THE DEVELOPMENT OF VERB-TENSE USAGE AND THE STRUCTURE OF VERBS USED AMONG TURKISH PRESCHOOLERS

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF SOCIAL SCIENCES
OF
MIDDLE EAST TECHNICAL UNIVERSITY

BY

BİNHAN KOYUNCUOĞLU

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF
MASTER OF SCIENCE
IN
THE DEPARTMENT OF PSYCHOLOGY

SEPTEMBER 2002

Approval of The Graduate School of Social Sciences

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ABSTRACT

THE DEVELOPMENT OF VERB-TENSE USAGE
AND
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M. Sc. In Developmental Psychology

Supervisor: Associate Prof. Ayşe Gül Güven

September 2002, 159 pages

The primary purpose of this study was to investigate the verb-tense acquisition process of 2 to 6 year-old Turkish preschoolers descriptively. The analyzed verb tenses were mainly the indicatives (definite past, indefinite past, present progressive, aorist, future), desideratives (conditional, necessity, optative, imperative) and compound tenses (imperfect, narrative, conditional). The secondary purpose of this research was to uncover the basic morphological structure (simple, derived or complex) of the verbs used. A total of 96 normally developing children, strictly controlled for gender and maternal education level, participated to the present study.

All children were administered three tasks (story generation, story telling, and structured play) to facilitate speech production. A series of Repeated Measures ANOVAs, supported by Paired Samples T-tests, Tukey and Scheffé as post-hoc comparison tests were utilized. Results showed significant context main effects for all verb-tense and verb structure classes except the necessity desiderative, narrative compound, morphologically complex verb usages, overall usage of indicatives and overall usage of compound tenses. The significant age main effects were uncovered for definite and indefinite past tense, the aorist, imperative, narrative compound and the overall usage of desiderative tenses. The only significant interaction effect of context and age was found in the usage of indefinite past tense. The percent of morphologically different verb-tense usage over the total usage of verb-tenses and the age specific verb-tense and verb structure preferences were uncovered and discussed. A general tendency to progress from simple to more complex verb-tense form acquisition was realized.

Keywords : Turkish Children, Language Acquisition, Language Development, Verb Structure, Verb-tense Acquisition, METU Language Development Team

ÖZ

OKUL ÖNCESİ TÜRK ÇOCUKLARINDA EYLEM KİPLERİ KULLANIM GELİŞİMİ VE KULLANILAN EYLEMLERİN YAPISI

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Tez Yöneticisi : Doç. Dr. Ayşe Gül Güven

Eylül 2002, 159 sayfa

Bu araştırmanın birinci amacı 2-6 yaş arası Türk çocuklarının, eylem kiplerini edinme sürecini betimsel olarak incelemektir. İncelenen eylem kipleri, haber/bildirme kipleri (belirli/di'li/yakın geçmiş zaman, belirsiz/miş'li/uzak geçmiş zaman, şimdiki zaman, geniş zaman, gelecek zaman), dilek kipleri (dilek-şart, gereklilik, istek, emir) ve bileşik zamanlı (hikaye/öyküleme, rivayet/söylenti, şart/koşul) eylemlerdir. Bu çalışmanın ikinci amacı da, uygulama genelinde kullanılan eylem kiplerini temel morfolojik yapılarına göre genel olarak (basit, türemiş ve bileşik) incelemektir. Cinsiyet ve anne eğitim seviyesi kontrol edilerek, toplam 96 normal gelişen okul öncesi Türk çocuğu bu araştırmaya katılmıştır. Konuşma örneklemini elde etmek için katılımcılarla üç ayrı araştırma ortamında (resimli kartlardan hikaye oluşturma, hikaye anlatma, yapısallaştırılmış oyun) çalışılmıştır. Veri analizleri genel olarak Varyans Analizi kullanılıp, Eşleştirilmiş T – Testi, Tukey ve Scheffé işlem sonrası testlerle desteklenerek yapılmıştır.

Bulgular, gereklilik ve söylenti kiplerinin, bileşik eylemlerin, bildirme kiplerinin ve bileşik zamanlı fiillerin kendi içlerinde toplam kullanımları haricinde, diğer bütün eylem kiplerinin kullanımında anlamlı bir ortam temel etkisinin olduğunu göstermiştir. Ayrıca yaş gruplarının belirli geçmiş zaman, belirsiz geçmiş zaman, geniş zaman, emir ve söylenti bileşik zamanı ve dilek kiplerinin toplam kullanımında, sıklık açısından birbirinden anlamlı derecede farklı olduğu da belirlenmiştir. Eylem kipi kullanımında ortam ve yaşın ortak etkisi, sadece belirsiz geçmiş zaman kullanımında görülmüştür. Araştırma sonunda ayrıca, eylem kipi kullanımlarındaki sapmaların tüm eylem kipi kullanımına oranı da belirtilmiş ve yaşa bağlı kip kullanımı ve eylem yapısı kullanım tercihleri belirtilmiştir. Uygulama genelinde, basitten karmaşığa doğru bir genel kazanım süreci olduğu da fark edilmiştir.

Anahtar Kelimeler : Türk Çocukları, Dil Kazanımı, Dil Gelişimi, Eylem Kipleri Kazanımı, Eylem Yapıları, ODTÜ Dil Gelişimi Ekibi

To my dear parents,

Turan and Ülker Koyuncuoğlu,

and

To all the children of the world

ACKNOWLEDGEMENTS

Firstly, I wish to express my sincere appreciation to my supervisor Associate Prof. Ayşe Gül Güven for her guidance, valuable contributions and patience throughout the research. She enlightened my way throughout my life journey, by being a perfect model.

I wish to express my sincere gratitude to Assistant Prof. Sibel Kazak Berument for her valuable suggestions and comments throughout the research.

I wish to express my gratefulness to the Examining Committee Members Dr. Öğ. Kd. Bnb. Süer Eker and Associate Prof. Belgin Ayvaşık, for their regards and valuable recommendations.

The motivational and academic assistance of METU Language Development Team friends Demet Buyurgan, Şükran Kılıç, İpek Kaleli, Özlem Kocabaş and Arzu Baykara are highly appreciated and will never be forgotten.

I wish to express my thanks to the children who participated my research and to their parents and to the personnel of their preschools for their understanding and support.

Finally, I would like to express my special thanks to Taylan Küçük for his endless support, motivation, patience and belief in me.

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INTRODUCTION

Language is the words, their pronunciation and methods of combining them, used and understood by a considerable community, to communicate ideas and feelings (Menyuk, 1971). Language is a system of grammatical rules that structure the organization of expression (Finegan, 1994). It is the most important and powerful tool of human endeavor and it is equally available to all human beings.

Like every other aspect of human development, language development is characterized by variation. Philosophers, rhetoricians, grammarians, psychologists and linguists have been analyzing and describing the structures of human languages and accumulating facts about language acquisition for almost fifty years.

Young children acquire the major components of their native language in a short time, but the development process continues throughout the life period. The course of this development appears to have some universal characteristics. By the time the children get to kindergarten, they control all of the major grammatical and semantic features of their language, and have a vocabulary pool of perhaps 8000 expressive words and many more understood words (Gleason, 1985).

The acquisition of native language follows strict regularities and is characterized by the same features in different children. Children's progress toward learning the particular grammatical structure of their own language follows a predictable order that is common to all children learning that language (Aksu-Koç, 1988; Bloom, 1994; Bohannon & Bonvillian, 1997; Gleason, 1985; Slobin,1985).

The theoretical debate over language development began from the time of Ancient Greece. Today, theoretical approaches to language development generally follow three traditions: Biological approach, cognitive approaches and the environmental approach. (Vasta, Haith & Miller,1995).

1.1 General Theories of Language Development

The language of children, even very young ones, is remarkably rich. The children reveal the mastery of the linguistic components, the aspects of grammar, and gain high degree of communicative competence in the proper use of their native language (Bloom, 1994; Finegan, 1994).

Nicolosi, Harryman & Kresheck (1989) summarized these linguistic components as follows:

Phonology determines the meaningful combination of sounds, concerned with the relationship between linguistic elements and their production. As morpheme is the smallest meaningful unit of language, *morphology* is concerned with the formation of words. *Syntax* concerned with the grammatically well formed

structures, and associates a grammatical structure with each sentence to indicate how the information in that sentence is organized. *Semantics* concerned with the word meanings and meaningful sentences.*Pragmatics* is the functional use of language in context.

As cited in Gleason (1985), Hymes (1971) mentioned that a very young child can be communicatively competent with a minimal development of these linguistic skills. And language acquisition seems so natural, effortless and rapid that, this unique and complex structure of acquisition triggered researchers to investigate the origins of language acquisition. Concluding theories were introduced and prominant views are being studied by subsequent researchers.

The theories of language acquisition generally try to provide answers to the question of *"What kinds of knowledge underlie the use of language and how is this knowledge acquired?"*. Linguists equate knowing a language with knowing a grammar (Seidenberg, 1997).

Grammar is the rules that outline the way sequences of words can be combined to form acceptable sentences. It is a description of the intrinsic structure of a linguistic system (Nicolosi et al., 1989). According to different linguistic approaches, these rules are acquired by children in different manners. A three way distinction can be mentioned on the basis of all linguistic acquisition theories: Nature, experience or both of them, underlies language acquisition. The most widely known and debated views are empricist, nativist, and interactionist

(cognitive developmental, social interactionist and the newly debated connectionist) approaches.

In 1960s, Locke and Skinner's behaviorist approach, emphasizing environmental factors in language acquisition, conditioning and learning, was the leading theory of language development. The **empiricist approach**, supports that infants were born with everything to learn (Bancroft, 1995). They consider language is learned entirely through experience. This approach denies nativist accounts of innate knowledge as they are viewed as inherently irrational and thus unscientific. Skinner argued that children learn the grammar through modeling and reinforcement (Siegler, 1991). In a study hypotesizing that imitation works through the grammatical knowledge of the modeling child, Fraser and Beluggi (1963) demonstrated that in some circumstances children can correctly imitate sentences that they do not understand. Therefore accurate imitation of sentences doesn't require the ability to make a complete analysis of everything in the sentences. Production in the sense of immitation proved to be more advanced than understanding in three-year-olds. As this result still conforms the child's grammatical imitation ability, so can be mentioned to support the behaviorist approach to language acquisition.

Being the forerunner of **nativistic approach,** Chomsky suggested that the language sample which a child might hear from the outside world would not be sufficient to allow the child to deduce the complex systems of an adult's language. Therefore Chomsky defends that people are born with some of this innate

knowledge of a universal grammar. The child discovers the language of the community that he/she is in, and then applies the universal rules of language to that particular language (Bancroft, 1995; Siegler, 1991). Psycholinguists proposed that language is acquired through an inborn Language Acquisition Device (the LAD). This acquisition process is essentially independent of the child's cognitive development because the LAD responds only to the structure, not the meaning of speech. So the critical aspects of language acquisition were assumed to be present at birth within the LAD (Bohannon & Bonvillian, 1997; Irwin & Simons, 1994; Lund & Duchan, 1988; Vasta et al., 1995). This was assumed to be the only viable explanation for how languages could be learned so rapidly even under impoverished conditions.

Tomasello (2000) investigated how children acquire the syntactic structure of a language because they do not hear an adult speaking in abstract syntactic categories and schemas, but only in concrete and particular words and expressions. He discussed whether children's early linguistic competence is *innate* (as Chomsky states children do not have to learn or construct abstract syntactic structures at all, but rather they already possess them as a part of the LAD) or *usage-based* (according to Tomasello, children's early utterances are organized around concrete and particular utterances, not any system-wide syntactic categories or schemas. Abstract and adult-like syntactic categories and schemas are observed to emerge only in a gradual manner during the preschool years). Tomasello thought the overgeneralization errors in childrens' speech are a result of not facing such errors from adults. Tomasello investigated why the LAD does not help children to correct

these errors. He studied the imitative production of novel verbs in children by teaching them novel linguistic items and seeing what they do with them. The results revealed that children can use novel verbs when they have heard them used that way. Combining results from naturalistic and experimental studies, Tomasello concluded that young children are productive with their early language in only limited ways. They begin by learning to use specific pieces of language and only gradually create more abstract linguistic categories and schemas.

As Nicolosi et al.(1989) mentioned, **Interactionist** approach combines the nativistic and empricist approaches' main assumptions. Interactionists propose that universals of language are acquired by means of an innate mechanism then child's acquisition of complicated language system is assisted by the principles of stimulus-response conditioning.

Cognitive-developmental approach is one of the interactionist approaches to language acquisition. These theorists, Piagetians and information-processing researchers, defend that children's early knowledge and concepts play an important role in language development. They emphasize internal structures as the ultimate determinants of behavior but believe that the sequence of cognitive development determines the sequence of language development (Bohannon & Bonvillian, 1997).

As cited in Thomas (1996), Piaget outlined the course of intellectual development as follows:

- The sensorimotor stage from ages 0 to 2 (understanding the environment)
- The preoperational stage from ages 2 to 7 (understanding the symbols)
- The concrete operational stage from ages 7 to 11 (mental tasks and language use)
- The formal operational stage from the age 11 onwards (dealing with abstraction)

Piagetians linked advances in sensorimotor and early preoperational abilities to corresponding language skills.The sensorimotor period, was mostly studied and researchers attempted to identify the sensorimotor understandings that are precursors to language learning during this early period of life in normally developing children (Lund & Duchan, 1988). Information-processing researchers contend that when children hear speech, they analyze it according to its content, before extracting its grammatical structure. They studied language acquisition by an information processing theory, learnability theory, that uses computer models to attempt identifying the structure of language and underlying cognitive processes (Vasta et al., 1995).

As Aksu-Koç (1988) mentioned, Chomsky's theory motivated a single focus on syntax and depended the explanations on structural complexity, while Piaget's theory motivated a focus on semantics and explanations based on cognitive complexity. Both theories maintained the primacy of logic over language together with the representative function of language, the human as a speaker-hearer, was emphasized. The recent functionalists also recognized that both the communicative and the representative function of language and investigated the development of form and meaning in the context of use (Aksu-Koç, 1988).

Another interactionist theory, **social interactionist approach** emphasizes the social context in which language learning occurs. Social interactionists assume that language development is equivalent to the acquisition of grammatical rules. The learning based theories contend that the environment and social learning principles provide the children with experiences necessary for language acquisition.The forerunner of this approach, Jerome Bruner, stated that preverbal exchanges make language development possible (Bancroft, 1995). Social interactionist theorists also defend that children are primarily motivated to acquire language in order to gain a tool for communication and parents ease this process by providing a Language Support System, called LASS. A system assisted by games and songs (Bohannon & Bonvillian, 1997; Irwin & Simons, 1994; Vasta et al., 1995).

The newest alternative model to the acquisition of language is the **connectionist approach**. It is also an interactionist approach. Connectionist theories attempt to explain behavioral phenomena in terms of networks of simple processing units. Learning involves gradual changes to the weights on connections between units that determine patterns of activation in the network. As Seidenberg (1997) reported, this approach emphasizes continuity between how language is acquired and how it is used. This theory also retains the idea that innate capacities influence language learning but they argue whether this effect include the knowledge of grammatical structure. The connectionist approach focuses on identifying the nature of the mechanisms that support learning of grammatical processes. The learning procedures represent a significant advance over the simpler ones.

Numerous descendant research are being conducted over these theoretical framework in order to uncover the nature of knowledge underlying language acquisition. However, the theoretically distinct views continue to exist.

1.2 The Study of Language Development

Language acquisition period is rather a complicated one for the child and the development process continues throughout the whole life period (Finegan, 1994; Gleason, 1985).

Every child is capable of acquiring a human language, is capable of acquiring any language. At the initial stages of development, the children find all languages equally simple (Crain & Lillo-Martin, 1999). However, particular features of one language may be more difficult to acquire than equivalent aspects of a different language (Finegan, 1994).

The general language acquisition process is explained either in stages or in age levels : Humanbeings start the acquisition of language during their first months of life, long before expressing their first words. When toddlers have begun the expression of a few words, the course of language development appears to have some universal characteristics (Gleason, 1985). As also Bloom (1994) mentions, primary language acquisition process is characterized by pretty much the same sequence, in just about the same way across cultures. This sequence occurs through, firstly cooing stage (comprises all possible phones and essentially the same in all

infants all around the world). In the period from birth to 6 months, children's most vocalizations involve crying, laughing and cooing (McElroy, 1972). Then babbling stage starts. This stage comprises only the distinct phonemes characterizing the infant's native language (Bloom, 1994). After the babbling stage, the infant moves into one-word utterances stage, sound productions in repeating sequences and the first morphologically simple word appears (McElroy, 1972). This stage is followed by the transition to two-word utterances and telegraphic speech with two, three or more utterances stage. And finally the infant acquires the basic adult sentence structure with continuing vocabulary acquisition. From 18 to 24 months, verbal production accelerates, descriptive and meaningful two-word phrases and Piaget's egocentric speech activity – speech lacking of a primary communicative intent, either in the presence of others (cited in Dale, 1976; pp. 248) - , and naming behavior initiates. From 2 to 3 years, phrase utterances increase. From 3 to 4 years, interest in new words, repetition of short rhymes and stories appear. From 4 to 5 years, rapid vocabulary growth and more complex phrase units. At the same age level, concern about the future events and understanding a word independent of the inflection and the context in which it occurs, begin. Difficulties in finding the right words and fascination with naughty words are common (McElroy, 1972). By the age of 5, children mostly understand and produce complex and uncommon sentence structures (Bloom, 1994). From 5 to 6 years, wh-questions like "who, what", consistent use of pronouns, complex sentence structure and handling abstract information are acquired. By the age of 10, children's language is fundamentally identical as adults' language (Bloom, 1994).

As cited in Crain & Lillo-Martin (1999), Roger Brown constructed a stage theory based on utterance length and vocabulary acquisition. According to him, at about age 2, the child is said to be in language development Stage I, having 400 words, producing single-word utterances of naming and two-three word semantically simple sentences with the same word order of adults but grammatical words like "is" and "the" are omitted. Omission is also widely discussed by Brown and Bellugi (1964). By commenting on the transcribed material of their experimental study depicting the verbal interchange patterns between 3 mothers and their preschooler children (the subjects of Brown's previous longitudinal study), Brown & Bellugi (1964) noticed that imitation of children were in the form of reducing the inflection on the verb. When the mother said "*daddy's brief case*", the child imitated as "*daddy brief case*" or for "*Fraser will be unhappy*", the child imitates "*Fraser unhappy*" (p.137). In these imitations while the word order is preserved, the child reduced the original structure by omiting the small and closed syntactic classes like inflections, auxiliary verbs, articles prepositions and conjunctions.

Stage II includes the period from 2 ½ to 3 years, with a vocabulary of 900 words with the onset of the acquisition of grammatical words, morphemes., like "in", "on", "-ing" progressive marker, "-s".plural marker. The children continue to produce one clause sentences. Stage III is the age period between 3 and 3 ½ years, with approximately 1200 words. Syntactic transformations of more complex grammatical forms like prepositions and WH-questions are seen. Stage IV, from 3 ½ to 4 years, is characterized by 1500 words, multi-clause sentences and onset of

telling stories. The last stage, Stage V, includes the fourth and fifth years, with typically 1900 words. Conjunctions, temporal terms like "before, after", more social conversations, metalinguistic abilities like defining words and correcting their own grammatical errors are seen. Then from 5 to 10 years, vocabulary continues to increase slowly and children correct most of the exceptions of rules they overregularized.

Overregularization is a common concept for language acquisition period. The above mentioned theorists Bloom (1994), McElroy (1972) and Brown (as cited in Crain & Lillo-Martin (1999), as well as other researchers (Dale, 1976; Finegan, 1994) mentioned overregularization generally as: The non-adult forms of language used by children, like the application of regular past tense marker of *-ed* to irregular verb forms as *goed*; or the plural marker *–s* broadly as *foots*. That means that they have extended the generalization too far, however, this error infers that the children succeeded in deducing a rule from what they have acquired previously. Overregularization errors are firstly seen in Stage II in Brown's theory, and corrected by the child between 5 and 10 years.

As Karmiloff-Smith (1979) stated, after the age of 5, language becomes superficially correct and important clues on ongoing development can be realized from 5 year-old children's hesitations and spontaneous corrections. A gradual passage from agglutinated, unifunctional homonyms, to plurifunctional systems of relevant options for modulating meaning, tagging of general principles with rules of exceptions, the progressive passage from co-ordination to subordination, the gradual

capacity to be economical in utterances, to avoid redundant marking, to gauge the communicative burden that a morpheme can carry, may be a general feature of development of the noun and verb phrase after 5 years. After the gradual passage from the acquisition of extralinguistic to intralinguistic features, at the age of 8, to metalinguistic awareness is acquired: After the age of 8, language becomes solely the only important instrument for representing and communicating thought (Karmiloff-Smith, 1979).

The important thing here is that, the progression occurs from more general to more specific abilities. The language acquisitions of children begin from simple and move toward complex structures and abilities even after the age of 5, till the age of 8.

1.3 The Turkish Language

1.3.1 The Basic Properties of Turkish Language

Being one of the oldest functional languages, Turkish language is spread over a large geographical area in Europe and Asia. It is one of the most widely spoken tongues in the world. It is spoken in the Republic of Turkey, Azeri, the Türkmen, the Tartar, the Uzbek, the Baskurti, the Nogay, the Kyrgyz, the Kazakh, the Yakut, the Chuvas and in other dialects. Turkish belongs to the Altaic branch of the Ural-Altaic family of languages, and thus is closely related to Mongolian, Manchu-Tungus, Korean, and perhaps Japanese (http://www.mfa.gov.tr).

Turkish is an ancient language, with a flawless phonetic, morphological and syntactic structure. Compared with other languages Turkish grammar has few irregularities; most of its parts of speech are logical, orderly and regular. This is particularly true of the basic patterns of verb conjugations (Aksu-Koç & Slobin, 1985; Halman, 1981). The fundamental features which distinguish the Altaic languages from the Indo-European are as follows:

1. Vowel harmony, a feature of all Ural-Altaic tongues.
2. The absence of gender.
3. Agglutinative: in which words are made up of a linear sequence of distinct morphemes and each component of meaning is represented by its own morpheme.
4. Adjectives precede nouns.
5. Verbs come at the end of the sentence. Its basic sentence structure consists of Subject – Object – Predicate (S- O –V) (Aksu-Koç & Slobin, 1985).

1.3.2 The Development of Turkish Language

Although the main structures differ accross language groups, it is a common acceptance that, language develops in the same sequence even across children form different cultures. The stages, especially the semantic development stages for Turkish rather than syntactic acquisition stages as mentioned by Acarlar & Dönmez (1992) Dönmez & Arı (1992), and Güleryüz & Dönmez (1992), follow a consistent order, beginning from simple acquisitions generating towards complex abilities and structures. The initial course of language development in Turkish children, till the

end of first year, follow a parallel order to that of the above mentioned sequences of general acquisition. Turkish children also acquire their language through the stages of cooing, babbling, lalling –the repetitive babbling period, varigated babbling and vocables in their first year.

The overall course of linguistic development in Turkish, is briefly summarized in Aksu-Koç & Slobin (1985). The inflectional system, entire set of noun inflections and much of verb inflections are even present at one word stage and mastered by the age of 24 months. Dönmez & Arı (1992) stated that between 12 and 30 months of age, Turkish children firstly produce single words, especially referring a family member or a mostly used object or toy, then two and three word utterances by the age of 20 months. No errors are made in the order of agglutinated morphemes with few morphological overgeneralizations. Aksu-Koç & Slobin (1985) concluded that the early acquisition of grammatical morphology and lack of overgeneralizations, Turkish child's speech does not resemble to the child language of most other languages. No telegraphic early utterances, with rather suffixed inflections, Turkish child utterances are short and simple but rarely incomplete or ungrammatical. Fixed word order is acquired before 24 months of age. Then the vocabulary and grammatical acquisition increased by using structurally more complex utterances in verb tense which will be investigated in detail in the next chapter, noun inflections, personal pronoun conjugations, noun phrases, pronouns in general, plural endings, semantic structure of sentences, adverbs, conjunctions and exclamations. Boys acquired these grammatical forms in the same sequence but at a slower rate than that of girls'. Two and 3 year-olds begin mastering verb inflections for more complex structures like voice and passive, nonwitnessed past tense,

conditional and causative together with the acquisition of syntactic means for temporal and causal linking of clauses. The following acquirements of locative postpositions, question words, temporal and causal clause relations emerge in the standard crosslinguistic order from simpler to more complex structured ones. After age 4, while the grammar of simple sentences and main clauses are mastered easily, the syntax and morphology of subordinate clauses are considerably found difficult by Turkish children. Until the age of 2 ½ , simple sentences without explicit grammatical connection markers are seen, during the third year connectives without nominalizations are used. After age of 4 children master using nominalizations for various subordinate clauses with possible few errors (Aksu-Koç & Slobin, 1985).

The progression from cooing and babbling to more and more complex utterances seems to support the notion that children begin with simple associations and their utterances gradually increase in complexity (Bloom, 1994). However, the general syntactic language acquisition period in Turkish slightly differs from that of other languages. Turkish verbs are remarkably regular in their conjugation (the form of verbs, change depending on the role they play within a sentence). All verbs, including the auxiliaries, compounds and extended forms, conform to the same basic patterns of conjugation, which have virtually no irregularities (Halman, 1981).

CHAPTER II

VERB -TENSE ACQUISITION

Research devoted to the development and representation of natural language concepts continue to increase in amount and sophistication. All human languages are structured and follow certain rules called grammar. Language acquisition can be approached from a multidimensional perspective, which considers syntactic, semantic, pragmatic and cognitive factors that simultaneously influence the process (Aksu-Koç, 1988).

Natural languages rely on different devices. For the developmental perspective, the origin of grammatical categories is a crucial aspect.

2.1 Definition of Verb-Tense and Related Terms

As Finegan (1994) states, the children are naturally endowed with certain strategies for analyzing these aspects of language. These operating principles can be summed as at first paying attention to the order of words in utterances, then paying attention to the order of morphemes in words. Later on, the children pay particular attention to word endings, inflections. Focusing on consistent relationships between expression and content follows. Finally the children look for generalizations (Finegan, 1994).

In the developmental sequence of children's move from one word speech to more complex utterances, there is one grammatical category that appears to be the most important: Verbs.

A **verb** is a member of the syntactic class of words that typically signal events and actions. They mostly constitute, independently or in a phrase, the minimal predicate in a clause. As mentioned in Lund and Duchan (1988), verbs, being the most varied and complex of the word classes, are an excellent indicator of the child's progress in mastering the grammatical rules of the language.

