<i>tırman-</i>	'climb'
57.	<i>uç-</i>	'fly'
58.	<i>uyan-</i>	'wake up'
59.	<i>uyu-</i>	'sleep'
60.	<i>uzan-</i>	'stretch'
61.	<i>ütü+yap-</i>	'iron'
62.	<i>yaşa-</i>	'live'
63.	<i>yat-</i>	'lie'
64.	<i>yemek+ye-</i>	'eat'
65.	<i>yıkan-</i>	'have bath'
66.	<i>yürü-</i>	'walk'
67.	<i>yüz-</i>	'swim'
68.	<i>zıpla-</i>	'jump'

### Ditransitive

1.	<i>al-</i>	'take'
2.	<i>at-</i>	'throw'
3.	<i>benzet-</i>	'make resemble'
4.	<i>bırak-</i>	'leave'
5.	<i>doldur-</i>	'fill'
6.	<i>dök-</i>	'pour/spill'
7.	<i>geçir-</i>	'put over'
8.	<i>getür-</i>	'bring'
9.	<i>giydir-</i>	'dress'
10.	<i>göster-</i>	'show'
11.	<i>kaldır-</i>	'hold'
12.	<i>koy-</i>	'put'
13.	<i>sür-</i>	'spread'
14.	<i>tak-</i>	'attach'
15.	<i>ver-</i>	'give'
16.	<i>vur-</i>	'hit'

17.	<i>yapıştır-</i>	'stick'
18.	<i>yatır-</i>	'lay'
19.	<i>yedir-</i>	'make feed'
20.	<i>yerleştir-</i>	'place'

### Psychological State

1.	<i>beğen-</i>	'like/enjoy'
2.	<i>bil-</i>	'know'
3.	<i>bul-</i>	'find'
4.	<i>duy-</i>	'hear'
5.	<i>gör-</i>	'see'
6.	<i>hatırla-</i>	'remember'
7.	<i>inan-</i>	'believe'
8.	<i>iste-</i>	'want'
9.	<i>kız-</i>	'get angry with'
10.	<i>kork-</i>	'fear'
11.	<i>özür+dile</i>	'apologize'
12.	<i>rastla-</i>	'run into'
13.	<i>san-</i>	'think'
14.	<i>sev-</i>	'like'
15.	<i>şaşır-</i>	'surprise'
16.	<i>tanı-</i>	'know'
17.	<i>unut-</i>	'forget'

### Psychological Agentive

1.	<i>rahatsız+et-</i>	'disturb'
2.	<i>şansını+zorla-</i>	'take one's chance'
3.	<i>zarar+ver-</i>	'harm'
4.	<i>oyala-</i>	'stall'

### Unaccusative

1.	<i>(sabah) ol-</i>	'be morning'
2.	<i>(uyku) gel</i>	'feel sleepy'
3.	<i>(yer) kal-</i>	'remain'
4.	<i>acı-</i>	'hurt'
5.	<i>açıl-</i>	'open/be opened'
6.	<i>ak-</i>	'flow'
7.	<i>akıllan-</i>	'to become more clever'
8.	<i>başla-</i>	'start (rain, movie etc.)'
9.	<i>başla-</i>	'start'
10.	<i>bat-</i>	'prick'
11.	<i>benze-</i>	'resemble'
12.	<i>bit-</i>	'finish'
13.	<i>boya-</i>	'paint'
14.	<i>boyan-</i>	'be painted'
15.	<i>bozul-</i>	'be destroyed'
16.	<i>büyü-</i>	'grow'
17.	<i>çal-</i>	'play'
18.	<i>çalış-</i>	'work'

19.	<i>çık-</i>	'come out'
20.	<i>çıkartıl-</i>	'be taken off'
21.	<i>delin-</i>	'be pierced'
22.	<i>den-</i>	'be said'
23.	<i>dökül-</i>	'be spilled'
24.	<i>dur-</i>	'stay'
25.	<i>düş-</i>	'fall'
26.	<i>düzel-</i>	'be fixed'
27.	<i>ellen-</i>	'be touched'
28.	<i>geç-</i>	'go over'
29.	<i>gel-</i>	'come/feel'
30.	<i>gerek-</i>	'be neccessary'
31.	<i>gir-</i>	'go into'
32.	<i>git-</i>	'go'
33.	<i>görün-</i>	'seem'
34.	<i>ıslan-</i>	'get wet'
35.	<i>işe+yara-</i>	'do good'
36.	<i>kal-</i>	'remain/stay'
37.	<i>kalk-</i>	'get up'
38.	<i>kapan-</i>	'get closed'
39.	<i>kaşın-</i>	'itch'
40.	<i>kay-</i>	'slide'
41.	<i>kırıl-</i>	'be broken/break'
42.	<i>kok-</i>	'smell'
43.	<i>kuru-</i>	'dry'
44.	<i>küçül-</i>	'get small'
45.	<i>ol-</i>	'be/happen/fit'
46.	<i>oyna-</i>	'move'
47.	<i>oynan-</i>	'be played'
48.	<i>sallan-</i>	'move, shake'
49.	<i>sığ-</i>	'fit'
50.	<i>sıkıl-</i>	'get bored'
51.	<i>sıkış-</i>	'be stuck in'
52.	<i>soğu-</i>	'get/be cold'
53.	<i>susa-</i>	'get thirsty'
54.	<i>üşü-</i>	'get/be cold'
55.	<i>üzül-</i>	'be sad'
56.	<i>y.yağ-</i>	'rain'
57.	<i>yamul-</i>	'become crooked'
58.	<i>yan-</i>	'burn'
59.	<i>yarıl-</i>	'be split'
60.	<i>yaz-</i>	'write'
61.	<i>yen-</i>	'be eaten'
62.	<i>yerleş-</i>	'be placed'
63.	<i>yıkıl-</i>	'collapse'