In inflectional languages like Turkish, verbs may be inflected for **tense** (refers to the time of the event or state denoted by the verb in relation to some other temporal reference point), **aspect** (expresses a temporal view of the event or state expressed by the verb), **voice** (indicates whether the subject is an actor, patient, or recipient), **modality** (signals illocutionary force via grammatical devices called moods, that expresses the general intent of a speaker, or a speaker's degree of commitment to the expressed proposition's believability, obligatoriness, desirability, or reality) or aggreement with other constituents in person, number or grammatical gender.

Inflection is variation in the form of a word typically by means of an affix that expresses a grammatical contrast which is obligatory for the stem's word class in some given grammatical content. Inflectional operations are grammatically required in certain syntactic environments, like the main verb of an English sentence

must be inflected for subjects and tense. Inflectional operations tend to be regular and productive. Inflection is a kind of morphosyntactic (an ordered, dynamic relation between one linguistic form and another) operation.

Inflectional affix is an affix that does not change the word class of its stem, like in *oku-yor*. It is typically located farther from its root than a derivational affix, and it produces a predictable, nonidiosyncratic change of meaning. (The above mentioned grammatical terms are taken from: Gencan, 2001; Lund & Duchan, 1988 and Nicolosi et al., 1989).

There is a general agreement among the widely differing theoretical backgrounds that, verbs play a key role in early grammatical development (Kelly, 1997; Lund & Duchan, 1988; Olguin & Tomasello, 1993). Verb learning in general is thought to influence the pattern of acquisition of mental state language (Tardif & Wellman, 2000). Once children acquire the meaning of a verb they can use the verb to predict its syntactic uses (Lund & Duchan, 1988; Olguin & Tomasello, 1993). As Naigles and Kako (1993) mentioned, this syntactic bootstrapping predicts that children use both syntactic and situational information to learn about verb meanings. A powerful correlation between verb meaning and syntactic frames were reported to have been found by Kelly (1997),.

The ideas of past, present and future are basic to a temporal scheme of the world. On the other hand, the basic tense distinction in most languages is a two way distinction between past and nonpast; or future or nonfuture rather than the three way distinction (Aksu-Koç, 1988). When children begin to use verbs in their early

word combinations, the verbs are uninflected; they are not marked with grammatical information such as tense and aspect. Then inflections begin in a child's productions (Aksu-Koç & Slobin, 1985; Lund & Duchan, 1988).

As Aksu-Koç(1988) emphasized, **verb-tense** in traditional grammar refers to the relating of the time of the referent situation to either the time of utterance or to the time of some other situtation . Tense is the "grammaticalized expression of location in time" (Taylan, 1988). Tense is taken as a grammatical category which functions to establish a primary temporal reference point with respect to utterance time. In traditional grammar, there are six basic tenses, plus a progressive construction. Tenses are either simple (time periods which tell time now, in the future or in the past) or perfect (times expressed in terms of another time period).

Aspect is concerned with the relation of an event or state to a particular reference point, whether located before, after, around or simply at a particular point in time (Aksu- Koç, 1988). In other words, aspect is concerned with the semantic internal temporal constituency, so as this present study aimed at studying Turkish children's verb-tense acquisition syntactically, aspect was not taken into consideration. *Modality* distinctions refer to the expression in language of the subjective attitudes of the speaker, in relation to the event being talked about. Languages typically express modality either through the lexical category of modal verbs like may, can, must, will; or through the inflectional category of mood like imperative, subjunctive and the like (Aksu-Koç, 1986; 1988).

2.2 Development of Verb-Tense

When the emergence of formal structures for temporal reference is taken into consideration, a consistent order of acquision among children and even across languages was revealed (Slobin, 1985; Aksu-Koç, 1988; Crain & Lillo-Martin, 1999). Like the general language acquisition process, the temporal reference and verb-tense acquisition is believed to occur through stages (Aksu-Koç, 1988; Brown, 1973, in Crain & Lillo-Martin,1999).

According to Aksu-Koç (1988), after the pre-linguistic period, **pre-inflectional period** , characterized by the lack of overt marking, occurs. In a parallel manner, Roger Brown states that, at about age 2, the child is said to be in language development Stage I and bare verb forms without any modulations are commonly used and gain their meanings from the context (cited in Crain & Lillo-Martin, 1999). Children's first verbal constructions are found to be either imperatives or infinitives. It is commonly agreed upon that the scope of temporal reference at this period is limited to the present moment (Aksu-Koç, 1986; Aksu-Koç, 1988).

In the following period, the **period of inflections**, begins within the second year, emergence of verb inflections and overt marking of the semantic distinction between modalized and nonmodalized utterances are seen. Olguin & Tomasello, (1993) found that by around 2 ½ and 3 years of age children clearly use their language productively in a variety of ways that indicate a grammatical category of verb. Again parallel to Aksu-Koç's theory, according to Brown, at the age of 2 ½

years, children usually reach Stage II and in this stage, they acquire the possessive ending the "-ing" and the past tense, with overgeneralizations of the regular past tense form. The use of future is not found to be common during this developmental period . It was a commonly shared observation that in this period, the forms occur in rather restricted environments like occurrence in only question-answer sequences or occurrence only with certain types of verbs (Aksu-Koç, 1988).

The following period, the **period of temporal reference,** proceeds from the second half of the third year (Aksu-Koç,1988). Children's utterances are formally marked by modal verbs, auxiliaries or mood or tense-aspect inflections or auxiliaries indicating distinctions between the past, present and future tenses. Brown also mentioned that at about the same period, at approximately 3 years of age, children reach Stage III of language development and go through the acquisition of auxiliary verbs and succeed in using syntactic transformations. At around 3 ½ years, children move into Stage IV and the overregularizations of many irregular forms of verbs continue in acquisition (Crain & Lillo-Martin,1999). As cited in Olguin & Tomasello (1993), experiments showed that children as young as 3 ½ of age are often able to supply the correctly inflected form of the word, and that the ability to do this increases with age. The analyses of both spontaneous speech and experimental studies showed that preschool children are productive users of verb morphology. In addition to all these, expressions of necessity have been observed from the second half of the third year onwards, in many of the languages considered (Aksu-Koç, 1988).

In the last period of language acquisition, the **period of complex temporal reference**, Aksu-Koç (1988) states that more complex meaning relations are marked and more complex syntactic structures are used. The Vth Stage of Brown's theory fits to this period of language development. As cited in Crain & Lillo-Martin (1999), it begins about 4 – 5 years, and usage of temporal terms and consciouss awareness of the properties of the language starts. After Stage V, as utterance length reaches the final point while the complexity of language use increases, it becomes difficult to continue explaining acquisition in terms of stages. After Stage V, 5-to-10 years period is characterized by increasing vocabulary and learning most of the exceptions to rules that have overregularized (Karmiloff-Smith, 1979).

Before reporting the course of verb-tense acquisition in Turkish, mentioning some processes in the child's acquisition of syntax will prove useful. The above mentioned statements of verb-tense acquisition shows a gradual improvement from simple morphological structures, to morphologically more complex structures of verb-tense. This is in line with the normal language acquisition transitions.

2.2.1 Syntactic Processes in Acquisition

Children utilize some processes in order to gain syntactic competence.These can be summarized as follows:

Although preserving the order of the adult sentence, children used *imitations in the form of reductions*. The grammatical function contents were omitted rather than the contentives, the main semantic content structures of the utterance. The

imitations stayed in the range of 2 to 4 morphemes. The omission may be due to the constraint on length of longer maternal utterances or may be the child wanted to tell what the mother says but he has no comprehension of the semantic contrasts involved. Also Brown and Bellugi suggested that differential stress on maternal speech may have been the cause of child's differential retention. The trouble of hearing the weakly stressed function structures could have resulted in a telegraphic transformation. However the mothers expand these telegraphic transformations by imitating the child continuously with the expanded form of his speech (Brown & Bellugi, 1964).

Another syntactic process in children's syntax acquisition period is *the least effort condition* suggested by Chomsky (1988, cited in Pierce, 1992). Principle by which, the speakers are claimed not to exert themselves more than is necessary for successful communication. Taken as a universal grammar condition, the principle of least effort insures that syntactic derivations are minimal in cost, and is about the extent to which, language specific principles are present in a derivation or inflection. The child assumes the shortest derivations or no derivation at all. The basic idea undermines this is the grammar is innately biased toward derivational minimalism.

Another syntactical acquisition process is *overgeneralization.* The occurence of certain kind of errors on the level of morphology reveals the child's effort to induce regularities from speech. This includes overgeneralizations on the level of syntax. The overregularization of English past tense can be given as an example to this kind of a process – e.g. *I goed school* (Finegan, 1994).

The *latent rule structure* is another syntactical acquisition process. (Brown & Bellugi, 1964). Every child processes the speech to which he is exposed, to induce a latent structure from it. Then the child reserves these latent structures for later grammatical uses. These syntactic and semantic structures can be used all life long.

2.2.2 Turkish Verb-Tense Acquisition

Turkish is an agglutinative language, the invariant verb stem is followed by a string of affixed particles aggreeing with the stem in vowel harmony, and marking voice, modality, negation, aspect, tense, mood, person and number. The ordering of these particles have crucial meanings.

As a result of her study aiming to investigate how temporal reference is expressed in Turkish, Taylan (1988) concluded that although Turkish has rich verbal morphology, it has a fairly simple tense system, but an elaborate modal system and Turkish is a modality prominent language.

Turkish exhibits the classic features of an object – verb language. The particles affixed to the verb express notions of tense, aspect, mood, and modality and various combinations of such notions. As Halman (1981) mentions, Turkish verb-tense conjugations can be classified and exemplified as follows:

Indicative tense (haber/belirtme kipleri) conjugations:

Definite Past :	geldim, geldin, geldi, geldik, geldiniz, geldiler
Indefinite Past :	gelmişim, gelmişsin, gelmiş, gelmişiz, gelmişsiniz, gelmişler
Aorist/ Present :	gelirim, gelirsin, gelir, geliriz, gelirsiniz, gelirler
Present Progressive :	geliyorum, geliyorsun, geliyor, geliyoruz, geliyorsunuz, geliyorlar
Future :	geleceğim, geleceksin, gelecek, geleceğiz, geleceksiniz, gelecekler

Desiderative tense (dilek kipleri) conjugations:

Necessity :	gelmeliyim, gelmelisin, gelmeli, gelmeliyiz, gelmelisiniz, gelmeliler
Optative (Subjunctive):	geleyim, gelesin, gele, gelelim, gelesiniz, geleler
Conditional :	gelsem, gelsen, gelse, gelsek, gelseniz, gelseler
Imperative :	-------, gel, gelsin, ---------, gelin(iz), gelsinler

Compound tense (bileşik zamanlı eylem) conjugations:

Imperfect Compound :	gelmiştim, gelirdim, gelmeliydim, gelecektim, gelseydim, geleydim
Narrative Compound:	gelmişmiş, gelirmiş, gelmeliymiş, gelecekmiş, gelseymiş, geleymiş
Conditional Compound:	gelmişse, gelirse, gelmeliyse, gelecekse, geldiyse

In the present study expressive language development of Turkish preschoolers was investigated syntactically rather than taking semantical components into the research scope. The main point of investigation was the process of verb-tense acquisition and the structure of used verbs among Turkish preschoolers.

Under this topic, one thing seems crucial to mention here. Turkish, has an inflectional modal verb system, which is considered as a part of Turkish verb-tense however not mentioning time relations but reflect mood instead. While the same means are depicted by auxiliary and modal verbs in English (separate verbs), in Turkish mood inflections reflect the equivalent meanings. Thus, verb-tenses and moods are structured in the same morphological way, by inflectional verb

endings. So, as this study investigates syntactic and morphological acquisition rather than meaning, all the moods and tenses are considered under the unique heading of "verb-tense" parallel to the expressions in Turkish linguistics. These are "belirtme kipleri" in Turkish, here will be expressed as "desiderative tense" as mentioned in Korkmaz (1992). Also the same approach is taken for the terminology conflict in "compound tenses", which is "bileşik zamanli eylemler".

Turkish linguistic literature has really sparse research conducted in the acquisition and usage of verb-tense and verb structure :

As cited in Aksu-Koç & Slobin (1985), the first published work on Turkish child language was a longitudinal observation of one boy and one girl between 12 and 24 months of age, by Özbaydar in 1970. Then the observational Turkish language acquisition studies began.

After analyzing the language of one Turkish child from the age of 1:3 to 2:4, in order to describe the order of verbal inflections in Turkish, Ekmekçi (1982) concluded that the development of verbal inflections takes several stages. The order and the appearance of the verbal inflections in the child's speech prove to be the result of her knowledge about object and relational concepts about time and place, therefore agreed to Piaget. At age 1:3, inability and progressive markers appear, along with the mental development, the other tense markers appear at the age of 1:7., but their usage increase at age 1:9.

Slobin and Aksu-Koç (1985), derived from the general results of cited studies that the inflectional system appears early in Turkish acquisition. By 24 months of age, Turkish children inflect verbs for tense-aspect (past result, ongoing process, intention). Both noun and verb inflections are present in the one word stage. As early as 15 months, productive usage of early words including stressed suffixes like, past tense and negative imperatives. Below age 30 months, child attempts to gain some complex verbs by adding meaningless syllables rhythmically. 2 and 3 year-olds are mastering verb inflections for voice, modality of indefinite past tense, conditional and causative and syntactic causal and temporal means. After age 4 children begin syntactic confusions and beyond age 6, systematic data are not said to be available.

Aksu-Koç (1988) longitudinally observed three 21- 30 month old children in order to uncover the early inflectional development of Turkish and analyzed the tape recorded spontaneous speech of children mostly in interaction with the investigator during home visits. Then, she cross sectionally investigated the processes of differentiation of the tense-aspect–modality functions of the two past inflections interviewing sixty preschool children in 3:0-6:4 age range children, in five age levels with eight –month intervals. Three production, one comprehension and one combined production-comprehension tasks, by using picture and toy configurations connected with a story-line were utilized. The general results revealed that, definite past, present progressive, and the optative indicating desire, were the first forms to be semantically acquired. Then indefinite past indicating perfect, the aorist inflection is used in its epistemic as well as deontic meanings and

the conditional inflection in reference to possible or hypothetical situations around the age of 2.8- 3.0.

In a case study, conducted by Çapan (1988), acquisition of verb inflections was investigated. A Turkish girl's language was investigated between 15 and 26 months of her life, based on the tape recordings and transcription of her speech samples. The context in which the utterance took place and the corresponding grammatical sentence meant by the child, were taken into consideration for the study. The results showed that, in this period of her life, she had past, future and progressive tense markers. Definite past tense marker (-dI), was initially observed in her speech. (A semantic development from a concrete to a more abstract usage of this marker was observed.) The indefinite past marker (-mIş) occurred at about age 2, but not used productively. The present progressive marker (-Iyor) first used at about 18 months of age, but the idea of present action was present before this age. The aorist (-Ar) was not seen in any of her utterances, but the future tense marker (-AcAk), emerged at around 20 months of age in her speech. In the above mentioned study, generally, a gradual development from an aspect of tense to its temporal reference was seen. There was a gradual transition in the child's speech both semantically and morphologically.

In a descriptive study, conducted by Dönmez and Arı (1992), 12-30 month-old Turkish children were investigated in their progress in acquiring and using Turkish morphology. Middle socio-economical status children of 12, 18 and 24 month-old children were observed for six months, in 15-day intervals, for one hour.

Also, 15 min. mother-child verbal interactions were tape-recorded. In addition to these, written maternal observation data, sessional maternal interviews were available. The results revealed information about various aspects of Turkish morphological development, but for that study, the frequency of verb-tense usage was specifically important. The sequence of producing indicative and desiderative verb-tense markers among that age range subjects was; initially imperatives, definite past, present progressive, future, subjunctive, indefinite past, aorist and conditional tense conjugations.

In a following study, Acarlar and Dönmez (1992), worked with 30-47 month-old Turkish preschoolers, to investigate their morphological language development. 30, 36, 42 month old, middle SES children helped as subjects and were longitudinally observed for one hour duration once a month, for six month period, 20-min. verbal expressional tape recordings during these sessions, also the subjects' verbal expressions during daily personal interactions (with either of their parents, the researcher, peers, or alone) were tape-recorded. In addition to all these, for three times, 20-min. tape recordings were gathered during predetermined home activities. The modality related results revealed that the children of this age group most frequently used, firstly the present progressive, then definite past, indefinite past, future, imperative, aorist, optative and conditional verb conjugations. However, necessity conjugations were not found in this age group children's speech. In the issue of compound verb-tense, imperfect compound was most frequently used, then narrative compound and then conditional compound verb-tenses were frequently used.

In another following study (Güleryüz & Dönmez, 1992), carried out for the same purpose as the former two studies. This time, 18 normally developing 48-60 month-old Turkish preschoolers were observed longitudinally for six months, for one hour each month. In each observation, the researchers gathered 15-min. tape recordings of the verbal expressions of each child during prearranged activity sessions. Home recordings were gathered for 15-min. sessions during prearranged activities conducted with the mother, father, and child alone or with both parents. The results depicted that in all the age and gender groups of the participants, most frequently present progressive, then indefinite past, definite past, aorist, future, optative, imperative and conditional conjugations were used. In compound verb-tenses, the narrative compound, the imperfect compound, and conditional compound conjugations were seen in this frequency sequence (Güleryüz & Dönmez, 1992).

Choi and Aksu-Koç (1996), conducted a crosslinguistic comparison study on the development of modality in **Korean** and **Turkish**. They first summarized the modal suffix system in Korean and Turkish , and then analyzed the developmental patterns in young children and discussed some similarities and differences in the acquisition of semantic and pragmatic functions of modal suffixes in the two languages. The Korean data gathered from four monolingual children , and consisted of recorded mother-child interactions longitudinally from 1:3 to 3:0. The Turkish data gathered from the same kind of data, from two monolingual children (1:3- 2:6 age range) and two other children's data supporting the observed trends, were also referred to. The results revealed that in both languages, the children first distinguished between statements versus requests and intentions. In Turkish direct

experience was expressed early as "–dı" and "–ıyor" , marking immediate past, completed action versus ongoing events respectively. In Korean children used "-ta" to express both present and immediate past events. Both groups of children encoded novelty with a modal marker (Turkish: -mış ; Korean: -ta). In both languages, children started with marking immediate past or ongoing events, than habitual or normative states of affairs and finally indirect source of information. The most important difference between these two languages was, the degree to which discourse pragmatics was integrated into the meaning of modals.

The verb tense acquisition studies done in Turkish revealed the above mentioned results. There are numerous studies conducted in order to uncover different languages' acquisition period :

2.2.3 English and Other Languages' Verb-Tense Acquisition

As De Villiers & De Villiers (1985) stated, English has a relatively impoverished morphology compared to other languages. Verbs in the present tense require only *–s* inflection and rarely the exceptions of *has* and *does*. The present progressive tense has two required markings; the *–ing* inflection on the verb and the auxilary *be* before it. The regular past tense *–ed* is phonologically conditioned by the final consonant of the root with the allomorphs /t/, /d/, and /id/. However, irregular past tenses are also used and take a variety of forms like *tell-told, bring-brought.* The perfect form of the verb consists of the modal *have*, plus the past participle inflection (*-ed, -en* or an irregular form) on the verb, like *I have gone to school.* The past form *had* creates the past perfect form. Also verbs can be modified by an

extensive modal auxiliary system, using preposed modals to indicate possibility/ability (*I must go* - obligation, *I will go* – future tense, *I would go if you came too*- conditional tense). The modal auxiliaries can combine with *be* and *have*, to make more complex expressions (*I might have been gone when you called*). The imperative form in English has no subject or auxiliary on the surface, through reflexive forms such as *Go yourself!* and tag question *Go there, won't you!* (De Villiers & De Villiers, 1985).

As cited in Lund and Duchan (1988), the first experimental study of morphological development was done by Jean Berko (Berko Gleason), in 1958. She demonstrated that children's use of morphological inflections is based on grammatical rules rather than memorization of what adults say. The results of her investigation revealed that at least by four years of age children could clearly use the morphological rules to apply to new words, and also that morphological knowledge was still developing at age seven. This study has spawned many other experimental investigations with different groups of subjects. Most of the research on tense and aspect of the English verb system has addressed the more frequently used and earlier acquired forms such as the past tense and the present progressive (Lund & Duchan, 1988).

As cited in De Villiers and De Villiers' 1985 study, by calculating the syntactic complexity, the order of verb-tense acquisition was found as firstly present progressive, then past irregular and finally auxiliaries by Brown's 1973 study. A similar sequence was also found by De Villiers and De Villiers (1985) as well.

Akhtar and Tomasello (1997), uncovered that children as young as 2:1 added *–ing* not *–ed* to verb stems but older children (mean age 3:1) were productive with both inflections, demonstrating that the present progressive inflection is used productively before the regular past tense marker.

According to Wood (1977), Herriot (1969) found that children comprehended especially the past and present verb forms as early as 3 years. Herriot concluded that children could understand verb-tense morphemes at a very early age but have some difficulty with the future tense even at age six. Wood also mentioned that English speaking preschoolers firstly acquire the present progressive, next children form the simpler past tense endings, with redundant errors. By the end of second grade, children are able to apply appropriate present progressive or past tense markers to the verbs of their language (1977).

Aksu-Koç (1988) stated that in English, the present progressive, the regular past inflection, and some irregular pasts were found to have emerged first, in the second period of language acquisition, between ages 2 and 3 ½, which is the period of inflections. After the age of 3 ½, in the third period of acquisition, more variable use of the progressive and past forms and future reference together with adverbials are commonly used. In English, epistemic modals occur first and increase in usage frequency towards the middle of the fourth year. In the last period of acquisition, in the period of complex temporal reference, the full perfect, modals like may, must, ought to; past tenses of "be" forms and modals like should, should have, might and rare use of counterfactual conditionals are seen to have acquired in natively English

speaking children. Also findings of Johnson (1985) revealed that American children are acquiring the perfect tense in some form, during the age range 4 to 6 years. The perfect emerges in roughly the same age range for both the American and English children.

McShane & Whittaker (1988), found a developmental increase in control of the difference between the simple past and the past progressive between the ages of 3 and 5 years. The earliest inflection to appear was the progressive *–ing,* used without the accompany of an auxiliary. Children primarily prefer simple past forms rather than the progressive.

Cazden (1968) studied the acquisition of noun and verb inflections with 3 subjects in a longitudinal study of five-years, initially in the age range of 18 to 27 months. As a result, present progressive appeared firstly in all three children. The sequence of acquiring regular past and present indicative was not consistent. One of the subjects attained both verb-tenses at the same age level, on the other hand subject attained past regular first while the other subject attained present indicative before past regular.

Classic accounts of the development of English inflectional morphology typically agree on a three- phased "U shaped" acquisition pattern (Plunkett & Marchman, 1993). In verb-tense acquisition, children's first productions of past tense are generally correct, either being regular (walk-ed) or irregular (went). Then, incorrectly inflected irregular forms occur (goed). Then tendency of making such

errors decreases and exceptional forms of inflectional system are identified (Cazden, 1968; Plunkett & Marchman, 1993). As a feature of language acquisition, the overgeneralization of various linguistic inflections, like generalizing a regular rule to irregular forms is commonly faced. The English past tense inflection is frequently overgeneralized, so Kuczaj (1977) analyzed the spontaneous speech samples of 15 children, ranging in age from 2;6 to 5;6 for the appropriate use of past tense vebal inflection. The results revealed that irregular past tense form is acquired earlier than regular past tense. Also overgeneralization error types occurred in the related order of acquisition. Partial regularity like adding a final dental consonant to the past tense form, blocks overgeneralization errors.

Kuczaj (1978) also investigated 3 to 10 year-old children's judgements of grammatical and ungrammatical irregular past tense verb forms. These suggest a developmental sequence: 3-to-4 year-old children were found more likely to accept base+ed (eated) forms than past +ed forms (ated), while 5-to-6 year-olds were more likely to accept past +ed forms as they are to accept base+ed forms. So, a developmental tendency, reflecting an increasing emphasis on syntactic regularity that occurs with increasing age (Kuczaj, 1978).

Harner (1980), aimed at gaining information on children's understanding of verb tense and two adverbials (before –after) and assessing the growth of early understanding of past, present and future relations. A hundred and fifty, 3-to-7 year-old children, were interviewed by using four different sets of picture continuums, representing temporal reference. So these findings indicated that linguistic factors

had a strong influence on children's performance on the task. Temporal adverbs are consistently easier than past or future verb forms.

Harner (1981), investigated children's production of verb tense and aspect. In her study, only the goal-oriented events with completive aspect and non-goal oriented events with continuous aspect were, the points of focus. Data from 3.0 to 7.11 year-old 100 participant children were utilized. The results revealed that all the participants used past and future tenses appropriately for both goal oriented and non-goal oriented past and future actions. Aspect emerged as an important factor in the study, but there was little indication that aspect was coded in the future conditions.

In another study, the order of acquisition of comprehending verb tense forms and the effect of age and the specific verb on performance were investigated. Receptive use of six common verb-tense forms (simple present, present progressive, simple past, past progressive, future –will and is going to) was studied. Twenty-four, normally language developing children (ranging between 42-65 months of age) were the participants. A picture-pointing task was used. The results indicated relative difficulty of various tense forms and the effect of specific verbs or picture sequences on performance, within such a task. The children acquired the ability to understand the verb-tense forms during their preschool years, with 65-month-old children still making some errors in the interpretation of past tense. Generally the children first understood the present progressive form, then simple present, followed by two future forms and the two past forms (Broen & Santema, 1983).

In another study, 3-6 year-old children were asked to watch and later describe various situations acted out by puppets (McShane & Whittaker, 1988). Three different experiments for this study, were conducted to investigate English-speaking children's use of verb inflections. The general results revealed that the earliest inflection appeared was the progressive, -ing. Simple past forms, regular or irregular, preferred to past situations, young children primarily used simple past forms rather than the past progressive. Under appropriate circumstances, young children could use the past progressive form. There was an increasing use of the past progressive form with age and this form gradually gets over the simple past as the preferred encoding of past.

In a recent study Sutter and Johnson (1995), tried to find answers to several questions concerning the acquisition of advanced verb forms. Sixty school-aged children participated to their study, which were placed in each of the 6, 7 and 8 year-old groups. All target stimuli chosen for this study semantically expressed past time. Three verb forms, past progressive, past perfect progressive, and the past perfect, and five temporal adverbs/adverbial phrases were selected. In the study, early elementary-school children retold literate narratives that presented them with three advanced verb forms. The first question of the study asked whether children borrow advanced forms from a narrative told by another person. The answer appears to be that children do borrow forms, and the proclivity to do so increases with age. Eight-year-olds used the verb forms of interest at rates significantly higher than both the 6-year-olds and 7-year-olds. Children in this study borrowed the three verb forms selectively. Past progressive stimuli were borrowed at significantly greater rates than

either the past perfect progressive or the past perfect. Furthermore, children borrowed the past progressive at a significantly higher rate than temporal adverbs, although the latter were borrowed at a rate significantly higher than both the past perfect progressive and the past perfect. The past perfect progressive and past perfect still appear to be less familiar or preferred options, when children narrate. 8-year-olds borrowed the past progressive verb form at a significantly higher rate than younger children. This suggests that by 8 years, children have acquired some of the most basic characteristics of narrative style.

2.2.4 Other Mostly Studied Languages' Verb-Tense Structure and Acquisition of Verbal Inflections

German is an Indo-European language and belongs to the Germanic group. It has many dialects spoken in areas like Austria, German Switzerland, and Italian Tirol. Moreover, the dialects within Germany also show considerable variation in phonology and lexical items. The verb morphology is not particularly complex. Verb tenses are formed by on the whole postfixed inflections on the verb root or by using auxilaries (*Ich zeig-e* =I show). Some verbs change (irregular verbs) in the root forms as well as the inflections in the formation of tenses. Some verbs change the root form in some tenses and have different inflections, while some others change the root form but have the regular inflections. Some verbs are made up of a stem and a verbal particle. Many verb stems form a number of different verbs in combination with different verbal particles, so the particle would seem to be contributing a major part to the meaning of the verb (Mills, 1985).

According to Mills (1985), the past participle appears first, without the auxiliary and prefix *–ge*, at a relatively early age. The auxiliary doesn't appear until around age 3, but then it is in frequent use. The prefix *ge-* is found to have emerged around age 3 but the acquisition seemed to take longer time. It seems a fact that *ge-* is an unstressed syllable, therefore omitted and omission of unstressed syllables is reported in the acquisition of many languages. The simple past tense appears later than the compound past tense. Not many errors were reported in the usage of present tense. The auxiliary *werden* is used to form the future tense and it starts to appear around the age 3 (Mills, 1985). As also mentioned in Aksu-Koç (1988), in the third period of language acquisition, German future markers lately emerge as inflections rather than periphrastic constructions.

In a cross-cultural study Szagun (1978), examined the frequency of tense usage by **English** and **German** preschool children. The frequencies of use of present, past and future tenses were compared over the age levels (2:6 – 4:6) for English and German children separately. The results revealed that developmental changes in frequency of use of present tenses decreased significantly with age, at the same rate and level in both languages. The frequency of past and future tenses increased correspondingly, with past tenses increasing more rapidly. The researcher also concluded that the children's tense usage frequencies were indicative of their cognitive organization of temporal experience, present tense is easiest for children, and past tense easier than future tense .

In **Hebrew,** verbs are also marked for tense (present, past or future) and for mood, taking special forms in imperative (*shte*) and infinitive (*li-shtot*), present (*shote*), past (*shata*) and future (*yi-shte*). The acquisition of imperatives and infinitives are followed by present and past tense forms, usually as early as one-word stage but, future tense is acquired somewhat later, from about age 2 ½ (Berman, 1985). Aksu-Koç(1988) also reviewed that Hebrew future tense markers emerge in the third period of language acquisition. By around age 3, Hebrew speaking children typically do have command of tense marking in their language. The children use all three Hebrew tenses simultaneously, although future forms are less common at age 2 than early in the fourth year. Especially the most common verbs are used in verb-forms right from the start, in an error free way (Berman, 1985). In the fourth period of verb-tense development, further developments within the category of past in Hebrew were reported in Aksu-Koç (1988).

Japanese, shares many common morphological and syntactic features common with Turkish. Different from Turkish, verb inflections convey varying degrees of politeness in Japanese.The basic polite suffix is *–mas*, which appears in various inflected forms, so verb morphology is sociolinguistically conditioned in Japanese (Clancy, 1985).

The first stage of language development for Japanese, before age 2, is marked with contrastive use of certain verbal inflections usually including at least the imperative and the past tense. The next stage of language development, at around age 2, there is an increase in the number of verbal inflections and present

progressive, resultative, the nonpast tense and the completed past becomes fully productive, if they were not mastered in the prior stage. The desiderative is also acquired in this stage. A number of new verbal inflections are acquired at around the first half of the third year, namely the completed nonpast, the cohortative/intentive, past progressive/resultative. When the child reaches age 3, passive verbal inflections, obligation (must) and polite inflections in the past and negative emerge. Therefore, the order of acquisition for Japanese verb-tense is : Imperative, past tense (an initial contrast in their usage in the children of 1;6 years were mentioned), present progressive, nonpast tense (present states, habitual or future actions), completed past tense and finally the acquisition of desiderative nonpast tense (Clancy, 1985).

Kaluli, is one of the languages spoken in Papua New Guinea. Verb stems in Kaluli undergo considerable change when the various verbal suffixes are added. In Schieffelin (1985), for all children only inflected verbs were produced and all appeared simultaneously as single words, and in syntactic constructions. There was no sequential pattern. Both positive and negative imperative forms, recent past, present tense, intentives, future tense and habitual were used frequently by all children.

As one of the Indo-European languages, **Polish** belongs to the Slavic branch. Tense and aspect morphology emerge simultaneously in Polish and the finite forms of verbs are inflected for tense. During the acquisition period of the verb stem, the children use only the frozen forms. Indicative forms (mostly the imperfective verbs

in the present tense) are typically used to make statements and the imperative forms are used to make requests. Typically when children are between about 1;6 and 1;9, they begin to use past tense inflections and perfective verb forms. Tense and aspect emerge simultaneously and from the initial period of tensed utterances. Polish children produce activity verb phrases in the past, imperfective and perfective past forms and moderately remote references to the past (Smoczyńska, 1985). Aksu-Koç (1988) mentioned that, Polish children acquire the conditionals early, in the third period of language development.

Romance Languages, are Indo-European, descend the Latin speaking varieties in parts of the Roman Empire. **French, Italian, Portuguese, Spanish** and **Rumanian** languages constitute the Romance languages.

Tense and aspect in **French** are both marked through verb endings, and these two systems are intertwined. The indicative has present, imperfect, compound past and two forms of future. The compound past is constructed with one of the two auxiliary verbs, *avoir* (to have) or *être* (to be), together with tense and the past participle. There are two future tenses : a periphrastic form constructed with the verb *aller* (to go) plus an infinitive, and the simple future expressed by an inflection added to the infinitive form of the verb. In addition to these conditional, subjunctive (wanting, ordering, forbiding, begging), and the imperative (ordering and directing) verb tenses are used The earliest verb-forms are seen in infinitive form and are used rare at the beginning. Later acquisitions include some of the compound tenses for talking about recent versus remote past, the conditional and the subjunctive moods (Clark, 1985).

As cited in Aksu-Koç (1988), in Romance languages like French (the present indicative), Italian and Portuguese (first the past participle forms, then the simple past), Spanish (the progressive, the preterit, the present perfect), were found to have acquired in the second period of language acquisition. In the third period, in French, future tense is constructed with going to and then with future tense inflection, subjunctive appeared to be a late development. The late emergence of future markers as inflections rather than periphrastic constructions, were also seen in languages like Spanish.

In the fourth period of language development, more complex tense markings, coordinations of two tenses, the present subjunctive and imperfective past in Spanish, the compound tenses like the pluperfect, the conditional and subjunctive moods in other Romance Languages; Imperfective forms in Portuguese were cited to have acquired (Aksu-Koç, 1988).

Samoan is a Polynesian language and belongs to the sub group of Samoic-Outlier languages. It has sociolinguistic varieties. Samoan constitutes seven tense /aspect markers: present, future, present continuous, imperfect, present, past perfect, past imperfect. These tenses appear as particles preceding the verb (like *'o lo'o moe Sina* = Sina is sleeping).These markers most commonly used in literate Samoan. In spontaneous spoken Samoan, these forms are used less frequently. In casual use, either tense and aspect markers are completely omitted or an alternative marker is used (Ochs, 1985).

Aksu-Koç(1988) reported that **Greek** present indicative, imperfective present, perfective past as first inflections were reported to occur around the second period of verb-tense acquisition. In the following third period, In Greek, especially the present indicative and perfective past, future tense in form of subjunctive, observed to have increased in frequency. In the fourth period, the imperfective past was mentioned to have acquired by Greek children.

In addition to all these, early use of conditionals were seen in **Finnish, Russian, Turkish**, around the third period of verb-tense acquisition (Aksu-Koç, 1988). The structural complexity of the languages made the acquisition periods differ from each other.

While English has a relatively simple morphology, Norwegian is slightly more complex and Icelandic is a highly inflected language.

The acquisition of past tense morphology in **Icelandic** and **Norwegian** children, was cross-sectionally investigated by Ragnarsdottir, Simonsen and Plunkett (1999). Four, six and eight year-old Icelandic and Norwegian children were investigated. The results indicated that the role of morphological complexity is most important at the earliest stages of development. The results revealed a similar order in the developmental profile for the acquisition of past tense inflection in both languages, but a difference in the rate of development: at age four, the Icelandic children showed a lower level of performance than their Norwegian peers, possibly as a result of greater morphological complexity of the Icelandic inflectional system. However this difference has evened out already at the age of six.

CHAPTER III

PRESENT STUDY

3.1 General Overview of the Literature Findings

When the acquisition of formal structures for temporal reference is taken into consideration, a consistent order of acquisition among children and even across languages was revealed by Slobin (1985), Aksu-Koç(1988), Crain& Lillo-Martin(1999).

When English is considered generally, imperatives, infinitives and present progressive are found to have firstly acquired by children (Aksu-Koç, 1988; Akhtar & Tomasello, 1997; Broen & Santema, 1983; Cazden, 1968; De Villiers & De Villiers, 1985; McShane &Whittaker, 1988, Wood, 1997). Then regular and irregular simple past, past progressive, future, modal verbs, past perfect and past perfect progressive were found to have gained.

When the languages other than English and Turkish are considered, a general sequence of acquisition as: Imperatives and infinitives, present, present continuous, general past, future and desideratives were reported (Aksu-Koç, 1988; Berman,

1985; Clancy, 1985; Clark, 1985; Mills, 1985; Smoczyńska, 1985). The structural divergence and complexity of the languages made the acquisition periods slightly differ from each other but the above mentioned sequences form a general sum up of the order.

When the research investigating Turkish is considered, Acarlar & Dönmez (1992), Aksu-Koç(1985), Aksu-Koç & Slobin (1988), Çapan (1988), Dönmez & Arı(1992), Ekmekçi(1982), and Güleryüz & Dönmez (1992) investigated the verb-tense acquisition of Turkish children. Their results generally revealed that in natively Turkish speaking children, firstly imperatives, and general present tense are acquired. Then the views did not follow a parallel order. For example according to Ekmekçi (1982), progressive marker followed by other tense markers, were acquired. Aksu-Koç & Slobin (1985) mentioned past tense production followed by negative imperatives, indefinite past and conditional acquisition. For Çapan (1988), definite past, present progressive, indefinite past and future with no aorist acquisition till 26 months; for Choi & Aksu-Koç(1996), direct experinece immediate past, ongoing events, habitual, normative and indirect source references were acquired. All these studies had limited number of participants, perhaps the order findings differed due to overt personal and social differences in the participant children of the studies.

In the most recent studies of Turkish language acquisition, Dönmez & Arı (1992)'s results uncovered that when usage frequency is considered; imperatives, definite past, present progressive, future, subjunctive, indefinite past, aorist, and

conditionals were used by 12 to 30 month olds. When considering 30 to 47 month olds, present progressive, definite past, indefinite past, future, imperative, aorist, optative and conditionals were found to have acquired and used. Necessity markers were totally not faced. The imperfect, narrative and conditional compound usages were mentioned to have acquired in the above mentioned order and usage frequency (Acarlar & Dönmez, 1992). Güleryüz and Dönmez (1992) also found that 48 to 60 month olds mostly used present progressive, indefinite past, definite past, aorist, future optative (subjunctive) , imperatives and conditionals. Narrative compound, then imperfect compound and then conditional compounds were found to have used frequently.

3.2 Aim of the Study

The reviewed Turkish language acquisition studies clearly showed that Turkish language has really limited number of linguistic investigations. The formerly conducted research mostly analyzed Turkish language generally, not many studies investigated its basic components' development independently, in detail. Also the most recent descriptive Turkish language acquisition studies accessed, were conducted in 1992 (Acarlar & Dönmez; Dönmez & Arı; Güleryüz & Dönmez). When considered as a series, these studies together, descriptively investigated the development of Turkish language between 12 and 60 months of age. However, while the research scope was extensive to consider most structures of Turkish, but none of these grammatical structures were investigated in great detail.

When the Turkish verb-tense acquisition studies are considered, the most recent verb-tense acquisition study was conducted cross-linguistically by Choi and Aksu-Koç, in 1996 and it only considered the development of modality in Turkish and Korean children.

When the sparse Turkish verb-tense acquisition literature is considered together with no recently published research available for about the last 6 years, present study was a primary study to descriptively investigate the whole verb-tense acquisition structure of Turkish preschoolers.

Although Aksu-Koç (1988) defended that language acquisition can be approached only from a multidimensional perspective, which considers syntactic, semantic, pragmatic and cognitive factors that simultaneously influence the process. However, as Slobin (1985) stated, in order to study the reorganization of the semantic functions, the child must come to realize the range of temporal, modal and aspectual notions that control the use of verb inflections. Keeping the importance of semantics and other dimensions of language acquisition in mind and leaving these issues to future studies, in this study the Turkish verb-tense acquisition was investigated in detail, only considering the syntactic structure.

The main aims of the present study were to:

1) Investigate the expressive verb-tense acquisition of 2 to 6 year-old normally developing Turkish preschoolers.

2) Investigate the basic morphological structure of the tensed verbs used by 2 to 6 year-old normally developing Turkish preschool children.

Both investigations were conducted to reveal the possible age differences in the frequencies of expressive verb-tense usage.The children were grouped as 2, 2 ½ , 3, 3 ½, 4, 4 ½ , 5 and 6 year-olds. At first years, between 2 and 4, in order to observe the rapid language development and the related structural acquisitions better, six month intervals in participants' age groups were arranged. In 5 and 6 years, this range was arranged to one year as the language acquisition slows down in these ages.

To find out if there is an underlying organization to the differential use of the verb-tenses and the verb morphological structure, the usage frequency of each verb-tense category within Story generation (with an age appropriate picture sequence), Story telling or Structured play (with home inside and outside resembling toys) tasks was obtained. The contextual usage frequency differences in verb-tense expressions were also studied. The dual impact of age and context, on verb-tense production was uncovered.

The present study differs from the previously conducted ones in the way that, the future reference, compound tenses and the structure of all used tenses were investigated as an addition to all indicative and desiderative tenses. By researching the children at 2 years old, this study was a complex one to conduct. However, the

results are useful while our language hasn't been investigated so deeply for the verb acquisition issue as much as done for European languages.

3.3 Scope of Grammatical Categories for the Present Study

Tense refers to the relating of the time of the referent situation to either the time of the utterance or to the time of some other situation. Tense is the "grammaticalized expression of location in time".

In many cases the English tenses are "moods" or "verbal modes" in Turkish. In the present study, Turkish grammatical verb-tense was examined according to the following distinction:

3.3.1 Indicatives (Haber Kipleri)

Definite Past (Di'li Geçmiş Zaman) : "-dı" marker indicates past of direct experience. It is used in statements expressing an event or situation that has been consciously experienced by the speaker: *geldim, geldin, geldi, geldik, geldiniz, geldiler.* (Can be exemplified in English like: *I came, you came, he/she came, we came, you came, they came)*

Indefinite Past (Miş'li Geçmiş Zaman) : "-mış" marker indicates past of indirect experience. It is used for expressing information about events not directly experienced by the speaker. *gelmişim, gelmişsin, gelmiş, gelmişiz, gelmişsiniz,*

*gelmişler. (*Can be partly exemplified in English like: *I have come, you have come, he/she has come, we have come, you have come, they have come)*

Present Progressive (Şimdiki Zaman):"-ıyor" marker indicates progressive aspect and the ongoing of the referred event: *geliyorum, geliyorsun, geliyor, geliyoruz, geliyorsunuz, geliyorlar. (*Can be exemplified in English like: *I am coming, you are coming, he/she is coming, we are coming, you are coming, they are coming.)*

Aorist/ Present (Geniş zaman) : "-(a)r" marker indicates the states of affairs that are within the realm of the possible, the potential acts. *gelirim, gelirsin, gelir, geliriz, gelirsiniz, gelirler. (*Can be exemplified in English like: *I come, you come, he/she comes, we come, you come, they come)*

Future (Gelecek Zaman): "-ecek, -acak" markers indicate a presumptive modality, applied to future events *geleceğim, geleceksin, gelecek, geleceğiz, geleceksiniz, gelecekler(* Can be exemplified in English like*: I will come, you will come, he/she will come, we will come, you will come, they will come*)

3.3.2 Desiderative Tenses (Dilek Kipleri)

Modality distinctions refer to the expression in language of the subjective attitudes of the speaker in relation to an event that is being told about by the speaker. Turkish expresses modality through the inflectional category of mood :

Conditional (Dilek, "- sa"): *gelsem, gelsen, gelse, gelsek, gelseniz, gelseler.* (Can be exemplified in English like: *If I come ,If you come,If he/she comes, If we come, If you come,If they come)*

Necessity (Gereklilik, "-malı"): *gelmeliyim, gelmelisin, gelmeli, gelmeliyiz, gelmelisiniz, gelmeliler.* (Can be exemplified in English like: *I should come, you should come, he/she should come, we should come, you should come, they should come)*

Optative (İstek, "-a") : *geleyim, gelesin, gele, gelelim, gelesiniz, geleler.* (Can be partly exemplified in English like: *I wish to come, you wish to come, he/she wishes to come, we wish to come, you wish to come, they wish to come)*

Imperative (Emir) : *-------, gel, gelsin, ---------, gelin(iz), gelsinler.* (Can be exemplified in English like: *-----, you come, he/she comes, -------, you come, they come)*

3.3.3 Compound tenses (Bileşik Zamanlı Eylemler)

These are the verbs inflected with two tenses at the same time. Firstly inflected of these, can be any tenses or modal verbs, the other inflection will be one of the participles –idi, -imiş, -ise. ("Ekfiil" but here these participles act as a second tense marker because they are inflected to previously inflected verb stems.)

The imperfect (hikaye) compound tense: "idi" marker inflecs to already inflected verb stems. *Geldiydim, gelmiştim, gelecektim, geliyordum, gelirdim, gelmeliydim,*

gelseydim. (Can be exemplified in English like:- *gelirdim – I would come, gelecektim – I was going to come....)*

Narrative (rivayet) compound tense: "-imiş" marker inflects to already inflected verb stems except to definite past tense. *Gelmişmiş, gelecekmiş, geliyormuş, gelirmiş, gelmeliymiş,* gelseymiş. (Can be exemplified in English like: gelmişmişim : *I had come, I have had come.)*

Conditional (şart) compound tense: "-ise" marker inflecs to already inflected verb stems except to conditional and optative desiderative tenses. *Gelmişse, gelecekse, geliyorsa, gelirse, gelmeliyse.* (Can be exemplified in English like: *geleceksem: If I am going to come)*

Unclassifiable tenses : Under the scope of this research, if any usage of tenses, other than the above mentioned tenses and modal verbs were faced, then those were collected under this heading, as a different category : *geliyormuştular, gelmişmiştim* ...and the like.

All the above mentioned tenses and modal verbs were investigated according to usage of the main tense participles. All had two categories "ideal" and "different" usages, based mainly on the nature of the tense participle. The local language usage differences (like *alak, yapıyi* instead of alalım, yapıyor).., different usages due to pronounciation (like soruyo, bakdı) and any other possible different usages than the ideal Turkish grammar, were only taken into consideration if the difference occurred on the tense participles. In this case if a child used expressions like *depti (instead of tepti),* those were considered correct.

The negative suffixes (-me, ma) or question suffixes (-mı, mi) were not considered in the classification.

3.3.4 Verb Structure / Morphology (Fiil Yapısı)

In the second part of the research, all conjugated verb stems were investigated according to its grammatical structure. In Turkish, verbs can be either basic, derived or combined verbs.

Morphologically Simple Verbs (Basit/Kök/Asıl Eylemler): These are the real verb stems, they don't have derivation participles other than number, person and tense inflections: *Gel-di-m, oku-ma-mış, ara-r-sa...*

Morphologically Derived Verbs (Türemiş Eylemler): Verbs derived from nouns,reflections or other verb predicates by the addition of some special derivation suffixes and negative particles (yapım ekleri, çatı ekleri, olumsuzluk ekleri) like –le, -leş, -len, -irge, -de, -(i)r, -kir, -ele, -se, ...etc, like *üf-le-dim, yad-ırga-n-dı, dert-leş-tik, sivri-l-di)*

Morphologically Complex Verbs (Bileşik Eylemler): Verbs that are derived by the combination of two or more words, either written together or separately, like *kalkabilmek, yatıveririz, gideyazdı, inandım gitti, bakakalmış, yardım ettiler, boş vermek, yan gelmek, yüz vermek...*).

3.4 Research Questions and Hypotheses

As a general point of expectation, the 2 to 6 year-old Turkish preschoolers acquire morphologically simple structures earlier than morphologically more complex structures so the general trend in verb-tense production frequency is the complex structure usage frequency inceases by age as a result of cognitive maturation and experience.

In the light of the reviewed studies and the obtained descriptive data concerning a wide age range of participants, who are controlled strictly for gender, age and maternal education level differences, the present study aimed at enlightening the following questions , and the following hypotheses appear warranted:

1- Are there any age differences in the acquisition and production of verb-tense categories among Turkish preschoolers?

Hypothesis 1: 2 and 6 year-olds differ in the production of verb-tense forms.

2- Are there any context based differences in the production of verb-tense categories among Turkish preschoolers?

Hypothesis 2 : The most verb-tense usage is triggered in Structured play context.

Hypothesis 3 : The least verb-tense usage is triggered in Story generation context.

Hypothesis 4 : Indefinite past tense is most frequently produced in Story telling context.

3- Are there any age together with context based differences in the acquisition and production of verb-tense categories among Turkish preschoolers?

Hypothesis 5 : 5 and 6 year-olds use more frequent verb-tense in Structured play context.

4- Are there any developmental differences in the basic morphological structure of produced tensed verbs among Turkish preschoolers?

Hypothesis 6 : The structure of tensed verbs is simple in 2, 2 ½ year-olds versus the derived and complex structure of tensed verbs produced by 5 and 6 year-olds.

The present study secondarily aimed at generally investigating the possible productions of verb-tense forms differing from the ideal grammatical usages. Therefore the fifth research question is:

5- Are there differences among verb-tense classes in the usage of grammatically different tenses than the grammatically ideal usages?

Hypothesis 7 : Imperative verb tense is used less differently than all other indicative, desiderative and compound tenses.

3.5 Pilot Study

In order to avoid possible mistakes that were not taken into consideration in the theoretical brainstorming phase, three pilot study sessions were conducted prior to the real testing process. These sessions were conducted in order to improve the original data collecting applications more professionally.

Pilot study sessions were conducted with 2, 4 and 6 year-old children, 2 boys and one girl. The applications took place in the same room, structured for this aim. Sessions were recorded by a video camera (Panasonic VHS Movie camera NV – M3500) intended for later discussion of all METU Language Development Team researchers together.

At the end of the discussion the timing of all sections, the presentation order, style and number of story pictures, portion of toys, general instructions of the application were improved.

In story generation section, initially six story pictures were presented to the child. Researcher opened them individually, one by one. Then placed them side by side by giving similar instructions. However, number of story pictures were realized to be excessive. Therefore, one of the most resembling story pictures, were omitted from the sequence. The presentation style is also changed to presenting the cards one by one. After the presentation of the first card, the researcher was decided to introduce and tell it in a standard manner while leaving the remaining pictures

closed. Then the second card was decided to be presented to the child and placed just on the top of the initial card, in order to avoid the child's confusion. After child talks about the third picture was presented and put next to the second one. The fourth and fifth pictures were also presented in the same manner and placed under the second and fourth pictures, in the form of a rectangle.

The story telling section in the pilot study started with the instruction " I want you to tell me a story that you already know or make up out of your own mind. It can be about anything that you want". Some of the pilot study participants had difficulty in initiating to tell a story. After the pilot studies, the researchers decided to remind such children mostly known story names so following instruction was added finally to the original one : "Look there are lots of stories. For example Snow-white and Seven Dwarfs, Red Riding Hood, Pinocchio, Cinderella, Sleeping Beauty and Cat with Boots ...you can tell whichever you want, or tell completely a different story that you know or can remember now. If you are ready, I am listening to you."

The play section at first, was conducted with numerous toys and they were presented to the child in a toy box. The researcher instructed: "Now, let's play a toy-game with you. You can play with them however you want. I want you tell me what happens while you are playing." However, some pilot study participants preferred playing with them in mutism. Therefore, the researchers decided to structure the play section with decreasing the number of toys and giving them in the form of a house. The time was also limited to 20 minutes for this task and the total application session was decided to be limited in 45 minutes.

Consequently, the pilot study indicated that all these tasks were appropriate for 2 to 6 year-old children and were decided to be used as a measure of verb-tense production context. After all the pilot studies and related discussions and corrections are over, the real study started.

CHAPTER IV

METHOD

4.1 Subjects

The participants in this study included a total of 96 preschool children ranging in age from 2 to 6 years. The study conducted with 12 children in each age group including 2, 2 ½, 3, 3 ½, 4, 4 ½ , 5, and 6 year-olds. Girls and boys were equally assigned to each age group, so the data includes speech samples from forty-eight girls and forty-eight boys, equally.

All children were assigned to each group according to their age, gender and their maternal education level. Parents indirectly teach language to young children by being models and by modifying their speech to baby talk. So, children spontaneously acquire language on the basis of the input they receive (Finegan, 1994). Maternal educational level, also effecting the family income, has influences on developmental performance of children. It shapes the variations in the environment and experiences of children including the quantity of language that they hear, availability of material resources that can influence child development (the mother's academic competence, her attitudes toward education, knowledge and beliefs about child development and her overt behavior). Mother's educational

achievement might affect the characteristics of the child-directed language that she uses, independently or in conjunction with individual differences in maternal communicative style. In a study, three levels of maternal education were compared to determine whether children's mean length of utterance in morphemes, number of different words, total number of words and percentage of correct consonants differed according to the educational level of the children's mothers. The results showed significant linear trends in differences in mean length of utterance in morphemes, number of different words, total number of words (Dollaghan et al.,1999).

Keeping such important effects in mind, as this is a descriptive study, mothers' education level, was taken into account as a control variable in subject selection criteria. Maternal education level was divided into three groups. Primary school graduates constituted one group, secondary and high school graduates were the second group, and university graduates constituted the third group.

Distribution of subjects in each group according to their age, gender, and mothers' education level is presented at Table 1.

All participants were recruited from private, public or state preschools, kindergartens and homes located in Ankara (Yenimahalle, Keçiören, Çankaya, Dikmen, Yüzüncü Yıl, Balgat, Eryaman, Yıldız, Bahçelievler, Emek, Kızılay). In order to control the effects of economic status, all children were selected from families having a middle-income level depending on the reports of parents and/or teachers in demographic information form.

Table 1.

Distribution of subjects in each group according to their age, gender, and mothers' education level

	Children age-groups															
Mothers' education level ↓	**2**		**2 ½**		**3**		**3 ½**		**4**		**4 ½**		**5**		**6**	
	M	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**M**	**F**
Primary school	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Secondary & High school	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
University	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
TOTAL	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**
	12		**12**		**12**		**12**		**12**		**12**		**12**		**12**	

To obtain a more stable language environment, the subjects were native Turkish speakers, raised in Turkish speaking environments. Previous researches found out that the age at which the vocabulary reaches ten words is a more stable indicator of true language development for 24 month-olds (Dönmez, 1986). Therefore, 2 and 2 ½ year-olds, having at least ten words, were allowed to participate to the study. This constituted the inclusion criteria for 2 and 2 ½ year-olds. The inclusion criteria for 3, 3 ½ , 4, 4 ½ , 5 , 6 year-olds depended on teacher and/or mother reports.

All children were eligible if they had no known or suspected sensory, intellectual, speech, language, hearing or learning deficits or developmental delays in any areas, based on reports of teachers and parents.

The research included 144 children and initial data comprised 144 children's speech samples however, as a result of limited time, 96 randomly selected of the applications, only controlling for age and gender distribution, were utilized for the present study.

4.2 Materials

"Informed Consent Form" was used to get parental and/or institutional permission before testing the child in order to provide the parents and/or the institutions with general information about the aims and the process of the study (Appendix A). All mothers read and signed up this form. The "Demographic Information Form" was also used to obtain demographic information (Appendix B). All the information in Demographic Information Form, was collected from either the child's mother or teacher and the information gathered by this form, was utilized as subject selection criteria.

In order to obtain speech samples, three sections were developed:

In the first section, *Story generation*, a five-picture story sequence, about some potential and conflicting situations that can occur in a birthday party, was shown to the child in order to elicit a story (Appendix C). The 18 X 24 cm colored pictures drawn by a professional artist by using an age appropriate style for the proper perception of participants, with the intention to cover all the grammatical categories that the research aims to investigate.

In the second section, *Story telling*, the child was prompted to tell a story already known or a story constructed by himself/herself.

In the last section, *Structured play*, home inside and outside environment legos were used in order to facilitate spontaneous speech. A plane, colored partially like the indoors of home, a garage and an animal garden were prepared with supplementary home furniture legos (a TV set, chair, sofa, an armchair, a table, a living room plant, a dog, a kitchen washbasin, an oven, a dishwasher, a lavatory, a bathroom sink and a bath tub, a bed, a long lamp), animal and farm legos (straw buckets, a cow, a horse, a tree and a car). Legos used in Structured play session photograph is available in Appendix D.

The predetermined set of probes used in all sections in order to elicit speech samples, together with research instructions, are available in Appendix E. At the end of all three sections children were given small stickers or pictures as rewards. These pictures were selected carefully to avoid any possible harmful or prohibited content.

A handheld tape-recorder to record sessions (Sony TCM – 359V), a chronometer for timing (Casio HS-3) were also used.

Conversations all throughout three sections, were transcribed by the experimenter and 5 other members of the METU Language Develeopment Team (METU LDT), from the audiotapes. After long hand transcriptions were completed, prior to grammatical analyses the sectional word counts of the recordings were

completed. After the deletion of directively probed parts and continuous repeatings of childrens' speech, the analyses of intended grammatical structures, tense and modal verb usage, were done. The analysis codings were done by using a Data-analyzing Sheet (Appendix F) independently by the experimenter, and by a Turkish language expert in order to judge interrater reliability.

4.3 Procedure

Between July 2001 and November 2001, the data were collected by the researchers of Middle East Technical University Language Development Team (METU LDT). All potential participants' teachers or mothers were given the consent and demographic information forms at the beginning of the research. After obtaining informed consent either from teachers or mothers, and fully completing the demographic information form, the children were seen individually for about a 30 - 45 minute section in a separate and quiet room in his/her preschool / kindergarten or home, by 6 of the 8 researchers from METU Language Development Team. Each child completed all three sections in one session. All the sessions were audio taped.

The setting in either the child's home or school, included a table and two chairs for the researcher and the participant. Prior to the process, a short period of conversation, that aims to create a positive and relaxing atmosphere between the child and the researcher, took place. The child was told that he/she had the right to terminate the testing session if he/she does not want to continue. About ten potential participants of the study quitted before completing the whole session.

If the child's attention seemed to be wandering during the session the researcher stopped the testing and chatted or played with the child for a period of time.

Sessions consisted of three sections:

Section 1 – Story generation

The story pictures for the story telling, via a colored five-picture sequence, presented the task. The task was introduced by saying each child:

" Now we will play a story telling game from pictures. I am going to show you five pictures. Initially, I will look at the first picture and tell you about it. Then you will tell me the others. Are you ready?"

Then the picture was shortly described as the initial phase of the story, as follows:

" This child has a birthday party. They had started to make preparations in the early morning. While his father was hanging up the ornaments in the sitting room, the child was helping him via blowing up the balloons. His mother had prepared the dining table and she was bringing the fruits."

After telling about the first story picture, following instructions were given:

"Now it is your turn to look at the pictures carefully. Now I will show you four pictures. I want you to make up a story about these pictures and tell it to me. Did you understand what to do? If so, when you are ready we can begin."

"Look this is our first story card. According to you, what happens here?"

According to each story card, the last instruction was modified.

A predetermined set of probes were used. Research instructions to direct the child in a standardised manner and probe questions to elicit conversational sample whenever necessary, were defined in Appendix E.

If the child had difficulty in beginning to talk, the interviewer could ask, "What happens in these pictures?" or the researcher could start to talk about the first picture in one or two sentences and ask the child to continue. Once the child started to tell the story, the experimenter avoided any verbal intervention. Only back channelling acknowledgements such as "uh-huh" were used.

If the child responded to the first prompt by beginning the narrative but stopped two or three utterances later, the interviewer prompted the child to continue by saying,

" Keep going, keep going, I really want to know the story".

If the child's response to the previous prompt did not include expressions such as, "And that was the end of the story", the examiner would repeat the last utterances of the child. The same probe questions were used for all cards of the story sequence.

Unless necessary, without giving a break, second section was presented to the child :

Section 2 – Story telling:

" I want you to tell me a story that you already know or make up out of your own mind. It can be about anything that you want. Are you ready? Begin."

If the child had difficulties in initiating the story, the researcher also told :

"Look there are lots of stories. For example Snow-white and Seven Dwarfs, Red Riding Hood, Pinocchio, Cinderella, Sleeping Beauty and Cat with Boots ...you can tell whichever you want, or tell completely a different story that you know or can remember now. If you are ready, I am listening to you."

If the child gave no response, says "I can not", has perplexed expression, and so forth, the researcher repeated the instructions.

If child responded with one sentence or story without resolution, "Remember, I want you to tell me a whole story." was said.

If the child still did not expand the story, including addition of a resolution, "Tell me more about what happened" prompt was used. When child completed the story, it was said that, " I really like that story! You did a good job!".

Section 3 – Structured play

A free play session, structured with legos, was prepared.

" Now, lets play with toys. Look how nice Legos. This home belongs to this family! Now take them. You can play with them however you want. All I want you to do is, to tell me what happens in your play. I will tell you when to stop. Did you catch what to do? Do you have any questions?"

While the child told the story, if he/she asked anything about the ongoing of the story or wanted cooperation from the researcher, the researcher responded saying that : " Look, this is your play. This is your story, I really do not know. Why not thinking a bit more on the issue?".

The Lego structure created by the child underlied the prompt questions of the researchers. It was avoided to direct the child's responses, so questions were generated spontaneously and covered the general aims of the study.

Application of all three sections lasted about 30 to 45 minutes. After the children completed the session, they were rewarded with small stickers.

4.4 Data Analyses

All sessions were audio recorded and subsequently transcribed verbatim. All utterances in the first and second sections but at most the 20-minute duration utterances of the last section were taken into the analyses scope.

The occurence and frequency of correct and differing usage of temporal, desiderative and compound verb inflections and the structures of the used inflected verbs, were gathered on the Data-analyzing Sheet (Appendix F). For the data coding of tenses and morphology of verb usage of children, the data-analyzing sheet comprised three pages and had four parts. The aim of the analysis was to uncover the acquisition of tense and modal verb usage among Turkish preschoolers and syntactic structure of those used verbs. Especially calculating the frequency of both the ideal grammatical usage (the ideal usage of the tense markers syntactically) and the different usages of the same tense markers as a result of such learning, environmental differences in those usages or the possible ease in pronunciation. In Turkish, the main part of the grammatical structure, that constructs the verb as a tense and gives the syntax and meaning of tense and modality, is the inflection. These are the tense marker suffixes, that are added at the end of the verb stems,

derived or combined verbs. All verbs used by the children throughout the sessions, were grouped according to the divisions of Turkish grammar as described by Gencan (2001) and examples of tense conjugations and main parts of the grouping principles are summarized in Chapter III. If any unclassifiable utterance of grammar was used, an unknown grammatical inflection in Turkish language structure, like "*koy-u-yor-muş-tu-lar*", it is grouped under "others" heading, for future investigations.

In the first part, the analyses were concerned with frequency of usage, the difference or idealness in the tense inflections. By such a differentiation, in the first part of the analyzing sheet, all basic and compound tenses (geniş zaman-aorist : "*gel-i-r-sin*", şimdiki zaman-present progressive: "*gel-iyor-sun*", gelecek zaman-future: "*gel-ecek-sin*", di'li geçmiş zaman-definite past: "*gel-di-n*", miş'li geçmiş zaman- indefinite past: "*gel-miş-sin*"), desiderative tenses (dilek-conditional: "*gel-se-n*", istek-optative: "*gel-e-sin*", gereklilik-necessity: "*gel-meli-sin*", emir-imperative: "*gel*"), and compound tenses (tenses that have double tense inflections: hikaye-imperfect compound: "*gel-miş-tin*", rivayet-narrative compound: *gel-ecek-miş*, şart-compound conditional: "*gel-di-y-sen*" were grouped whether they were used correctly or used in a different manner. The correct part included ideal usage of the tense markers/suffixes such as "*yap-ı-yor-um*", without considering the possible differences in the root of the verb like "*dat-mış*". Only the inflected part was taken in consideration so the former two usages were grouped under the correct usage division whereas usages like "*kalk-ı-yo*" or " *kapat-ca-z*" were gruped as different usages.

In the second part of the data-analyzing sheet, all verbs classified in the first part, were gruped according to their syntactic structure. A three-way grouping was done whether the used verb was morphologically simple , derived or complex verbs. In this section, only the syntactic frequency was investigated rather than the idealness or difference in the tense usage.

All groupings were done according to application sections seperately. After writing all the inflected or grouped words in the related places on the analyzing sheet, the experimenter counted all of the usages according to the groups.

4.5 Statistical Analyses

After the verbatim analyses, the statistical analyses considering the interrater reliability (A Pearson product-moment correlation to determine the similarity between the two raters' judgements) and a series of analyses considering the frequency comparisons, Repeated Measures Analysis of Variance(ANOVA) and necessary post hoc tests were constructed over the usage percentages of the descriptive data were done by using the SPSS. (Statistical Package For Social Sciences, Version 9.0, for personal computers).

CHAPTER V

RESULTS

5.1 Reliability Measures

To obtain interrater reliability, also a Turkish language expert coded and analyzed 16 randomly selected participants' transcriptions. All codings were done on four main headings: Indicatives, desideratives, compound tenses and verb structures.

Only the productive speech were taken into consideration throughout the analyses. The unclassifiable tenses category was not included in the analyses however, children used unclassifiably tensed verbs like *istermişti*, *koşuyormuştular*, *yıkalsık*, or verb-resembling adapted name expressions like *"bak bu şişirmek"* for "*balon*" or "*bu oturmak*" for "*sandalye*". (Can be partly exemplified in English as : *Look this is to blow up!* for *balloon* , or, *They were have had been running – koşuyormuştular)*

The ideal and different verb usages were classified independently but, were taken into the analyses together. However, the percentage of different usages were calculated and mentioned.

Since data were not categorical, Kappa Coefficients could not be calculated. Thus several correlations were computed between investigator's scoring and the independent linguist's scoring. Pearson product-moment correlations with two tailed significance were calculated to determine how similarly the raters judged each of the communicative analyses. The comparisons were conducted on both the contextual and the total basis. The raters were in .99 aggreement for the total of indicatives, .99 aggreement for all desiderative tenses, .99 agreement for compound tenses totally, 1.00 agreement for simple verb morphology, .99 agreement for derived verb morphology and .98 agreement for complex verb morphology classification. The agreement was .99 for the overall verb usage. The lowest interrater reliability was for desiderative conditional tense usage (.86). All correlations were significant at 0.01 value. The mean interrater reliability was found as .98 (range .86 /1.00) which means there is high agreement between raters. Table 2 presents the interrater reliabilities of the grammatical structures in detail.

Table 2. Interrater reliabilities of grammatical analyses

Grammatical Categories		Interrater Reliability r			
		I	II	III	Total
Indicatives	Definite Past	.99	.99	.98	.99
	Indefinite Past	.99	.99	.99	1.00
	Present Progressive	.99	.97	.99	.99
	Aorist	.88	.93	.97	.98
	Future	.98	.99	.99	.99
	All Indicatives	.99	.99	.99	.99
Desiderative Tenses	Conditional	.84	.88	.96	.86
	Necessity no constant value	-	-	-	-
	Optative	.66	.80	.99	.99
	Imperative	.97	.99	.99	.99
	All Desideratives	.98	.97	.99	.99
Compound Tenses	Imperfect	.99	1.00	.99	.99
	Narrative	.99	.93	.98	.99
	Conditional	1.00	1.00	-	1.00
	All Compound Tenses	.99	.99	.99	.99
Verb Structures	Basic Verbs	.99	.99	1.00	1.00
	Derived Verbs	.99	.99	.99	.99
	Complex Verbs	.92	.96	.99	.98
	Total Verb-tense Classification	.98	.99	.99	.99

5.2 Results of Descriptive Analyses

A series of 8 (age groups of subjects) X 3 (different activity contexts) Repeated Measures Analysis of Variance (ANOVA) were conducted. All analyses were performed in order to uncover the effects of age and context, on the frequency of usage of the indicative, desiderative and compound tenses and the structures of the used verbs. Since the time children spent in each activity and the total amount of speech they produced changed greatly, all the statistical analyzes were conducted based on the percentages of the verb usage out of total word usage. This was preferred in order to reach more trustworthy results than that of the ones based on only the number of usage frequencies of the verbs.The contextual usage frequencies, means and the range of minimum-maximum scores are summarized in Appendix G.

The statistical analyses included four main headings of grammatical structures: Indicative tenses, mood tenses, compound tenses and the basic morphological structures of the verbs used. In each category, contextual effects of the application sections and the percentage-based tense usage of the children, together with the developmental effects of age were examined. Repeated Measures ANOVA was conducted in a serial manner in order to test the equality of the means and descriptively investigate all the tense usage.The analyses were constructed both for the contextual usage of tenses independently, and for the main tense groups as a whole. The significance level was set to .05 in all analyses. The significant findings were summarized in Appendix H.

In order to find out the source of difference, the significant context main effects were re-examined by Paired Samples T-Test, significant age main effects were re-analyzed by Tukey and the significant interaction effects were re-analyzed by Scheffé post-hoc comparison tests. Post-hoc results revealed more precise significant mean differences over the findings.

After all the statistical analyses out of total word usage were reported, age related verb-tense usage percentages were graphically displayed and interpreted. This uncovered the percents of which age children used which verb-tense classes or verb structures more frequently, less frequently or not used at all.

5.2.1 Analyses of Indicative Tenses

5.2.1.1 Definite Past Tense Results

(Belirli /di'li geçmiş zaman : "-dI" : geldim – *I came*)

The different usage of definite past tense comprised 1.77 percent of the total usage of definite past tense all over the application.

The percent-means of childrens' definite past tense usage were depicted in Table 3.

Table 3. The percent-means of childrens' definite past tense usage out of total word usage

Age Groups	Story generation	Story telling	Structured play	Age Mean
2,00-2,05	3,02	12,00	7,96	7.66
2,06-2,11	2,67	8,29	6,15	5.70
3,00-3,05	2,82	4,22	4,48	3.84
3,06-3,11	,70	4,99	2,48	2.72
4,00-4,05	2,06	2,00	3,82	2.63
4,06-4,11	1,56	2,93	3,72	2.74
5,00-5,11	1,70	2,39	3,74	2.61
6,00-6,11	1,67	1,35	1,54	1.52
Context Mean	2,02	4.77	4,24	3.68

The Repeated Measures ANOVA conducted on definite past tense production revealed significant main effects of context, Wilks' $\Lambda = .76$, $F(2, 87) = 14.15$, $p = .000$, and age, $F(7, 88) = 2.17$, $p = .045$.

A paired samples t-test was conducted to find out the source of difference in definite past tense production. The results indicated that subjects used significantly less definite past tense on the story generation ($M = 2.03$; $SD = 2.66$) than they did on the story telling ($M = 4.78$; $SD = 11.79$) and structured play ($M = 4.24$; $SD = 4.35$). $t(95) = 2.37$, $p < 0.05$; $t(95) = 5.03$, $p < 0.05$; $t(95) = .47$, $p = .641$, respectively.

Post-hoc Tukey test uncovered that 2 year-old children differed from 6 year-old children, in the production of definite past tense. However, the interaction between context and age failed to reach statistical significance, Wilks' $\Lambda = .85$, $F(14, 174) = .74$, $p = .415$. The ANOVA results were displayed in Table 4.

Table 4. Analysis of Variance for definite past tense out of total word

Source	df	Mean square	F	Sig.
Context (definite past)	2	203,70	14,15	< .05
Error	87	46,35		
Age	7	147,50	2,17	< .05
Error	88	68,10		
Context x Age	14	34,48	1,04	> .05
Error	174	46,35		

5.2.1.2 Indefinite Past Tense Results

(Belirsiz /miş'li geçmiş zaman : "-mIş" : gelmiş –*I have come*)

The different usage of indefinite past tense comprised .28 percent of the total usage of indefinite past tense all over the application.

The percent-means of childrens' indefinite past tense usage were depicted in Table 5.

Table 5. The percent-means of childrens' indefinite past tense usage out of total word

Age Groups	Story generation	Story telling	Structured play	Age Mean
2,00-2,05	1,49	7,01	1,11	3,20
2,06-2,11	3,89	3,89	,81	2,86
3,00-3,05	6,22	8,42	3,44	6,03
3,06-3,11	9,73	7,19	8,30	8,41
4,00-4,05	10,92	12,79	7,86	10,52
4,06-4,11	9,45	10,80	5,13	8,46
5,00-5,11	7,38	20,49	13,06	13,64
6,00-6,11	5,85	16,12	13,04	11,67
Context Mean	6,87	10,84	6,59	8,10

The Repeated Measures ANOVA conducted on indefinite past tense production revealed significant main effects of context, Wilks' $\Lambda = .91$, F (2, 87)= 4.36, p=.016, and age, F (7, 88)= 5.00, p=.000.

A paired samples t-test was conducted to find out the source of difference in indefinite past tense production. The results indicated that subjects used significantly more indefinite past tense on the story telling (M =10.84, SD= 13.77) than they did on the story generation (M=6.87, SD= 5.90) and on the structured play (M=6.59, SD=8.67) : $t(95) = 2.87$, $p < 0.05$; : $t(95) = 2.75$, $p < 0.05$ and $t(95) = .33$, $p = .742$, respectively.

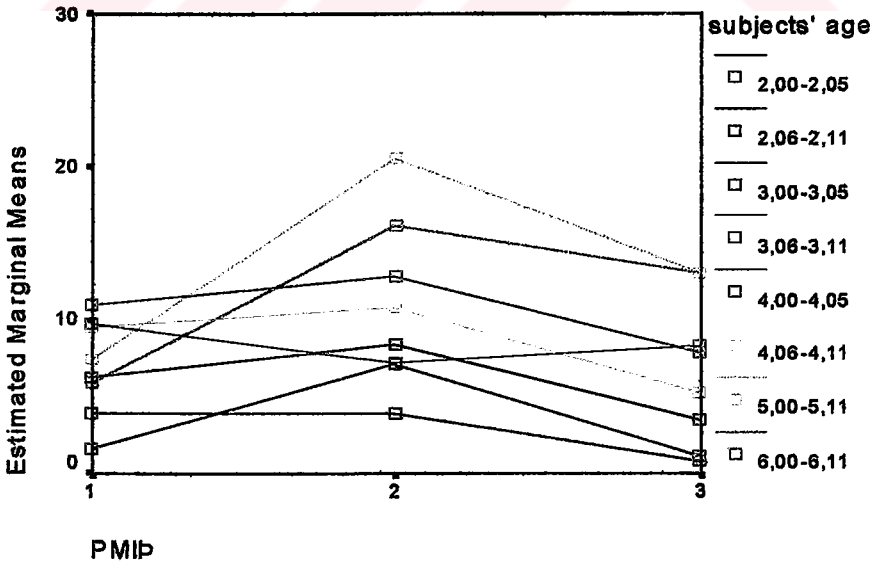
Post-hoc Tukey test uncovered that 2 year-old children differed from 5 and 6 year-old children, in the production of indefinite past tense. 2 ½ year-old children differed from 4, 5 and 6 year-old children, and 3 year-old children differed from 5 year-old children in the production of indefinite past tense. The interaction

between context and age also reached statistical significance, Wilks' Λ = .65, F (14, 174) =. 3.00, p=.000. So, Scheffé post-hoc comparison test was utilized. The critical value (5.09) of Scheffé exceeded the contextual mean differences at age five. This meant that, indefinite past tense usage was better in the story telling than that in the structured play. Both of these tasks were better than the story generation. ANOVA results are displayed in Table 6, and Figure 1 depicts the interaction effect plot.

Table 6. Analysis of Variance for Indefinite Past Tense out of total word

Source	df	Mean square	F	Sig.
Context (indefinite past)	2	541,96	4,36	< .05
Error	87	77,47		
Age	7	541,56	5,00	< .05
Error	88	108,29		
Context x Age	14	107,47	3,00	< .05
Error	174	77,47		

Figure 1. Interaction effect plot for indefinite past tense usage.



5.2.1.3 Present Progressive Tense Results

(Şimdiki zaman : "-Iyor" : geliyorum –*I am coming*)

The different usage of present progressive comprised 57.99 percent of the total usage of present progressive all over the application.

The percent-means of childrens' present progressive tense usage were depicted in Table 7.

Table 7. The percent-means of childrens' present progressive tense usage out of total word

Age Groups	Story generation	Story telling	Structured play	Age Mean
2,00-2,05	9,16	5,17	5,96	6,76
2,06-2,11	15,73	10,47	11,53	12,58
3,00-3,05	9,71	3,70	6,31	6,57
3,06-3,11	13,45	10,34	7,74	10,51
4,00-4,05	10,93	10,09	6,42	9,15
4,06-4,11	11,85	8,19	8,24	9,43
5,00-5,11	12,13	3,31	7,26	7,56
6,00-6,11	15,02	,94	8,59	8,18
Context Mean	12,25	6,53	7,76	8,85

The Repeated Measures ANOVA conducted on present progressive tense production revealed significant main effect of context, Wilks' $\Lambda = .70$, $F(2, 87) = 18.56$, $p = .000$, but age main effect was not significant, $F(7, 88) = 1.44$, $p = .200$.

A paired samples t-test was conducted to find out the source of difference in present progressive tense production. The results indicated that subjects used significantly more present progressive tense on the story generation (M=12.25, SD= 8.24) than they did on the structured play (M= 7.76, SD= 6.25) and on the story telling (M =6.53, SD= 9.72). : t(95) = 5.24, p <0.05; t(95) = 5.24, p<0.05 and t(95) = 1.19, p = .236, respectively.

The interaction between context and age also failed to reach statistical significance, Wilks' Λ = ,85, F(14, 174) = 1,09 , p=.374. The ANOVA results were displayed in Table 8.

Table 8. Analysis of Variance for Present Progressive Tense out of total word

Source	df	Mean square	F	Sig.
Context (present progressive)	2	870,49	18,56	< .05
Error	87	46,66		
Age	7	147,47	1,44	> .05
Error	88	102,45		
Context x Age	14	62,09	1,09	> .05
Error	174	46,66		

5.2.1.4 Aorist Results

(Geniş zaman: "-Ir" : gelirim –*I come*)

The different usage of aorist comprised 5.13 percent of the total usage of aorist all over the application.

The percent-means of childrens' present tense usage were depicted in Table 9.

Table 9. The percent-means of childrens' aorist usage out of total word

Age Groups	Story generation	Story telling	Structured play	Age Mean
2,00-2,05	,17	,00	,05	,22
2,06-2,11	,18	2,76	,75	1,23
3,00-3,05	,24	,90	,77	,64
3,06-3,11	,22	1,93	,87	1,01
4,00-4,05	,00	,34	,83	,39
4,06-4,11	,31	,40	,97	,56
5,00-5,11	,00	,61	,59	,40
6,00-6,11	,15	1,00	,48	,54
Context Mean	,16	,99	,66	,60

The Repeated Measures ANOVA conducted on aorist production revealed significant main effect of context, Wilks' $\Lambda = .66$, F (2, 87)= 22.80, p=.000, but age main effect was not significant, F (7, 88)= 1.19, p=.316.

A paired samples t-test was conducted to find out the source of difference in aorist production. The results indicated that subjects used significantly less aorist on the story generation (M=.16, SD= .45) than they did on the structured play (M= .66, SD= .79) and on the story telling (M =.99, SD= 3.13). : $t(95) = 2.62$, $p < 0.05$; $t(95) = 6.45$, $p<0.05$ and $t(95) = 1.05$, $p = .297$, respectively.

The interaction between context and age also failed to reach statistical significance, Wilks' Λ = ,81, $F(14, 174) = 1,35$, p=.185. The ANOVA results were displayed in Table 10.

Table 10. Analysis of Variance for Aorist

Source	df	Mean square	F	Sig.
Context (aorist)	2	17,01	22,80	< .05
Error	87	3,28		
Age	7	4,77	1,19	> .05
Error	88	4,01		
Context x Age	14	3,29	1,35	> .05
Error	174	3,28		

5.2.1.5 Future Tense Results

(Gelecek zaman : "-EcEk" : geleceğim – *I will come*)

The different usage of future tense comprised 73.31 percent of the total usage of future tense all over the application.

The percent-means of childrens' future tense usage were depicted in Table 11.

Table 11. The percent-means of childrens' future tense usage out of total word

Age Groups	Story generation	Story telling	Structured play	Age Mean
2,00-2,05	1,73	25,82	2,02	9,86
2,06-2,11	,35	1,76	2,63	1,58
3,00-3,05	,37	9,42	,78	3,52
3,06-3,11	,35	1,78	2,63	1,59
4,00-4,05	,36	,43	1,82	,87
4,06-4,11	1,48	,80	1,83	1,37
5,00-5,11	,13	1,05	1,21	,80
6,00-6,11	,34	,19	1,00	,51
Context Mean	,64	5,16	1,74	2,51

The Repeated Measures ANOVA conducted on future tense production revealed significant main effect of context, Wilks' $\Lambda = .77$, $F(2, 87) = 12.92$, $p = .000$, but age main effect was not significant, $F(7, 88) = 331$, $p = .316$.

A paired samples t-test was conducted to find out the source of difference in future tense production. The results indicated that subjects used significantly less future tense on the story generation ($M = .64$, $SD = 1.70$) than they did on the structured play ($M = 1.74$, $SD = 2.31$) and on the story telling ($M = 5.16$, $SD = 29.73$) : $t(95) = 4.69$, $p < 0.05$; $t(95) = 1.50$, $p = .137$ and $t(95) = 1.12$, $p = .265$, respectively.

The interaction between context and age also failed to reach statistical significance, Wilks' $\Lambda = .83$, $F(14, 174) = 1,25$, $p = .243$. The ANOVA results were displayed in Table 12.

Table 12. Analysis of Variance for Future Tense

Source	df	Mean square	F	Sig.
Context (future)	2	533,07	12,92	< .05
Error	87	294,22		
Age	7	347,88	1,17	> .05
Error	88	298,64		
Context x Age	14	303,49	1,25	> .05
Error	174	294,22		

5.2.2 Analyses of DesiderativeTenses (Dilek Kipleri)

5.2.2.1 Conditional Tense Results

(Dilek-Şart : "-sE" : gelsem – *If I come*)

The different usage of conditional tense comprised 73.08 percent of the total usage of conditional tense all over the application.

The percent-means of childrens' conditional tense usage were depicted in Table 13.

Table 13. The percent-means of childrens' conditional desiderative tense usage out of total word

Age Groups	Story generation	Story telling	Structured play	Age Mean
2,00-2,05	,21	,00	,00	,07
2,06-2,11	,00	,00	,30	,10
3,00-3,05	,00	,08	,48	,19
3,06-3,11	,00	,00	,54	,18
4,00-4,05	,22	,04	,15	,14
4,06-4,11	,00	,00	,30	,10
5,00-5,11	,00	,00	,07	,02
6,00-6,11	,08	,02	,06	,05
Context Mean	,06	,01	,24	,10

The Repeated Measures ANOVA conducted on conditional desiderative tense production revealed significant main effect of context, Wilks' $\Lambda = .88$, F (2, 87)= 5.95, p=.004, but age main effect was not significant, F (7, 88)= .72, p=.652.

A paired samples t-test was conducted to find out the source of difference in conditional desiderative tense production. The results indicated that subjects used significantly more conditional desiderative tense on structured play (M= .24, SD= .65) than they did on the story generation (M=.06, SD= .35) and on the story telling (M =.01, SD= .12) : t(95) = 2.28, p< 0.05 t(95) = 3.30, p< 0.05 and t(95) = 1.25, p = .215, respectively.

Likewise, the interaction between context and age failed to reach statistical significance, Wilks' Λ = .86, F(14, 174) =1.01 , p=.450. The ANOVA results were displayed in Table 14.

Table 14. Analysis of Variance for conditional desiderative tense

Source	df	Mean square	F	Sig.
Context (conditional)	2	1,32	5,95	< .05
Error	87	,19		
Age	7	,13	,72	> .05
Error	88	,17		
Context x Age	14	,25	1,01	> .05
Error	174	,19		

5.2.2.2 Optative Tense Results

(İstek : "-A" : geleyim – *I wish to come*)

The different usage of optative tense comprised 47.57 percent of the total usage of optative tense all over the application.

The percent-means of childrens' optative tense usage were depicted in Table 15.

Table 15. The percent-means of childrens' optative tense usage out of total word

Age Groups	Story generation	Story telling	Structured play	Age Mean
2,00-2,05	,33	3,12	1,79	1,75
2,06-2,11	,78	2,18	2,69	1,88
3,00-3,05	,44	1,29	1,82	1,10
3,06-3,11	,11	,29	1,56	,65
4,00-4,05	,48	,28	2,78	1,18
4,06-4,11	,13	,70	1,77	,86
5,00-5,11	,06	1,10	,70	,62
6,00-6,11	,13	,87	,55	,52
Context Mean	,31	1,23	1,71	1,08

The Repeated Measures ANOVA conducted on optative tense production revealed significant main effect of context, Wilks' $\Lambda = .68$, F (2, 87)= 20.20, p=.000, but age main effect was not significant, F (7, 88)= 1.73, p=.112.

A paired samples t-test was conducted to find out the source of difference in optative tense production. The results indicated that subjects used significantly less optative tense on the story generation (M=.31, SD=.74) than they did on the story telling (M =1.23, SD= 3.42) and on the structured play (M= 1.71, SD= 2.41) : $t(95) = 2.67$, $p< 0.05$; $t(95) = 5.59$, $p<0.05$ and $t(95) = 1.07$, $p = .287$, respectively.

Likewise, the interaction between context and age failed to reach statistical significance, Wilks' $\Lambda = .89$, $F(14, 174) = .78$, p=.691. The ANOVA results were displayed in Table 16.

Table 16. Analysis of Variance for Optative Tense

Source	df	Mean square	F	Sig.
Context (optative)	2	48,746	20,198	< .05
Error	87	6,186		
Age	7	9,598	1 ,732	> .05
Error	88	5,542		
Context x Age	14	5,174	,779	> .05
Error	174	6,186		

5.2.2.3 Necessity Tense Results

(Gereklilik : "-mAli" : gelmeliyim – *I should come*)

The different usage of necessity tense comprised 0 percent of the total usage of necessity tense all over the application.

The percent-means of childrens' optative tense usage were depicted in Table 17.

Table 17. The percent-means of childrens' necessity tense usage out of total word

Age Groups	Story generation	Story telling	Structured play	Age Mean
2,00-2,05	,00	,00	,00	,00
2,06-2,11	,00	,00	,00	,00
3,00-3,05	,00	,00	,00	,00
3,06-3,11	,00	,00	,00	,00
4,00-4,05	,00	,00	,00	,00
4,06-4,11	,00	,00	,02	,01
5,00-5,11	,00	,00	,01	,00
6,00-6,11	,00	,00	,00	,00
Context Mean	,00	,00	,004	,001

The Repeated Measures ANOVA conducted on necessity tense production did not reveal significant main effect of context, Wilks' $\Lambda = .98$, $F(1, 88) = 1.92$, $p = .169$, also the age main effect was not significant, $F(7, 88) = ,87$, $p = .535$.

Likewise, the interaction between context and age failed to reach statistical significance, Wilks' $\Lambda = .94$, $F(7, 88) = .87$, $p = .535$. The ANOVA results were displayed in Table 18.

Table 18. Analysis of Variance for necessity tense

Source	df	Mean square	F	Sig.
Context (necessity)	1	,005	1,923	> .05
Error	88	,003		
Age	7	,0002	,868	> .05
Error	88	,0003		
Context x Age	7	,002	,868	> .05
Error	88	,0003		

5.2.2.4 Imperative Tense Results

(**Emir** : "-": -gel! – *you come!*)

The different usage of imperative tense comprised 3.43 percent of the total usage of imperative tense all over the application.

The percent-means of childrens' imperative tense usage were depicted in Table 19.

Table 19. The percent-means of childrens' imperative tense usage out of total word

Age Groups	Story generation	Story telling	Structured play	Age Mean
2,00-2,05	8,13	7,56	12,77	9,49
2,06-2,11	2,72	1,67	5,72	3,37
3,00-3,05	2,00	1,74	3,95	2,56
3,06-3,11	,37	,85	2,52	1,25
4,00-4,05	,63	,17	2,96	1,25
4,06-4,11	1,46	1,20	4,64	2,43
5,00-5,11	,11	1,18	1,35	,88
6,00-6,11	,39	2,61	1,28	1,43
Context Mean	1,98	2.12	4,40	2,83

The Repeated Measures ANOVA conducted on imperative tense production revealed significant main effects of context, Wilks' $\Lambda = .73$, F (2, 87)= 16.44, p=.000, and age, F (7, 88)= 12.36, p=.000.

A paired samples t-test was conducted to find out the source of difference in imperative tense production. The results indicated that subjects used significantly more imperatives on the structured play (M= 4.40, SD= 5.38) than they did on the story telling (M =2.12, SD= 5.14) and on the story generation (M=1.98, SD= 3.66) : $t(95) = 5.68$, $p< 0.05$; $t(95) = 3.73$, $p< 0.05$ and $t(95) = .28$, $p = .779$, respectively.

Post-hoc Tukey test uncovered that 2 year-old children differed from all the children in the other age groups in the production of imperative tense. However, the interaction between context and age failed to reach statistical significance, Wilks' $\Lambda = .87$, $F(14, 174) = .87$, p=.592. The ANOVA results were displayed in Table 20.

Table 20. Analysis of Variance for imperative tense

Source	df	Mean square	F	Sig.
Context (imperative)	2	177,201	16,437	< .05
Error	87	13,071		
Age	7	285,902	12,355	< .05
Error	88	23,141		
Context x Age	14	13,969	,870	> .05
Error	174	13,071		

5.2.3 Analyses of Compound Tenses (Bileşik zamanlı eylemler)

5.2.3.1 Imperfect Compound Tense Results

(Hikaye/Öyküleme bileşik zamanı : kip1+ iDi : (gelirdim – *I would come*)

The different usage of imperfect compound tense comprised 24.09 percent of the total usage of imperfect compound tense all over the application.

The percent-means of childrens' imperfect compound tense usage were depicted in Table 21.

Table 21. The percent-means of childrens' imperfect compound tense usage out of total word usage

Age Groups	Story generation	Story telling	Structured play	Age Mean
2,00-2,05	,21	2,08	,02	,77
2,06-2,11	,00	,65	,01	,22
3,00-3,05	,35	,60	,06	,34
3,06-3,11	,16	,68	,33	,39
4,00-4,05	,31	1,83	,16	,77
4,06-4,11	,08	1,44	,33	,62
5,00-5,11	,67	2,12	,68	1,16
6,00-6,11	,12	1,17	,28	,52
Context Mean	,24	1,32	,23	,60

The Repeated Measures ANOVA conducted on imperfect compound tense production revealed significant main effects of context, Wilks' $\Lambda = .94$, $F(2, 87) = 3.15$, $p = .048$, but not a significant age main effect, $F(7, 88) = ,37$, $p = .916$.

A paired samples t-test was conducted to find out the source of difference in imperfect compound tense production. The results indicated that subjects used significantly more imperative tense on the story telling ($M = 1.32$, $SD = 4.43$) than they did on the story generation ($M = .24$, $SD = .95$) and on the structured play ($M = .23$, $SD = .68$): $t(95) = 2.41$, $p < 0.05$ $t(95) = 2.57$, $p < 0.05$ and $t(95) = .01$, $p = .992$, respectively.

Also the interaction between context and age failed to reach statistical significance, Wilks' $\Lambda = .95$, $F(14, 174) = .30$, $p = .993$. The ANOVA results were displayed in Table 22.

Table 22. Analysis of Variance for imperfect compound tense

Source	df	Mean square	F	Sig.
Context (imperfect compound)	2	37,830	3,145	< .05
Error	87	6,718		
Age	7	3,252	,373	> .05
Error	88	8,729		
Context x Age	14	1,418	,300	> .05
Error	174	6,718		

5.2.3.2 Narrative Compound Tense Results

(Rivayet/Söylenti bileşik zamanı : "kip1+-ImIş":gelmişmişim - *I had come*)

The different usage of narrative compound tense comprised 57.64 percent of the total usage of narrative compound tense all over the application.

The percent-means of childrens' narrative compound tense usage were depicted in Table 23.

Table 23. The percent-means of childrens' narrative compound tense usage

Age Groups	Story generation	Story telling	Structured play	Age Mean
2,00-2,05	,08	,33	,04	,15
2,06-2,11	,15	,64	,42	,40
3,00-3,05	2,23	,55	1,94	1,57
3,06-3,11	1,09	,34	1,30	,91
4,00-4,05	,86	,89	,98	,91
4,06-4,11	1,69	,87	1,04	1,20
5,00-5,11	2,43	3,90	,97	2,43
6,00-6,11	1,06	,79	1,41	1,09
Context Mean	1,20	1,04	1,01	1,08

The Repeated Measures ANOVA conducted on narrative compound tense production did not reveal significant main effect of context, Wilks' $\Lambda = .99$, F (2, 87)= .317, p=.729, but a significant age main effect, F (7, 88)= 3,28, p= .004. Post-hoc Tukey test uncovered that 5 year-old children differed from 2 and 2 ½ year-old children in the production of narrative compound tense.

The interaction between context and age failed to reach statistical significance, Wilks' $\Lambda = .81$, $F(14, 174) = 1{,}42$, $p = .149$. The ANOVA results were displayed in Table 24.

Table 24. Analysis of Variance for Narrative Compound Tense

Source	df	Mean square	F	Sig.
Context (Narrative compound)	2	,98	,317	> .05
Error	87	4,29		
Age	7	17,88	3,283	< .05
Error	88	5,45		
Context x Age	14	5,98	1,419	> .05
Error	174	4,29		

5.2.3.3 Conditional Compound Tense Results

(Şart/Koşul bileşik zamanı : "kip1+ - sA" : geleceksem – *If I am going to come*)

The different usage of conditional compound tense comprised 9.76 percent of the total usage of conditional compound tense all over the application.

The percent-means of childrens' conditional compound tense usage were depicted in Table 25.

Table 25. The percent-means of childrens' conditional compound tense usage out of total word

Age Groups	Story generation	Story telling	Structured play	Age Mean
2,00-2,05	,00	,00	,00	,00
2,06-2,11	,00	,00	,00	,00
3,00-3,05	,00	,08	,06	,05
3,06-3,11	,00	,17	,09	,09
4,00-4,05	,00	,00	,07	,02
4,06-4,11	,00	,18	,04	,07
5,00-5,11	,03	,04	,09	,05
6,00-6,11	,00	,09	,03	,04
Context Mean	,004	,07	,05	,04

The Repeated Measures ANOVA conducted on conditional compound tense production revealed significant main effect of context, Wilks' Λ = .87, F (2, 87)= 6.30, p=.003, but not a significant age main effect, F (7, 88)= ,78, p=.609.

A paired samples t-test was conducted to find out the source of difference in conditional compound tense production. The results indicated that subjects used significantly less conditional compound tense on the story generation (M=.004, SD= .04) than they did on the story telling (M =.07, SD= .35) and on the structured play (M= .05, SD= .14 $t(95) = 3.18$, $p< 0.05$; $t(95) = 1.92$, p =.058 and $t(95) = .57$, p = .573, respectively.

Also the interaction between context and age failed to reach statistical significance, Wilks' $\Lambda = .91$, $F(14, 174) = .59$, $p = .871$. The ANOVA results were displayed in Table 26.

Table 26. Analysis of Variance for conditional compound tense

Source	df	Mean square	F	Sig.
Context (conditional compound)	2	,12	6,30	< .05
Error	87	,04		
Age	7	,03	,78	> .05
Error	88	,05		
Context x Age	14	,02	,59	> .05
Error	174	,04		

5.2.4 Analyses of Verb Structure

(Fiil Yapısı)

5.2.4.1 Morphologically Simple Verb Results

(Basit yapılı fiiller : gel – *come,* oku-ma-mış, ara-r-sa...)

The usage of simple verbs comprised 73.52 percent of the total verb usage all over the application.

The percent-means of childrens' simple verb usage were depicted in Table 27.

Table 27. The percent-means of childrens' simple verb usage out of total verb

Age Groups	Story generation	Story telling	Structured play	Age Mean
2,00-2,05	21,37	42,18	27,67	30,41
2,06-2,11	20,39	19,34	24,25	21,33
3,00-3,05	17,29	16,12	18,97	17,46
3,06-3,11	19,47	19,19	20,68	19,78
4,00-4,05	17,49	18,16	21,29	18,98
4,06-4,11	19,24	15,85	18,19	17,76
5,00-5,11	16,91	24,66	21,88	21,15
6,00-6,11	17,05	18,79	21,61	19,15
Context Mean	18,65	21,79	21,82	20,75

The Repeated Measures ANOVA conducted on simple verb production revealed significant main effect of context, Wilks' $\Lambda = .84$, F (2, 87)= 8.35, p=.000, but not a significant age main effect, F (7, 88)= 1,22, p=.300.

A paired samples t-test was conducted to find out the source of difference in morphologically simple verb production. The results indicated that subjects used significantly less simple verbs on the story generation (M=18.65, SD= 6.77) than they did on the story telling (M =21.79, SD= 34.59) and on the structured play (M= 21.82, SD= 7.58). : $t(95) = 4.07$, $p< 0.05$; $t(95) = .90$, p =.370 and $t(95) = .01$, p = .99, respectively.

Also the interaction between context and age failed to reach statistical significance, Wilks' $\Lambda = .88$, $F(14, 174) = .81$, p=.658. The ANOVA results were displayed in Table 28.

Table 28. Analysis of Variance for morphologically simple verbs

Source	df	Mean square	F	Sig.
Context (simple verbs)	2	317,80	8,345	< .05
Error	87	407,09		
Age	7	617,99	1,222	> .05
Error	88	505,86		
Context x Age	14	213,72	,810	> .05
Error	174	407,09		

5.2.4.2 Morphologically Derived Verb Results

(Türemiş yapılı fiiller : üf-ledim, dert-leş-tik)

The usage of derived verbs comprised 22.96 percent of the total verb usage all over the application.

The percent-means of childrens' derived verb usage were depicted in Table 29.

Table 29. The percent-means of childrens' derived verb usage out of total word

Age Groups	Story generation	Story telling	Structured play	Age Mean
2,00-2,05	2,73	18,52	3,86	8,37
2,06-2,11	5,53	12,04	5,79	7,79
3,00-3,05	6,99	14,46	3,71	8,39
3,06-3,11	6,49	7,45	6,50	6,81
4,00-4,05	8,54	9,55	6,08	8,06
4,06-4,11	8,03	11,06	9,01	9,37
5,00-5,11	7,47	10,38	6,52	8,12
6,00-6,11	6,81	4,77	6,33	5,97
Context Mean	6,57	11,03	5,97	7,86

The Repeated Measures ANOVA conducted on morphologically derived verb production revealed significant main effect of context, Wilks' $\Lambda = .93$, F (2, 87)= 3.30, p=.042, but not a significant age main effect, F (7, 88)= ,265, p=.966.

A paired samples t-test was conducted to find out the source of difference in morphologically derived verb production. The results indicated that subjects used significantly more derived verbs on the story telling (M =11.33, SD= 19.71) than they did on the structured play (M= 5.98, SD= 3.08). : $t(95) = 2.19$, $p< 0.05$; $t(95) = 2.46$, $p< 0.05$ and $t(95)= 1.23$, p =.221, respectively.

Also the interaction between context and age failed to reach statistical significance, Wilks' $\Lambda = .85$, $F(14, 174) =1.09$, p=.367. The ANOVA results were displayed in Table 30.

Table 30. Analysis of Variance for Derived Verbs

Source	df	Mean square	F	Sig.
Context (derived verbs)	2	732,16	3,301	< .05
Error	87	139,34		
Age	7	39,01	,265	> .05
Error	88	146,94		
Context x Age	14	122,65	1,093	> .05
Error	174	139,34		

5.2.4.3 Morphologically Complex Verb Results

(Bileşik yapılı fiiller : kalk-abil-di, yardım ettiler, gideyazdı...)

The usage of complex verbs comprised 3.53 percent of the total verb usage all over the application.

The percent-means of childrens' complex verb usage were depicted in Table 31.

Table 31. The percent-means of childrens' complex verb usage out of total word

Age Groups	Story generation	Story telling	Structured play	Age Mean
2,00-2,05	,37	2,08	,34	,93
2,06-2,11	,57	1,31	,89	,92
3,00-3,05	,65	,48	1,13	,75
3,06-3,11	,21	2,60	1,14	1,32
4,00-4,05	,42	1,06	,72	,73
4,06-4,11	,89	,49	,97	,78
5,00-5,11	,71	1,53	1,16	1,13
6,00-6,11	1,09	,89	,68	,89
Context Mean	,61	1,31	,88	,93

The Repeated Measures ANOVA conducted on morphologically complex verb production neither revealed significant main effect of context, Wilks' $\Lambda = .95$, $F(2, 87) = 2.42$, $p = .095$, nor a significant age main effect, $F(7, 88) = ,232$, $p = .976$.

Also the interaction between context and age failed to reach statistical significance, Wilks' $\Lambda = .89$, $F(14, 174) = .775$, $p = .059$. The ANOVA results were displayed in Table 32.

Table 32. Analysis of Variance for complex verbs

Source	df	Mean square	F	Sig.
Context (complex verbs)	2	11,68	2,42	< .05
Error	87	5,55		
Age	7	1,46	,23	< .05
Error	88	6,27		
Context x Age	14	3,59	,78	< .05
Error	174	5,55		

5.3 Overall Results

5.3.1 Results of Overall Verb-Tense Usage

All analyses were conducted independently for all verb-tense and structure classes and then totally, grouped under the main headings. The means are depicted at Appendix I.

The Repeated Measures ANOVA conducted on the total usage of *indicative tenses* didn't reveal significant main effect of context, Wilks' $\Lambda = .96$, F (2, 87)= 1.80, p=.172, also not a significant age main effect, F (7, 88)=,18, p=.988.

Also the interaction between context and age failed to reach statistical significance, Wilks' $\Lambda = .83$, F(14, 174) =1,22 , p=.262.

The Repeated Measures ANOVA conducted on the total usage of *desiderative tenses* revealed significant main effect of context, Wilks' $\Lambda = .57$, F (2, 87)= 32.71, p=.000, also a significant age main effect, F (7, 88)= ,10,37, p=.000.

A paired samples t-test was conducted to find out the source of difference in overall desiderative verb-tenses. The results indicated that subjects used significantly more desiderative tenses on the structured play (M= 6.36, SD= 6.15) than they did on the story generation (M=2.36, SD= 3.89) and story telling (M =3.38, SD= 7.32) : t(95) = 8.02, p< 0.05; t(95) = 3.56, p< 0.05 and t(95) = 1.43, p = .155, respectively.

Post-hoc Tukey test uncovered that 2 year-old children differed from all the children in the other age groups in the production of overall desiderative tenses.

However the interaction between context and age failed to reach statistical significance, Wilks' Λ = .87, F(14, 174) =,87 , p=.589.

The Repeated Measures ANOVA conducted on the total usage of compound tenses did not reveal significant main effect of context, Wilks' Λ = .95, F (2, 87)= 2.54, p=.084, but a significant age main effect, F (7, 88)= 2,70, p=.014. Post-hoc Tukey test uncovered that 2 and 2 ½ year-old children differed from 5 year-old the children in the production of overall compound tenses. Context and age failed to reach statistical significance, Wilks' Λ = .86, F(14, 174) =,97 , p=.482.

The Repeated Measures ANOVA conducted on the total usage of *all verb-tenses* revealed a significant main effect of context, Wilks' Λ = .86, F (2, 87)= 7.35, p=.001, but neither a significant age main effect, F (7, 88)= .64, p=.718, nor the interaction between context and age reached statistical significance, Wilks' Λ = .86, F(14, 174) =,95 , p=.505.

A paired samples t-test was conducted to find out the source of difference in overall total verb-tense production. The results indicated that subjects used significantly more number of verb-tenses on structured play ($\underline{M}$ =34.13, $\underline{SD}$= 52.58) and story telling ($\underline{M}$= 28.69, $\underline{SD}$= .7.51) than they did on the story generation ($\underline{M}$= 25.76, $\underline{SD}$= 7.11): $\underline{t}(95) = 3.57$, $\underline{p} < 0.05$); $\underline{t}(95) = 1.58$, $\underline{p} = .118$ and $\underline{t}(95) = 1.03$, $\underline{p} = .305$, respectively.

5.3.2 Overall Verb-Tense Usage Frequency Percentages

In order to find out the within age differences in the frequency and emergence of verb-tense categories, percentages of the total verb-tense usage for each age group, were acquired. This uncovered the percents of which age children used which verb-tense classes or verb structures more frequently, less frequently or not used at all .

Two year-olds used imperatives (39 %), 2 ½ year-olds used present progressive (40 %), 3 year-olds also used present progressive (29 %), 3 ½ year-olds used present progressive (32%) and indefinite past (33 %), 4 year-olds used indefinite past (38 %), 4 ½ year-olds used present progressive (31%) and indefinite past (28 %), 5 year-olds used indefinite past (45 %) and 6 year-olds used indefinite past (45%) mostly. The results are given in Appendix J in detail.

CHAPTER VI

DISCUSSION

In the present study, 96 Turkish preschooler participants' speech samples were analyzed for both the usage frequencies, percent of differing verb-tense usage in total verb-tense usage and contextual differences in verb-tense usage with possible age & context effects were investigated. Also usage percentages of the morphological structure of the used verbs were uncovered.

In this chapter, after summarizing the main findings of the present research, all will be discussed under the light of previous research findings about Turkish and other languages, main properties of Turkish language and general language theories.

6.1 Differing Verb-tense Usage Frequency Percent Results and Discussion

The differing (not the errors) usages from the ideal grammatical structure of verb-tenses were categorically investigated in their frequency percentages in children's usages.

The different usage of definite past tense comprised 1.77 percent of the total usage of definite past tense all over the application. The different usage of indefinite past tense comprised .28 percent of the total usage of indefinite past tense all over the application. The different usage of present progressive comprised 57.99 percent of the total usage of present progressive all over the application. The different usage of aorist comprised 5.13 percent of the total usage of aorist all over the application. The different usage of future tense comprised 73.31 percent of the total usage of future tense all over the application.

The most varying usages in indicative tenses were seen in future tense (-eCek) and present progressive (-Iyor). The possible reason for this is the children's preference for possible ease in communication. The difficult pronounciation of /r/ phoneme or the long morphemed future marker, made the children use them differently like "geliyorum – geliyom" or "geleceğim – gelicem". This conforms to the least effort principle of Chomsky (1988; cited in Pierce, 1992). Another possible reason for this high frequency of differing usages may be the child's imitation of environment-based usage differences. Also the children may have failed in grasping the unstressed parts of modeled speech (-Iyor could have been unstressed in parental speech and the child perceived it as –yo). This conforms to the findings of Brown & Bellugi (1964) for English children.

The different usage of conditional tense comprised 73.08 percent of the total usage of conditional tense all over the application. The different usage of optative tense comprised 47.57 percent of the total usage of optative tense all over the

application. The necessity tense was not used by children all over the application. The different usage of imperative tense comprised 3.43 percent of the total usage of imperative tense all over the application.

The desiderative tenses were hard for the 2 to 6 year–old children and desideratives were rarely used by them. The differences in conditional desiderative tense was a possible reflection of environmental usage differences. The optative tense was so rare that the usage differences could have been the result of newly acquired structure and the environmental speech differences. The imperative was acquired first and is free of inflections so minimal number of differences were seen in its usage.

The different usage of imperfect compound tense comprised 24.09 percent of the total usage of imperfect compound tense all over the application. The different usage of narrative compound tense comprised 57.64 percent of the total usage of narrative compound tense all over the application. The different usage of conditional compound tense comprised 9.76 percent of the total usage of conditional compound tense all over the application.

In the use of compound tenses the children mostly changed the order of tense inflections and this was probably the result of the morphological complexity in these tenses. Together with being long, the weak stress on the inflections could have resulted in the children's high level of varying usages.

As a general scene Turkish children probably use the differing forms of the verb-tenses either as a result of imitations in the form of reductions (Brown & Bellugi, 1964) or of the least effort principle of Chomsky (1988, cited in Pierce, 1992). Throughout these differing usages, as no regular- irregular verb difference occurs in Turkish, no overgeneralizations of verbs or verb-tenses were seen.

6.2 Summary of the Age-Related Findings and Discussion

- Verb-tense

In this study, the frequency of verb-tense usage was investigated rather than the order of verb-tense acquisition. In the literature there are not so many acquisition studies conducted regarding the frequency of usage of verb-tenses and is hard to compare the available frequency percentages with other findings. Turkish language is structurally different from other languages so the results can not be discussed with previous studies in detail however, the verb-tense acquisition of Turkish and its age based differences are generally uncovered in this descriptive study :

The most frequent verb-tense usage begins with most production of **imperatives** and **present progressive** in 2 years. Then the usage of present progressive peaks in 2 ½ and 3 years, then present progressive together with the most frequently used **definite past** in 3 ½ and indefinite past in 4 years. Then present progressive again peakly used in 4 ½ years and the most frequent usage became **indefinite past** in 5 and 6 years. The desiderative tenses other than imperatives and compound tenses were used rarely , as a possible result of their

structural complexity for 2 to 6 year old children. In all of the age groups, zero percent of conditional compound and necessity usage was uncovered.

These findings reveal the occurence and frequency of most verb-tense categories in Turkish child's early language. Although Turkish is structurally different, a universal characteristic in part, was found. When English is considered generally, imperatives and present progressive are found to have firstly acquired by children (Aksu-Koç, 1988; Akhtar & Tomasello, 1997; Broen & Santema, 1983; Cazden, 1968; De Villiers & De Villiers, 1985; McShane &Whittaker, 1988; Wood, 1997). Present study confirms the results of these studies. When the studies conducted in other cultures are considered these results again partly support the findings of the usage of beginning with imperatives, present continuous and general past (Aksu-Koç, 1988; Berman, 1985; Clancy, 1985; Clark, 1985; Mills, 1985; Smoczyńska, 1985).

However, as Taylan (1988) states, in Turkish some principles may be universal, others are necessarily language specific. Keeping this in mind, when Turkish findings are considered, the findings didn't follow a parallel order possibly because of the differing number of participants and differences in research methods. However, these results are consistent with Ekmekçi (1982), in the initial occurence of infinitives and the frequent usage of present progressive. The development of the first verb-tenses generally are in line with the previous research. The other verb-tenses are not parallelly acquired or used.

Basically most simple verb tenses were seen in 2 year-olds' speech and that is in line with Aksu-Koç & Slobin (1985) in the Turkish children's inflecting verbs for tense by 24 months of age. As a general consequence, the frequency of usage progressed from simple structured verb-tenses to more complex ones together with still the non-occurence of necessity tense-marker (-mEll). The general tendency of frequent usage begins with the rarely inflected infinitives, continues with mostly child simplified versions of present progressive like "yapıyo", then the simple marker of definite past continued by a bit more complex indefinite past tense marker (-mIş) then later the non parallel frequency of usages of the desiderative and compound verb-tense forms.

The results partly overlap with that of Acarlar & Dönmez (1992); Dönmez & Arı (1992) and Güleryüz and Dönmez (1992). The most frequent usage of imperatives as a first step and the non–occurence of necessity marker in these studies, are in line with the present study findings. However there is not a consistency between the other usage frequencies of verb-tense. This is probably because of the difference in research methods or the still not paralleling manner of Turkish language studies, as the previous ones reported.

When the significant age main effects found for verb-tense production were investigated:

2 year-olds were found to use significantly more **definite past tense** than 6 year-olds.

This is an excepted finding that as the marker –dI is simple, the newly

language acquiring child would prefer using it more frequently than the 6 year-olds, who are equipped with the more complex tense markers and they would prefer using the complex ones more.

2 year-olds also produced significantly less **indefinite past tense** than 5 and 6 year-olds. Also, 2 ½ year-olds used significantly less indefinite past tense then 4, 5 and 6 year-olds. 3 year-olds produced significantly less indefinite past tense than 5 year-olds. In **imperative** tense production, 2 year-olds produced significantly high frequency of imperatives than all the other seven age groups.

These findings all reveal that the child prefers the simplest category of verb-tense that he can produce. The indefinite past tense is syntactically a hard one for a 2 year-old child to produce. Also no simplifications could be made for this tense marker, either by using the least effort principle or redundant imitation. Even at age 3, children preferred to use present progressive with simplifications more than indefinite past tense marker. At the age of 3 ½ , the indefinite past usage reached to that of present progressive, and at age 4 ½ it is mostly used possibly with differences in pronunciation. The indefinite past tense seems to be fully acquired at the age of 5 in our sample. However, the youngest children in the sample, used the simplest form of verb-tense in a more frequent way than all other age groups.

In the production of **present progressive, aorist** and **future** tense, the age groups did not differ significantly from each other. Also, **conditional desiderative, optative** desiderative and **necessity** usages did not differ across age

groups. Age groups did not differ in **imperfect compound** and **conditional compound** tense usage.

These usage differences may be the result of the verb-tenses' being similar in syntactic structure, either after-simplified form or the original form of the tense markers were used in the same frequency for all age groups.

The **narrative compound** tense was used significantly more frequent by 5 year-old children than 2 and 2 ½ year-olds.

This is the age period when the child begins enjoying to tell stories (McElroy, 1972). So the use of expressions like "*gelirmiş...*" would peak and this constitutes the narrative compound tense. However, at age 2 it is also mentioned in Mc Elroy(1972) that, the child only enjoys story listening when pictures are involved. Also the narrative compound marker is a really complicated one for 2 and 2 ½ year-old children even when the indefinite past is not fully acquired.

* Verb structure

The results of morphological structure of verbs uncovered that :

The usage of simple verbs comprised 73.52 percent of the total verb usage all over the application. The usage of derived verbs comprised 22.96 percent of the total verb usage all over the application.The usage of complex verbs comprised 3.53 percent of the total verb usage all over the application.

A general trend of using **simple** verbs more frequent than **derived** verbs and least frequent usage of **complex** verbs were uncovered within all age groups.

Morphologically **simple, derived** or **complex** verb usages did not differ across age groups.

This surprising finding makes us think that the 6 year-old children still continue the syntactic acquisition. This is also mentioned in previous studies(Berko 1958, as cited in Lund and Duchan; Brown &Bellugi, 1964; Karmiloff-Smith 1979).

The overall results revealed that, the total usage of indicative tenses also did not differ across age groups. The desiderative tenses were used significantly less by 2 year-olds , than all the other seven age groups. On the total usage of all verb tenses, no age based differences were seen.

The least frequent usage of the overall desiderative tenses in 2 year-olds again reveals the complex structure and less stressed markers, together with the possible cognitive inadequecy of this very young children, prevented the acquisition of desideratives other than the rarely marked imperatives.

Also as verbs are the main building blocks of a language, all age groups used verb-tenses in close percentages but the content(verb-tense category) differed according to some ages, as mentioned above.

6.3 Summary of the Context-related Findings and Discussion

- Verb-tense

Story telling context triggered the *definite* and *indefinite past tense* production more than Story generation and Structured play contexts. Also, especially 5 year-olds used more frequent indefinite past tense in Story telling context , than the other two contexts (age*context).

As stories are mostly narrated in past tense, the children would probably have modeled this from their parents or preschool teachers. In the case of 5 year-olds, as mentioned above, they would prefer the newly fully mastered indefinite past tense, in the context they enjoyed more, the story telling. Together with these, the imitation effect could be a possible cause for this outcome.

In *present progressive* usage, **Story generation** context triggered more frequent usage than the other two contexts.

As the child saw the pictures, their general trend was to tell what happens in present progressive tense. Also the probe questions were mostly in present progressive tense so this would have an imitation effect on the present progressive usage.

In *aorist* usage, **Story telling** and **Structured play** triggered more frequent usage than Story generation context.

The most common expressions in children's story telling in embedded sentences and in play is talking for the person in the play or in the story. Expressions

like : *Kurt kuzuya seni yerim! demiş* in a typical story telling; and *Bunu böyle koyarım, yanına da köpeği oturturum. Köpek de çocuğu ısırır.* These kind of expressions could have increased the usage of aorist in these contexts.

Future tense was used more frequently in **Story telling** and **Structured play** contexts than Story generation.

The above mentioned way of thought would possible prove to be true for the usage of future tense as well. Verb-tense expressions like *Anne suyu açacak* while playing, or *Kurt hepimizi yiyecek demiş* while story telling are common.

C*onditional desiderative* tense was used more in **Structured play** context than Story generation and Story telling.

The scarce usage of conditional desiderative would be common in structured play where the child sometimes egocentricly talks to himself like *Bunu alim* or when needs to get the approval of the researcher, almost in a varying manner from the ideal grammatical use: *Bunu böyle koyim mi?*

Optative/Subjunctive tense was used more frequently in **Story telling** and **Structured play** than in Story generation.

When talking about frequency percentages over the total verb usage, the usage of optative tense constituted about the zero percent of the total verb-tenses used, however although being very rare, it was used in Story telling and Structured play. It is possibly the result of egocentric talking to himself like *Baba ata binse..* or when needs to get the approval of the researcher *Böyle koysam düşer mi?*

Necessity tense usage did not differ according to contexts because of its extremely rare usage. *Imperative tense* was used more in **Structured play** than in Story telling and Story generation contexts.

During the sessions, in structured play, the children frequently used expressions like *baba ata binsin mi?, Çocuk yatsıın.* These expressions, not semantically but syntactically belong to the imperative tense category. So this finding proves to be a logical one.

The usage of *imperfect compound* was most frequent in **Story telling** context.

This verb-tense morphologically and semantically resembles the definite past tense with two different tense markers, like *ağlıyordu.* So, the same explanation proves to be true for indefinite and definite past tense usage in story telling context.

Narrative compound usage did not differ across contexts because of its extremely rare usage. *Conditional Compound* usage was more frequent in **Story telling** and **Structured play** than that in Story generation.

The extremely rare usage of conditional compound was seen in these contexts again in the form of egocentric talk or talk with toys or telling the researcher what would happen, like *Köpek ısırırsa görürsün gününü!*

While the general usage of *indicative tenses* as a whole, and *compound tenses* as a whole did not differ according to contexts, the general usage of *desiderative tenses* was more frequent in **Structured play** context than Story telling and Story generation contexts.

Semantically thinking proves this result again. The child either as a result of imitation or as a result of first attempts in using desiderative tenses, would express himself better according to the context structured play, especially a proper context to produce all desideratives either in the form of embedded sentences or in the form of egocentric play talk.

- Verb structure

In **Structured play**, *morphologically simple verbs* were used more frequently than in Story telling and Story generation.

While playing with toys, the children prefered using telegraphic speech components in order to be more focused on thier play. Simple verbs were the most easy ones for them, also which they mastered using in all the age groups.

Morphologically derived verbs were used most frequently in **Story telling** than in Story generation and Structured play.

Maybe this is a fact related to the reported manner of the story content.

Morphologically complex verbs' usage did not differ across contexts. Because none of the age groups succeeded in mastering the acquisition of complex verbs.

As a general result,

The overall usage of verb-tense was most frequent in **structured play** and **story telling** than **story generation.**

It is the possible result of the two contexts' availability triggering numerous verb-tense usage. In Story telling, egocentric talking to himself, also narrating what others would have said or asking for the approval of the researcher, the children had the chance to use all acquired verb-tenses.

The enjoyable content and the availability of several verb-tenses to use during playing , the children probably used numerous expressions: Also the movability of toys made them use more verbs in structured play session, and they used all the tenses with these verbs.

The story generation context probably, proved to be hard or boring for 2 to 6 year- old children because the least frequency of total verb-tense was used during story generation.

CHAPTER VII

CONCLUSION

7.1 Conclusions

In the light of the reviewed studies and the obtained descriptive data concerning a wide age range of participants, who are controlled strictly for gender, age and maternal education level differences, the present study found the following general results for the hypotheses:

1- Not in all verb-tenses but in definitepast tense, indefinite past tense, imperative usage, 2 and 6 year-olds differed significantly. This result partially supported the first hypothesis.

2- The most verb-tense usage is triggered in Structured play and Story telling contexts. This result partly supported the second hypothesis.

3- The least verb-tense usage is triggered in Story generation context. Third hypothesis is completely supported by this finding.

4- Indefinite and definite past tense is most frequently produced in story telling context. This finding supported the fourth hypothesis.

5- Five and 6 year-olds use more frequent verb-tense in structured play context. This, fifth hypothesis was not supported however, 5 year-

olds used more frequent indefinite past tense in story telling context, as displaying the effect of both age and context.

6- The age groups didnot differ in their morphological production of verb-tense. All age groups used morphologically simple verb-tenses most frequently. So, sixth hypothesis was not supported by this surprising finding.

The present study secondarily aimed at generally investigating the possible productions of verb-tense forms differing from the ideal grammatical usages.

7- Although not so high differing usage percentages were seen in imperative tense, indefinite past tense was used in a more grammatically ideal fashion than all other verb-tenses. The reason for this is the impossibility of its usage by the least effort law. In Turkish, indefinite past tense has a highly regular and difficult syntactic form so it is acquired late but with minimal efforts. So, seventh hypothesis is not totally supported by this finding.

7.2 Implications

The present study is the first known Turkish developmental linguistics study to investigate all verb-tenses together with their morphological structures. Also investigating the possible differences in the production context gave this study a former importance.

The representativenes of the participants, the wide age range but close age groups together with working with 2 year-olds made this study a harder but a unique one to conduct.

The results are really useful for the intervention area because still Turkish doesn't have its unique developmental language screening test so maybe these results will prove useful in the intervention area of speech delay and other speech and language disorders.

7.3 Limitations and Suggestions

A possible limitation of the present study is the extremely structured method of data collection. In order to provide speech samples, other contexts could be utilized. Instead of using picture series, a movie, a cartoon or a puppet show could be used to provide more speech samples from the participants. Future studies can utilize these data collecting methods together with observing children in their natural environments with either their parents or with their friends.

Another future suggestion can be, replicating the same method of study, this time for investigating the controlled variables. These studies would prove useful for uncovering whether the maternal/paternal education really has an effect on expressive language development, especially grammatical structures like verb-tense and verb structure usage.

Bilingual children can be investigated in their verb-tense acquisition process by using this procedure and the results can again be compared to that of the present study.

Lastly, as another suggestion, the same method may be utilized for the normally developing children of older ages or of special populations, especially the speech –language disordered ones in order to make comparisons with the results of the present study.

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APPENDICES

Appendix A. Informed Consent Form

ARAŞTIRMA BİLGİ FORMU

Sayın Katılımcı,

ODTÜ Psikoloji Bölümü, Gelişim Psikolojisi Yüksek Lisans öğrencileri (Arzu Baykara, Binhan Koyuncuoğlu, Demet Buyurgan, İpek Kaleli, Özlem Kocabaş ve Şükran Kılıç) ve tez danışmanları Doç. Dr. Ayşe Gül Güven ve Y.Doç. Dr. Sibel Kazak Berument tarafından yürütülmekte olan bir çalışma için işbirliğinize gereksinim duyulmaktadır. Bu çalışma, 144, 2-6 yaş arası çocuk üzerinde yapılacaktır.

Veriler bilimsel amaçlar dışında kullanılmayacak, çalışmaya katılanların kimlikleri ve toplanan bütün bilgiler gizli tutulacaktır. Uygulama çocukların zevk alacağı 3 bölümden oluşmaktadır: İlk kısımda çocuğa doğum günü kutlamasını canlandıran 5 resim gösterilip, bunlardan bir hikaye oluşturması istenecektir. İkinci kısımda çocuğun, aklına gelen bir hikayeyi anlatması istenecektir. Son kısımda ise kendisine verilen oyuncaklarla oynaması istenecektir. Yaklaşık 45 dakika sürecek olan uygulamanın bütününde ses kaydı yapılacaktır.

Bu çalışmanın amacı, **çocuğunuzun psikolojik ya da zihinsel gelişimini değerlendirmek değil, çocuğunuzun yaşıtı olan bütün Türk çocuklarının**, temel dilbilgisi yapılarını nasıl kullandıklarını belirlemektir. Çocukların tek tek nasıl konuştukları değil, o yaştaki bütün çocukların dili kullanımı değerlendirilecektir.

Bu süreçte çocuğunuz, herhangi bir sebeple devam etmek istemezse, uygulama sona erdirilecektir. Uygulamalar çocuğunuzun yuva veya okulunda, yuva/okul yönetimince uygun görülen yer ve zamanlarda yapılacaktır.

Bu çalışma Ankara İl Milli Eğitim Müdürlüğü tarafından onaylanmış ve Ankara'daki bütün yuva ve okullarda uygulanması için izin verilmiştir.

Çocuğunuzun bu çalışmaya katılmasını kabul ediyorsanız lütfen aşağıda ilgili yeri imzalayınız. Yardımlarınız için şimdiden teşekkür ederiz.

KATILIMCI KABUL FORMU

Çocuğum .....'ın ODTÜ Psikoloji Bölümünde yürütülmekte olan "Türk çocuklarında temel dilbilgisi yapılarının gelişimi " konulu araştırmaya katılmasını kabul ediyorum.

Araştırmanın kapsamı ve uygulamanın gerektiği durumlarda tamamlanmadan bırakılabileceği konusunda bilgilendirildim.

(Lütfen size uygun kutuyu işaretleyiniz.)

Annesi ☐

Öğretmeni ☐

.....	.....	.....
Adı- Soyadı	İmza	Tarih

Appendix B. Demographic Information Form

ÇOCUK İLE İLGİLİ TEST-ÖNCESİ GENEL BİLGİ FORMU

Aşağıdaki formun, çocuğun annesi veya öğretmeni tarafından doldurulması gerekmektedir.

- Bu araştırma Türk çocuklarının dil gelişimi ile ilgilidir. Araştırmada toplanacak olan veriler bir bütün olarak değerlendirileceği için, sizden istediğimiz her maddeyi dikkatlice okuduktan sonra, soruları kendi başınıza cevaplamanızdır.
- Sonuçların doğruluğu açısından soruları boş bırakmamanız araştırmacılar için çok önemlidir. İşbirliğiniz için şimdiden teşekkür ederiz.
- Çocuğumun bu araştırmaya katılmasına izin veriyorum.

EVET □ HAYIR □

- Çocuğumun :

Adı-Soyadı: .....

Doğum Tarihi (gün/ay/yıl):.....

Cinsiyeti: KIZ □ ERKEK □

İlk çocuk olup olmadığı: EVET □ HAYIR □

Yuvaya başlama yaşı:.....

Yuva öncesi bakımı :

Evde – anne □

Evde – bakıcı □

Evde – aile büyüğü □

Ev dışında bakım □

(Nerede?Kim?.....)

•Anne babası :Beraber□ Ayrı □ (Ne zamandır ?

(.....)

- Annenin eğitim durumu :

Okuryazar değil □ İlkokul mezunu □

Ortaokul, lise veya dengi mezunu □ Üniversite/ yüksekokul mezunu □

- Babanın eğitim durumu :

Okuryazar değil □ İlkokul mezunu □

Ortaokul, lise veya dengi mezunu □ Üniversite/ yüksekokul mezunu □

- Annenin çalışma durumu : ÇALIŞIYOR □ (Ne zamandır? .....)

ÇALIŞMIYOR □ (Ne zamandır? .....)

- Bu çocuğunuzun doğumundan beri ev dışında sürekli çalıştığınız bir işiniz var mı?

EVET □ HAYIR □

- Ailenizin ekonomik durumu (belirtiniz) : Düşük □ Orta □ Yüksek □

- Çocuk anlamlı ilk kelimesini yaklaşık olarak kaçıncı ayında söyledi?.....

- Şu anda ortalama kaç anlamlı kelime söylüyor? :

yaklaşık 3 kelime □ yaklaşık 5 kelime □

yaklaşık 10 kelime □ 10 kelime ve üzeri □

- Çocuğun herhangi bir işitme ya da konuşma problemi (kekemelik, gecikmiş konuşma, bazı harfleri söyleyememe vs.) var mı?

EVET □ HAYIR □

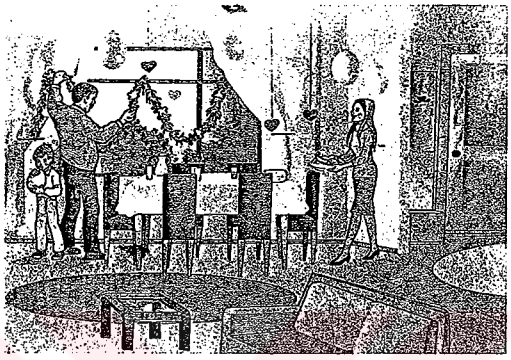
Varsa belirtiniz.....

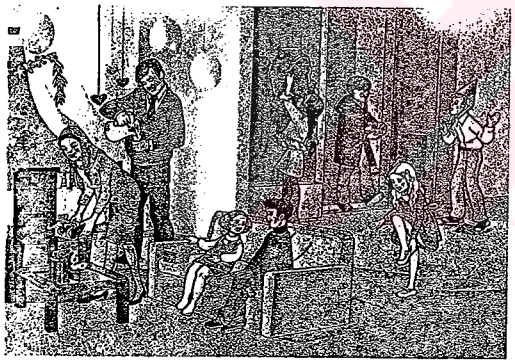
- Çocuk günde yaklaşık kaç saat televizyon izliyor? .....
- Hangi programları izliyor? .....
- Annenin Adı/ Soyadı : .....
- Öğretmenin Adı /soyadı :.....

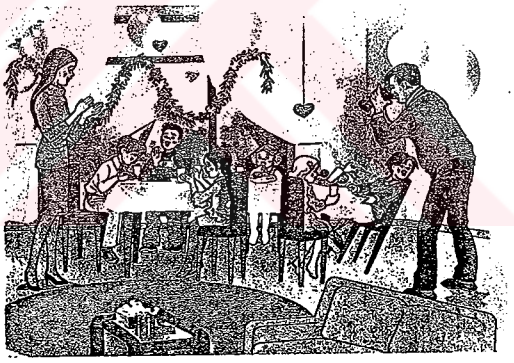
İmza

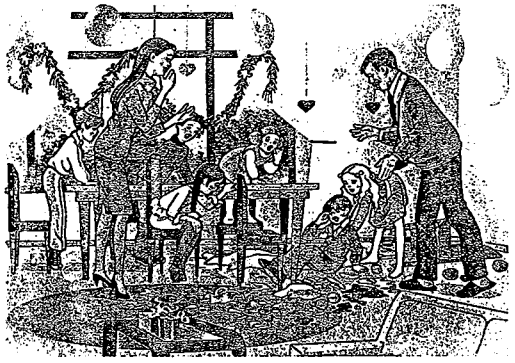
Appendix C. Pictures generating the story sequence

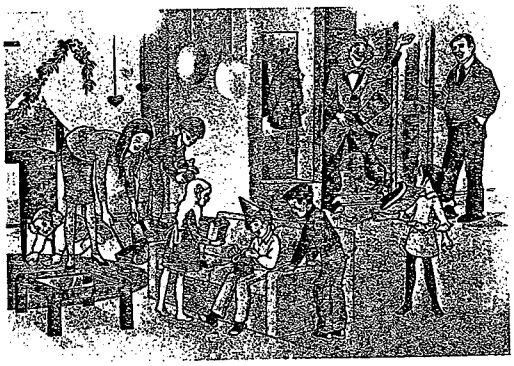
STORY PICTURES











Appendix D. Photograph of Legos used in structured play session

Appendix E. Research Instructions and probe questions

Yönergeler ve anlatımı sürdürmeye yönelik kolaylaştırıcı sorular

I. BÖLÜM : *Resimli Kartlardan Hikaye Oluşturma*

Uygulamaya başlamadan önce çocuğu ısındırmak ve rahat iletişim kurabilmek için bir süre konuşuldu.

İlk kartı gösterip anlattıktan sonra, ilk kartın yanına ikinci kartı açıldı. Sonra ikinci kart birinci kartın üzerine koyuldu. Üçüncü kart ikinci kartın yanına açıldı. Alta ise dört ve beşinci kart açıldı. Kartlar kare şeklinde oldu.

(1) 2	3
4	5

Yönerge:
Şimdi seninle resimli kartlardan hikaye anlatma oyunu oynayacağız. Önce ben anlatmaya başlayacağım, sonra da senin devam etmeni isteyeceğim. Hazır mısın başlayalım mı?

"Bu çocuğun doğum günüymüş. Sabah erkenden hazırlık yapmaya başladılar. Baba salona süsleri asarken, çocuk da balonları şişirerek ona yardım ediyordu. Anne ise sofrayı hazırlamış ve meyveleri getiriyordu."

(Hikaye anlatıldıktan sonra)
"Şimdi sıra sende...Şimdi sana dört tane kart göstereceğim. Bu kartlarda neler olduğu ile ilgili bir hikaye anlatmanı isteyeceğim. Ne yapacağını anladın mı? Sormak istediğin bir şey var mı?
Hazırsan başlayalım."
İşte ilk kartımız ...Sence neler oluyor anlatır mısın?

(Sustuğu zaman)

- Peki burda ne oluyor?
- Peki sence bu insanlar neden buradalar, ne yapıyorlar?

-Genel, her kartta :

- Peki başka?
- Sence başka neler oluyor ?
- Sence başka neler yapıyorlar ?

-Birinci kartta :
Bu ilk kartımız,

- Sence bu resimde neler oluyor?
- Bu aile ne yapıyor?

-İkinci kartta :

- Peki, şimdi burada neler görüyorsun?
- Buradaki kişiler/çocuklar neler yapıyorlar?

* Çok güzel gidiyorsun aferin sana... Şimdi de bu karta bakalım..Sence bu resimde neler oluyor?

-Dördüncü kartta :
Bu da son kartımız... Şimdi bunda neler görüyorsun?

"Peki, çok güzel anlatıyorsun, devam et..... Merak ediyorum başka neler oluyor?" gibi, ya da son söylediğini tekrar ederek, anlattıklarının iyi takip edildiğini belli eden ifadeler kullanıldı.

*II. BÖLÜM : **Hikaye Anlatma***

Yönerge:
Şimdi de bana aklına gelen bir masal ya da hikayeyi anlatır mısın? Hadi başla .

(Eğer çocuğun aklına bir şey gelmediyse, hikayeyi çıkaramadıysa, seçenekler sunularak hatırlamasına yardımcı olundu.)

" Bak bir sürü masal var... Mesela Pamuk Prenses, Külkedisi, Kırmızı Başlıklı Kız, Pinokyo, Fareli Köyün Kavalcısı, Sihirli Flüt, Çizmeli Kedi... Bunlardan birini anlatabilirsin, ya da aklına gelen başka bir masalı anlatabilirsin. Hadi hazırsan başlayalım. Seni dinliyorum."

III. BÖLÜM : Yapısallaştırılmış Oyun

- Ev eşyaları sabitlenip, sadece insan figürleri öne çıkarılıp çocuğa verildi.

"Çok güzel anlattın. Hadi şimdi seninle bir oyun oynayalım. Bu ev bu ailenin... Hadi bunlarla istediğin gibi oyna.. Bu saatteki elma buradan buraya gelene kadar vaktin var(20 dak). Oynarken de bana neler olduğunu anlatır mısın?
Ne yapacağını anladın mı? Sormak istediğin bir şey var mı?"

⇒ Eğer çocuk, bu ne bu ne diye soru sorarsa, sorunun cevabı verilmeyip "Düşün bakalım", "Bu senin oyunun ....ben bilmiyorum ki." , "Biraz daha düşün istersen" ..gibi ifadeler kullanıldı.

Appendix F. Data-Analyzing Sheet

* 2-6 yaş Türk çocuklarında haber ve dilek kipleri kullanım gelişimi ile ilgili veri kodlama kağıdı *

Denek No :
Yaş :
Anne Eğitimi :
Cinsiyet :
Bölümlere göre toplam kelime sayıları :

	HABER KİPLERİ									
	GEÇMİŞ ZAMAN				ŞİMDİKİ ZAMAN				GELECEK ZAMAN	
	-di'li geçmiş zaman		-miş'li geçmiş zaman		-ıyor		-r (geniş zaman)		-acak	
	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım
I. Bölüm										
Sayı										
	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım
II. Bölüm										
Sayı										
	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım
III. Bölüm										
Sayı										
Toplam										

	DİLEK KİPLERİ									
	DİLEK (-sa)			*İSTEK (-a)*	*GEREKLİLİK (-malı)*		*EMİR (-)*		*DİĞER*	
	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım
I. Bölüm										
Sayı										
	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım
II. Bölüm										
Sayı										
	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım	Doğru kullanım	Farklı kullanım
III: Bölüm										
Sayı										
Toplam										

Bileşik zamanlı eylemler						
	Hikaye (-idi)		Rivayet (-imiş)		Şart (-ise)	
	Doğru	Farklı	Doğru	Farklı	Doğru	Farklı
I						
II						
III						

Yukarıda listelenen bütün fiillerin yapılarına göre sınıflandırılması			
	BASİT	TÜREMİŞ	BİLEŞİK
I			
II			
III			

Toplam Basit Fiil Sayısı :

Toplam Türemiş Fiil Sayısı :

Toplam Bileşik Fiil Sayısı :

Toplam Çekimli Fiil Sayısı :

Appendix G. Frequencies, means, range of minimum and maximum number of tense usages derived from contextual raw scores

Indicatives :

	CONTEXT 1					CONTEXT 2					CONTEXT 3				
	Def. Past	Indef. Past	Pres. Prog.	Aorist	Future	Def. Past	Indef. Past	Pres. Prog.	Aorist	Future	Def. Past	Indef. Past	Pres. Prog.	Aorist	Future
AGE ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓
2,00 - 2,05	9	7	9	1	4	6	4	6	0	4	12	4	11	1	7
	2,42	1,58	8,08	0,08	1,83	,83	1,58	,58	0	1,58	11,17	1,83	10,92	0,08	3,75
	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
	10	5	22	1	11	4	7	2	0	11	24	11	39	1	17
2,06 - 2,11	9	8	12	2	2	8	6	8	3	4	10	7	12	7	11
	2,08	3,33	10,75	.17	,42	2,83	1,42	3,33	.92	,92	9,08	1,42	17,33	1,83	5,92
	0	0	2	0	0	0	0	0	0	0	0	0	5	0	0
	10	23	18	1	4	10	6	8	6	4	27	6	47	7	30
3,00 - 3,05	8	9	12	3	4	5	10	8	5	6	11	9	12	9	7
	3,58	10,17	10,17	,33	,50	4,42	3,92	2,92	,42	,75	14,58	13,83	18,25	2,33	2,83
	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0
	13	34	25	2	3	22	14	8	1	4	58	72	69	9	9
3,06 - 3,11	7	12	12	2	4	8	9	12	5	4	11	11	12	7	10
	,92	11,75	15,33	.25	,33	2,17	5,33	4,58	.92	,67	7,42	40	19,58	3,58	7,75
	0	1	3	0	0	0	0	1	0	0	0	0	7	0	0
	3	30	32	2	1	7	16	14	4	3	22	175	48	18	47
4,00 - 4,05	9	12	10	0	4	6	10	10	3	3	11	10	12	10	10
	3,33	13,83	12,92	0	,75	2,42	9,67	7,08	,42	,50	13,67	27,00	17,25	3,17	5,58
	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0
	9	25	38	0	5	9	21	24	1	4	49	119	33	12	15
4,06 - 4,11	9	11	12	3	4	6	9	7	2	3	11	11	12	9	11
	2,50	13,67	17,75	.50	2,25	1,42	6,67	1,92	,17	,67	15,50	15,08	22,00	4,00	6,17
	0	0	5	0	0	0	0	0	0	0	0	0	3	0	0
	9	37	40	3	10	8	18	5	1	5	83	50	50	16	18
5,00 - 5,11	7	11	11	0	1	7	10	8	5	6	12	12	11	10	11
	2,25	7,67	15,33	0	,33	1,58	17,83	2,50	1,08	,58	14,00	74,83	20,08	3,92	6,17
	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
	16	22	37	0	4	8	52	11	5	2	41	228	48	20	23
6,00 - 6,11	4	12	12	2	4	6	12	7	5	3	11	12	12	6	11
	1,67	8,33	22,75	.17	,50	3,42	21,92	1,42	1,25	,67	8,00	61,33	36,67	2,50	4,33
	0	2	3	0	0	0	2	0	0	0	0	3	3	0	0
	7	18	45	1	2	27	57	3	6	4	32	161	142	8	24
TOTAL															
	2,34	8,79	14,14	.19	,86	2,39	8,54	3,04	,65	,79	11,68	29,42	20,26	2,68	5,31
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	16	37	45	3	11	27	57	24	6	11	83	228	142	20	47

Appendix G. (continued.)

Frequencies, means, range of minimum and maximum number of tense usages derived from contextual raw scores

Desiderative Tenses :

	CONTEXT 1				CONTEXT 2				CONTEXT 3			
	Cond.	Nec.	Opt.	Imp.	Cond.	Nec.	Opt.	Imp.	Cond.	Nec.	Opt.	Imp.
AGE	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓
2,00 - 2,05	1	0	4	5	0	0	2	5	0	0	8	11
	,33	,00	,33	6,00	,00	,00	,25	,58	,00	,00	1,75	20,50
	0	0	0	1	0	0	0	0	0	0	0	0
	4	0	1	14	0	0	2	2	0	0	10	43
2,06 - 2,11	0	0	5	8	0	0	3	4	2	0	10	11
	,00	,00	,67	2,42	,00	,00	,33	,42	,50	,00	4,42	12,42
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	4	13	0	0	2	2	4	0	16	59
3,00 - 3,05	0	0	3	6	1	0	5	4	4	0	9	11
	,00	,00	,58	2,75	,08	,00	,58	1,00	1,08	,00	5,42	12,92
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	4	16	1	0	3	5	5	0	19	43
3,06 - 3,11	0	0	2	5	0	0	1	6	5	0	10	12
	,00	,00	,17	,50	,00	,00	,17	,67	1,17	,00	4,58	6,83
	0	0	0	0	0	0	0	0	0	0	0	1
	0	0	1	2	0	0	2	2	5	0	19	22
4,00 - 4,05	2	0	5	3	1	0	3	3	4	0	10	11
	,50	,00	1,00	1,50	,08	,00	,33	,25	,58	,00	7,17	9,42
	0	0	0	0	0	0	0	0	0	0	0	0
	5	0	6	8	1	0	2	1	2	0	26	44
4,06 - 4,11	0	0	3	6	0	0	4	4	4	1	9	11
	,00	,00	,25	2,75	,00	,00	,50	,67	,92	,17	6,75	12,58
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	1	15	0	0	2	3	5	2	24	37
5,00 - 5,11	0	0	1	2	0	0	7	6	3	1	10	9
	,00	,00	,08	,25	,00	,00	,83	1,33	,50	,08	3,83	5,50
	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	1	2	0	0	2	6	3	1	16	20
6,00 - 6,11	1	0	1	4	1	0	7	9	4	0	9	11
	,08	,00	,08	,42	,08	,00	1,08	3,58	,33	,00	3,25	6,58
	0	0	0	0	0	0	0	0	0	0	0	0
	1	0	1	2	1	0	3	11	1	0	15	17
TOTAL												
	,11	,00	,40	2,07	,03	,00	,51	1,06	,64	,03	4,65	10,84
	0	0	0	0	0	0	0	0	0	0	0	0
	5	0	6	16	1	0	3	11	5	2	4,42	59

Appendix G. (continued.)

Frequencies, means, range of minimum and maximum number of tense usages derived from contextual raw scores

Compound Tenses :

	CONTEXT 1			CONTEXT 2			CONTEXT 3		
	Imperfect	**Narrative**	**Conditional**	**Imperfect**	**Narrative**	**Conditional**	**Imperfect**	**Narrative**	**Conditional**
AGE ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓
2,00 - 2,05	**1**	**1**	**0**	**1**	**1**	**0**	**1**	**1**	**0**
	,33	,08	,00	,08	,17	,00	,08	,08	,00
	0	0	0	0	0	0	0	0	0
	4	1	0	1	2	0	1	1	0
2,06 – 2,11	**0**	**2**	**0**	**2**	**2**	**0**	**1**	**3**	**0**
	,00	,17	,00	,17	,25	,00	,08	,50	,00
	0	0	0	0	0	0	0	0	0
	0	1	0	1	2	0	1	4	0
3,00 - 3,05	**3**	**7**	**0**	**2**	**3**	**1**	**3**	**8**	**1**
	,42	2,92	,00	,67	,33	,08	,42	8,25	,50
	0	0	0	0	0	0	0	0	0
	3	15	0	7	2	1	2	55	6
3,06 - 3,11	**1**	**6**	**0**	**3**	**2**	**1**	**4**	**10**	**3**
	,25	1,33	,00	,33	,25	,17	,83	5,08	,42
	0	0	0	0	0	0	0	0	0
	3	5	0	2	2	2	4	14	2
4,00 - 4,05	**3**	**7**	**0**	**3**	**6**	**0**	**5**	**8**	**4**
	,50	1,33	,00	,50	,67	,00	,67	3,83	,33
	0	0	0	0	0	0	0	0	0
	3	7	0	3	2	0	3	17	1
4,06 - 4,11	**2**	**5**	**0**	**3**	**5**	**1**	**4**	**8**	**2**
	,17	2,58	,00	,58	,50	,17	2,33	3,50	,25
	0	0	0	0	0	0	0	0	0
	1	19	0	3	2	2	25	12	2
5,00 - 5,11	**1**	**5**	**1**	**1**	**8**	**1**	**6**	**9**	**4**
	1,00	2,42	,08	1,00	1,92	,08	1,92	4,42	,92
	0	0	0	0	0	0	0	0	0
	12	14	1	12	5	1	8	19	8
6,00 - 6,11	**2**	**3**	**0**	**3**	**6**	**1**	**3**	**10**	**2**
	,33	,75	,00	3,58	1,08	,08	1,33	6,33	,17
	0	0	0	0	0	0	0	0	0
	3	5	0	40	4	1	13	32	1
TOTAL									
	,38	1,45	,01	,86	,65	,07	,96	4,00	,32
	0	0	0	0	0	0	0	0	0
	12	19	1	40	5	2	25	55	8

Appendix G. (continued.)

Frequencies, means, range of minimum and maximum number of tense usages derived from contextual raw scores

Verb Structure:

	CONTEXT 1			CONTEXT 2			CONTEXT 3		
	Basic	**Derived**	**Complex**	**Basic**	**Derived**	**Complex**	**Basic**	**Derived**	**Complex**
AGE ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓	Frequency Mean Minimum Maximum ↓
2,00 - 2,05	**12**	**9**	**2**	**7**	**5**	**1**	**12**	**10**	**5**
	17,92	2,67	,42	3,75	1,67	,08	43,42	6,42	,58
	1	0	0	0	0	0	2	0	0
	42	7	3	13	8	1	98	20	2
2,06 – 2,11	**12**	**11**	**4**	**12**	**10**	**3**	**12**	**11**	**7**
	14,75	4,83	,50	6,50	3,75	,42	38,42	12,75	2,17
	5	0	0	1	0	0	9	0	0
	30	15	2	14	10	2	129	34	9
3,00 - 3,05	**11**	**12**	**7**	**11**	**12**	**3**	**12**	**11**	**2**
	24,08	7,08	,75	11,33	3,67	,25	62,17	14,42	3,25
	0	3	0	0	1	0	3	0	0
	72	13	2	32	9	1	143	47	12
3,06 - 3,11	**12**	**12**	**2**	**12**	**12**	**6**	**12**	**12**	**8**
	23,33	7,33	,17	11,08	3,75	1,00	70,50	21,33	4,83
	9	3	0	4	1	0	16	3	0
	40	15	1	25	9	7	189	43	19
4,00 - 4,05	**12**	**12**	**4**	**12**	**12**	**6**	**12**	**12**	**9**
	26,00	8,42	,75	14,08	6,42	1,25	68,58	18,33	2,42
	7	4	0	3	2	0	5	2	0
	62	15	4	27	13	5	124	35	7
4,06 - 4,11	**12**	**12**	**7**	**11**	**12**	**2**	**12**	**12**	**10**
	29,42	11,75	1,25	8,75	4,00	,25	58,42	27,58	3,50
	14	4	0	0	1	0	4	3	0
	59	24	3	18	7	2	126	62	12
5,00 - 5,11	**12**	**12**	**6**	**12**	**12**	**8**	**12**	**12**	**10**
	20,17	8,92	,75	20,25	7,25	1,67	98,33	30,00	7,00
	10	4	0	4	3	0	12	2	0
	31	17	2	57	14	6	242	73	36
6,00 - 6,11	**12**	**12**	**9**	**12**	**12**	**6**	**12**	**12**	**10**
	24,58	9,33	1,42	28,50	7,00	1,50	99,75	28,67	3,33
	6	4	0	5	1	0	20	6	0
	46	18	4	57	20	6	185	51	7
TOTAL									
	22,53	7,54	,75	13,03	4,69	,80	67,45	19,94	3,39
	0	0	0	0	0	0	2	0	0
	72	24	4	57	20	7	242	73	36

Appendix H. Summary Table for significant statistical findings

Grammatical Categories		Statistical Results		
		Context Main Effect	Age Main Effect	Interaction Effect Context x Age
Indicatives	Definite Past	X	X	
	Indefinite Past	X	X	X
	Present Progressive	X		
	Aorist	X	X	
	Future	X		
	All Indicatives			
Desiderative Tenses	Conditional	X		
	Necessity			
	Optative	X		
	Imperative	X	X	
	All Desideratives	X	X	
Compound Tenses	Imperfect	X		
	Narrative		X	
	Conditional	X		
	All Compound Tenses			
Verb Structures	Basic Verbs	X		
	Derived Verbs	X		
	Complex Verbs			
	Total Verb-tense Classification	X		

Appendix I. The percent-means of childrens' overall indicative, desiderative, compound and overall verb-tense usage

	CONTEXT 1				CONTEXT 2				CONTEXT 3			
Age Group	Indicatives	Desiderstives	Compound Tenses	All Verb-tenses	Indicatives	Desiderstives	Compound Tenses	All Verb-tenses	Indicatives	Desiderstives	Compound Tenses	All Verb-tenses
2,00 - 2,05	15,58	8,67	,29	24,56	50,01	10,69	2,41	63,12	17,14	14,56	,07	31,77
2,06 - 2,11	22,83	3,50	,15	26,49	27,19	3,86	1,30	32,35	21,88	8,73	,44	31,06
3,00 - 3,05	19,37	2,45	2,58	24,42	26,69	3,12	1,25	31,07	15,79	6,26	2,08	24,14
3,06 - 3,11	24,46	,48	1,25	26,20	26,25	1,14	1,19	28,60	22,03	4,63	1,73	28,40
4,00 - 4,05	24,29	1,35	1,18	26,82	25,67	,50	2,73	28,91	20,78	5,90	1,22	27,90
4,06 - 4,11	24,67	1,60	1,78	28,05	23,14	1,90	2,50	27,56	19,91	6,74	1,42	28,08
5,00 - 5,11	21,35	,18	3,14	24,68	27,87	2,28	6,07	36,22	25,87	2,14	1,76	29,78
6,00 - 6,11	23,05	,61	1,18	24,85	19,63	3,51	2,06	25,20	24,68	1,90	1,74	28,32
TOTAL	21,95	2,35	1,44	25,76	28,31	3,38	2,44	34,13	21,01	6,36	1,31	28,68

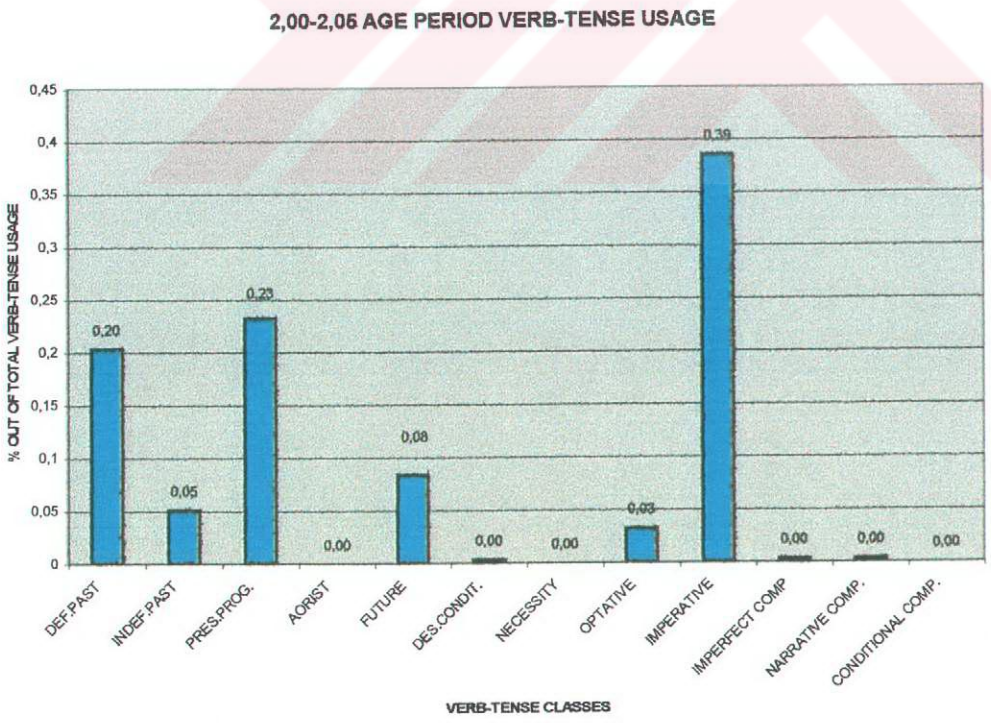
Appendix J. Within age differences in the frequency and emergence of verb-tense and verb structure categories

Verb-tense and Verb Structure Usage in Age 2

2-year-olds used verb-tenses in the following frequency sequence, calculated out of total verb-tense usage. Figure 2 displays the percentages of verb-tense usage :

imperative	39 %
present progressive	23 %
definite past	20 %
future	08 %
indefinite past	05 %
optative	03 %
desiderative conditional	00 %
imperfect compound	00 %
narrative compound	*00 %*
conditional compound	*00 %*
aorist	00 %
necessity	00 %

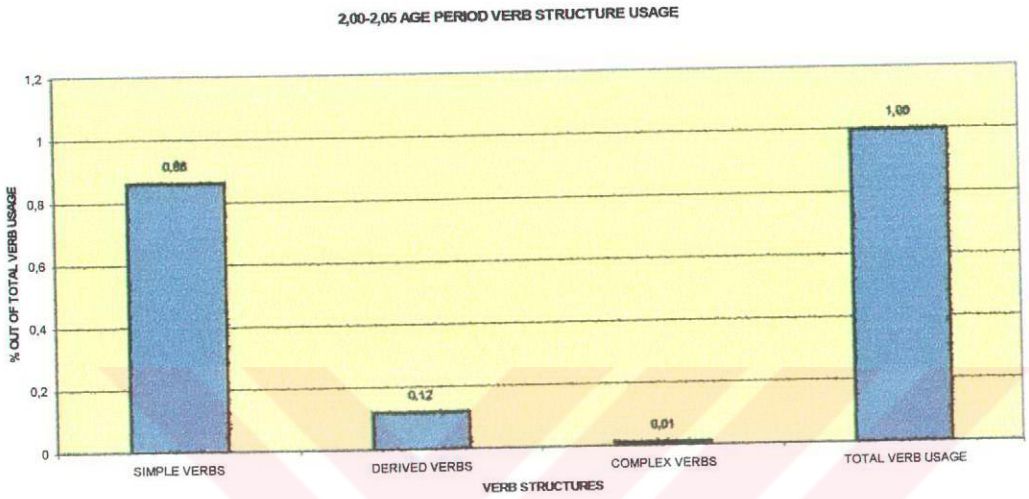
Figure 2: Percentages of verb-tense usage out of total verb-tense usage at age 2



2-year-olds used verb structures in the following frequency sequence, calculated out of total verb-tense usage. Figure 3 displays the percentages of verb structure usage :

simple verbs	86 %
derived verbs	12 %
complex verbs	01 %

Figure 3: Percentages of verb structure usage out of total verb usage at age 2

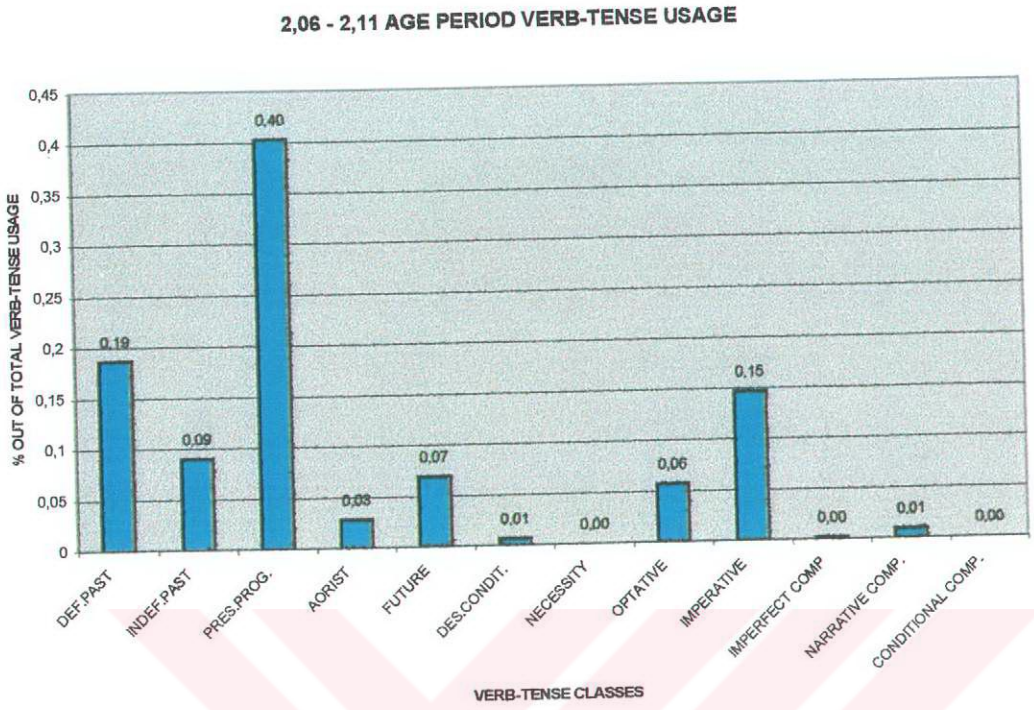


Verb-tense and Verb Structure Usage in Age 2 ½

2 ½ -year-olds used verb-tenses in the following frequency sequence, calculated out of total verb-tense usage. Figure 4 displays the percentages of verb-tense usage :

present progressive	40 %
definite past	19 %
imperative	15%
indefinite past	09 %
future	07 %
optative	06 %
aorist	03 %
desiderative conditional	01 %
narrative compound	01 %
imperfect compound	00 %
conditional compound	00 %
necessity	*00 %*

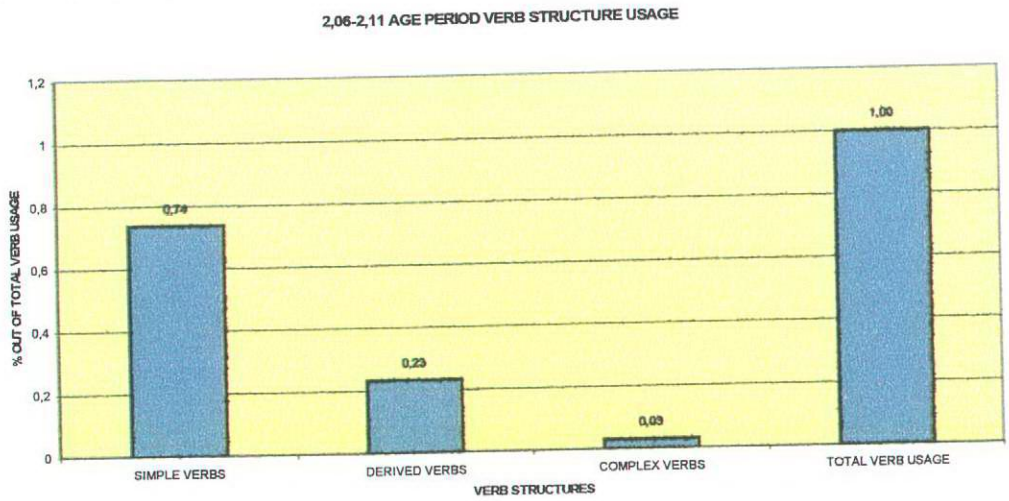
Figure 4: Percentages of verb-tense usage out of total verb-tense usage at age 2 ½



2 ½ -year-olds used verb structures in the following frequency sequence, calculated out of total verb-tense usage. Figure 5 displays the percentages of verb structure usage :

simple verbs	74 %
derived verbs	23 %
complex verbs	03 %

Figure 5: Percentages of verb structure usage out of total verb usage at age 2 ½ .

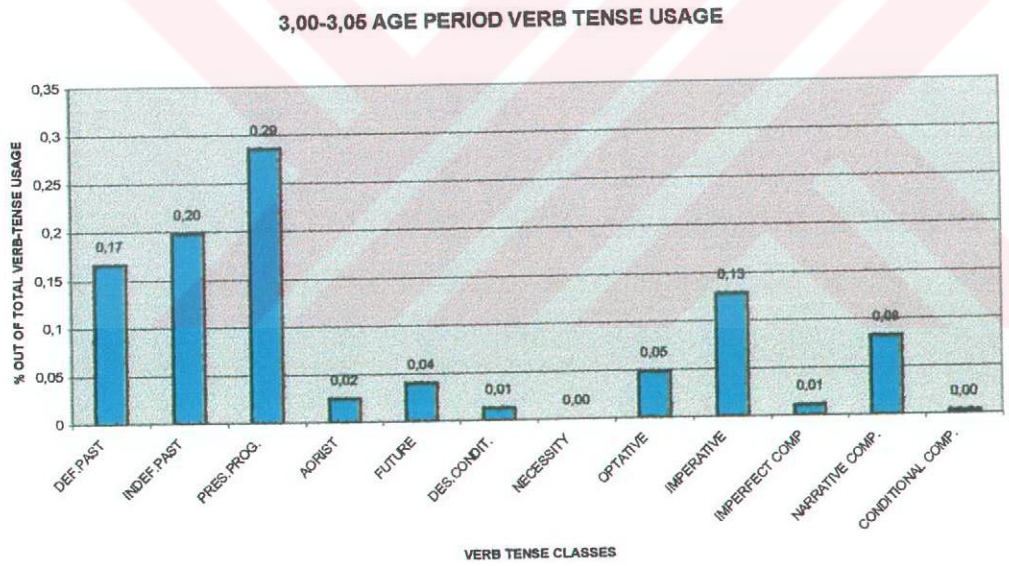


Verb-tense and Verb Structure Usage in Age 3

3-year-olds used verb-tenses in the following frequency sequence, calculated out of total verb-tense usage. Figure 6 displays the percentages of verb-tense usage :

present progressive	29 %
indefinite past	20 %
definite past	17 %
imperfect	13 %
narrative compound	08 %
optative	05 %
future	04 %
aorist	02 %
desiderative conditional	01 %
imperfect compound	01 %
conditional compound	*00 %*
necessity	*00 %*

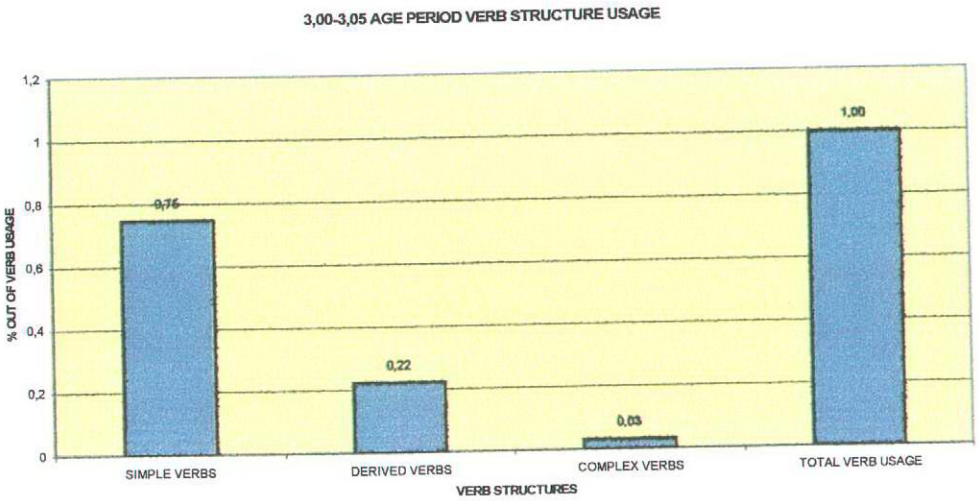
Figure 6: Percentages of verb-tense usage out of total verb-tense usage at age 3



3-year-olds used verb structures in the following frequency sequence, calculated out of total verb-tense usage. Figure 7 displays the percentages of verb structure usage :

simple verbs	75 %
derived verbs	22 %
complex verbs	03 %

Figure 7: Percentages of verb structure usage out of total verb usage at age 3

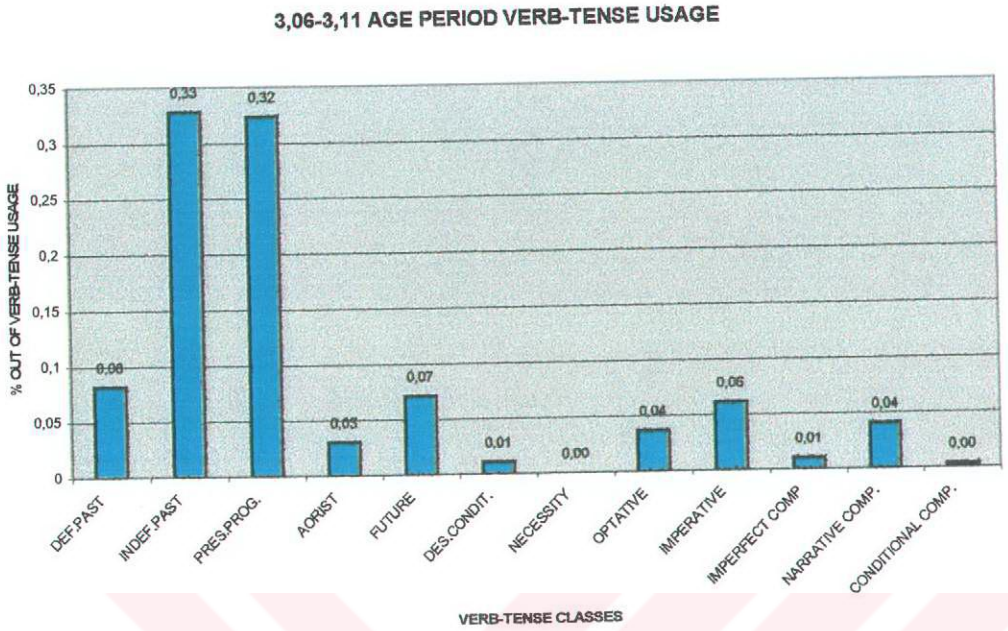


Verb-Tense and Verb Structure Usage in Age 3 ½

3 ½ -year-olds used verb-tenses in the following frequency sequence, calculated out of total verb-tense usage. Figure 8 displays the percentages of verb-tense usage :

indefinite past	33 %
present progressive	32 %
definite past	08 %
future	07 %
imperative	06 %
optative	04 %
narrative compound	04 %
aorist	03 %
desiderative compound	01 %
imperfect compound	01 %
conditional compound	00 %
necessity	00 %

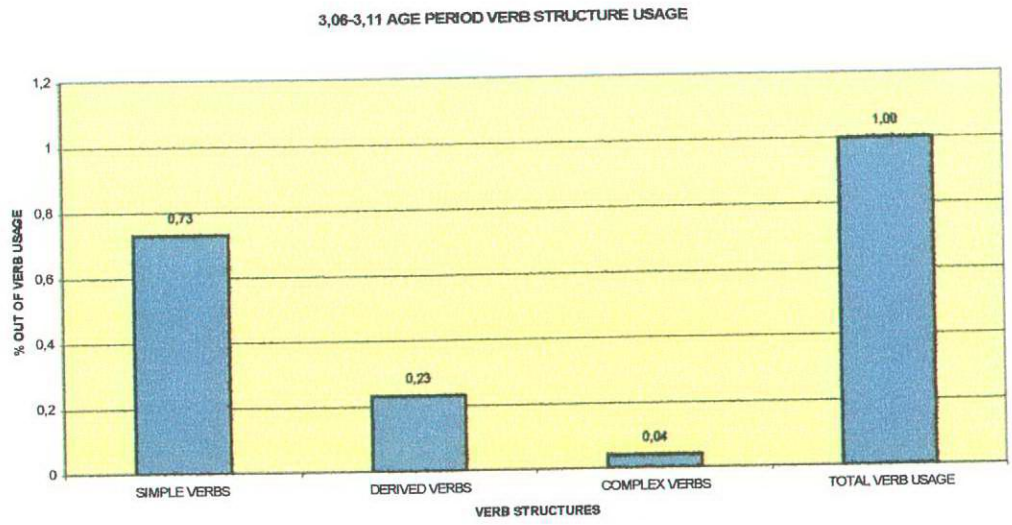
Figure 8: Percentages of verb-tense usage out of total verb-tense usage at age 3 ½



3 ½ -year-olds used verb structures in the following frequency sequence, calculated out of total verb-tense usage. Figure 9 displays the percentages of verb structure usage :

simple verbs	73 %
derived verbs	23 %
complex verbs	04 %

Figure 9: Percentages of verb structure usage out of total verb usage at age 3 ½

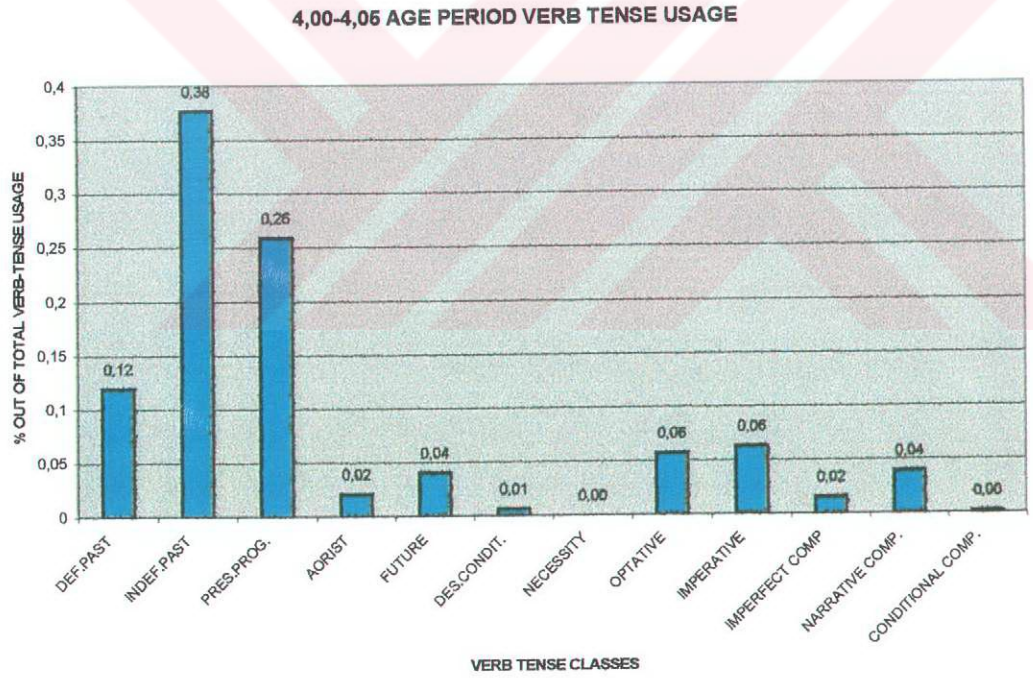


Verb-tense and Verb Structure Usage in age 4

4 -year-olds used verb-tenses in the following frequency sequence, calculated out of total verb-tense usage. Figure 10 displays the percentages of verb-tense usage:

indefinite past	38 %
present progressive	26 %
definite past	12 %
imperative	06 %
optative	06 %
narrative compound	04 %
future	04 %
aorist	02 %
imperfect compound	02 %
desiderative conditional	01 %
conditional compound	00 %
necessity	00 %

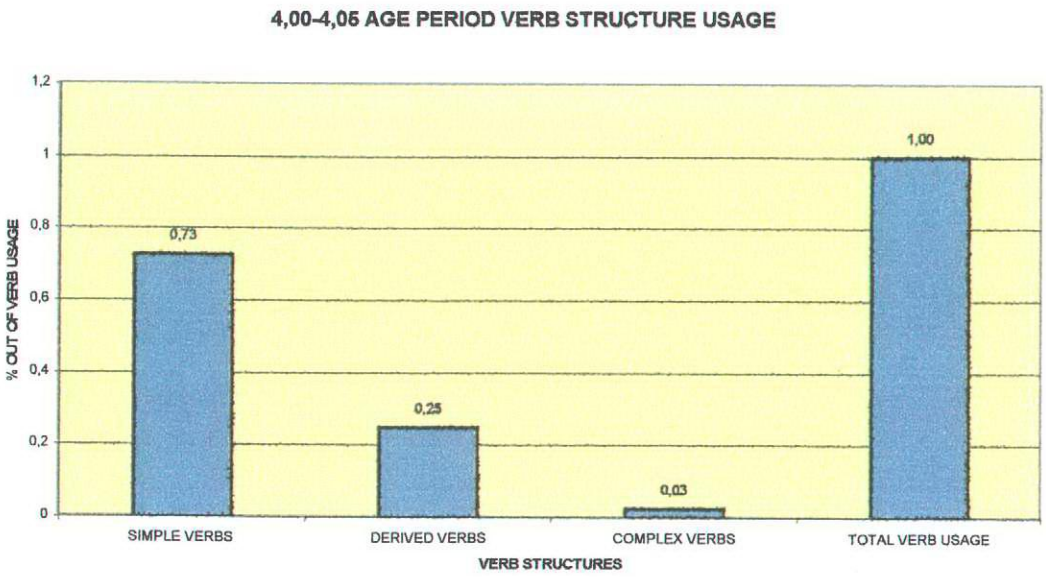
Figure 10: Percentages of verb-tense usage out of total verb-tense usage at age 4



4 -year-olds used verb structures in the following frequency sequence, calculated out of total verb-tense usage. Figure 11 displays the percentages of verb structure usage

simple verbs	73 %
derived verbs	25 %
complex verbs	03 %

Figure 11: Percentages of verb structure usage out of total verb usage at age 4

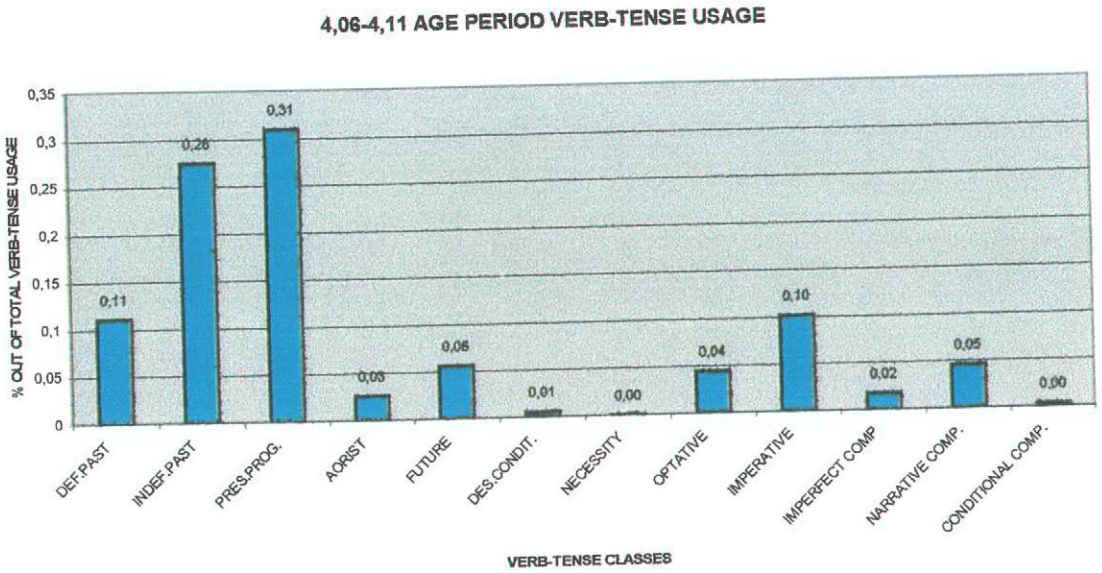


Verb-Tense and Verb Structure Usage in Age 4 ½

4½ -year-olds used verb-tenses in the following frequency sequence, calculated out of total verb-tense usage. Figure 12 displays the percentages of verb-tense usage :

present progressive	31 %
indefinite past	28 %
definite past	11 %
imperative	10 %
future	6 %
narrative compound	5 %
optative	4 %
aorist	3 %
imperfect compound	2 %
desiderative conditional	1 %
conditional compound	0 %
necessity	0 %

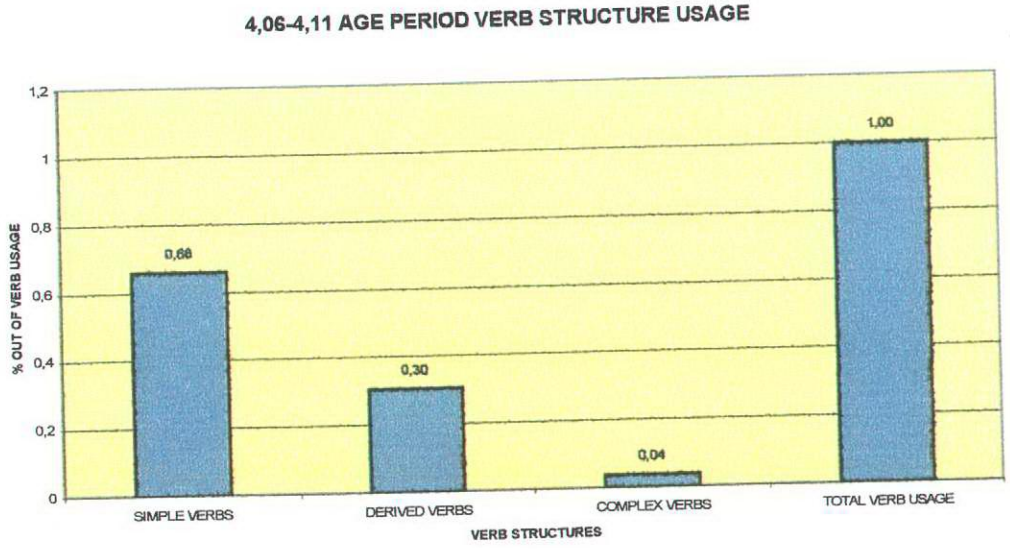
Figure 12: Percentages of verb-tense usage out of total verb-tense usage at age 4 ½



4 ½ -year-olds used verb structures in the following frequency sequence, calculated out of total verb-tense usage. Figure 13 displays the percentages of verb structure usage :

simple verbs	66 %
derived verbs	30 %
complex verbs	04 %

Figure 13: Percentages of verb structure usage out of total verb usage at age 4 ½

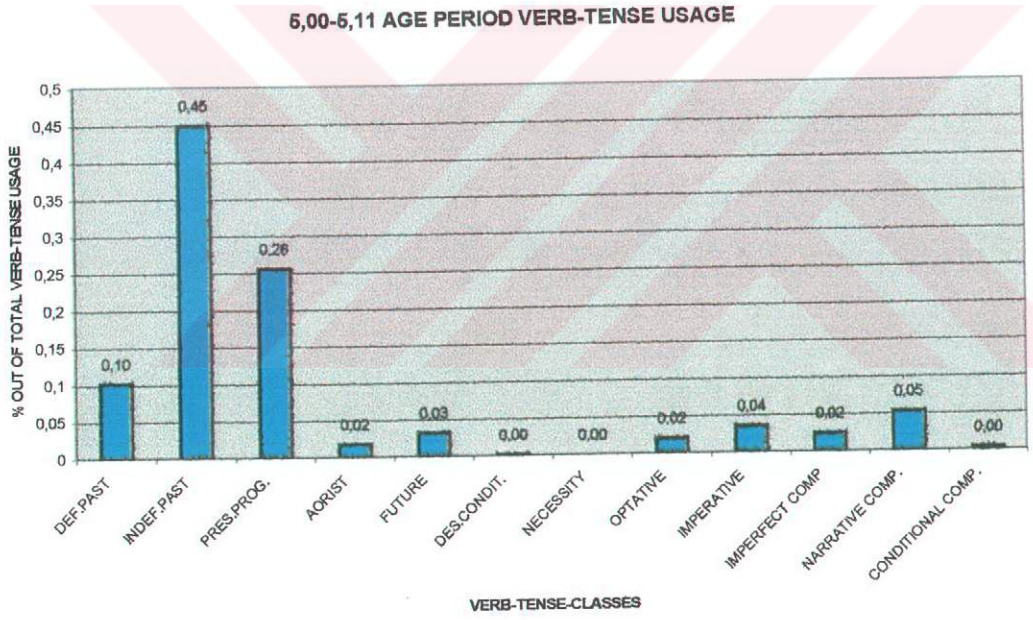


Verb-tense and Verb Structure Usage in age 5

5 -year-olds used verb-tenses in the following frequency sequence, calculated out of total verb-tense usage. Figure 14 displays the percentages of verb-tense usage:

indefinite past	45 %
present progressive	26 %
definite past	10 %
narrative compound	06 %
imperative	04 %
future	03 %
imperfect compound	02 %
optative	02 %
aorist	02 %
desiderative conditional	00 %
conditional compound	00 %
necessity	00 %

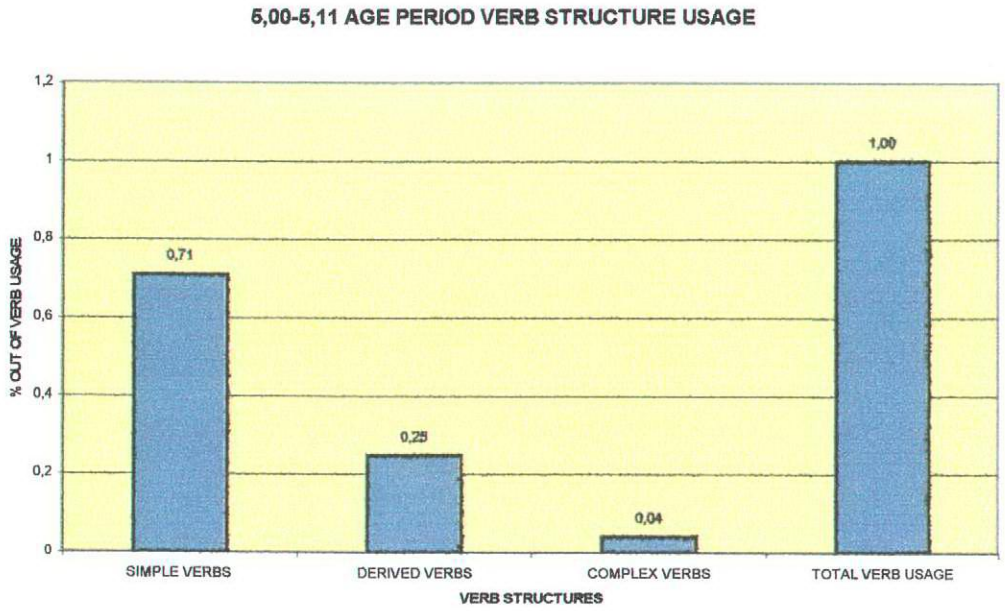
Figure 14: Percentages of verb-tense usage out of total verb-tense usage at age 5



5 -year-olds used verb structures in the following frequency sequence, calculated out of total verb-tense usage. Figure 15 displays the percentages of verb structure usage :

simple verbs	71 %
derived verbs	25 %
complex verbs	04 %

Figure 15: Percentages of verb structure usage out of total verb usage at age 5

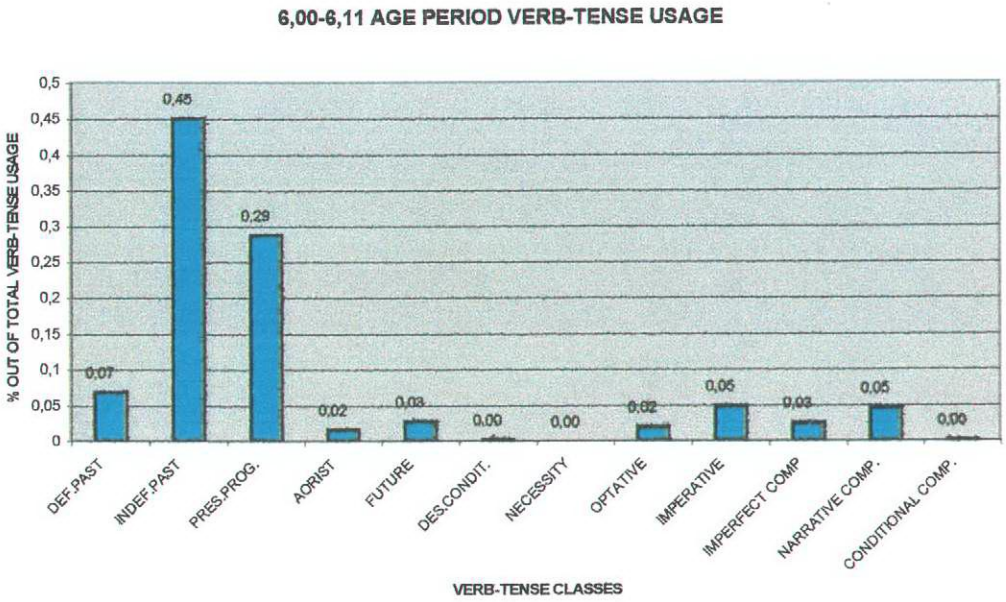


Verb-tense and Verb Structure Usage in age 6

6-year-olds used verb-tenses in the following frequency sequence, calculated out of total verb-tense usage. Figure 16 displays the percentages of verb-tense usage:

indefinite past	45 %
present progressive	29 %
definite past	07 %
imperative	05 %
narrative compound	05 %
future	03 %
imperfect compound	03 %
optative	02 %
aorist	02 %
desiderative conditional	00 %
conditional compound	00 %
necessity	00 %

Figure 16: Percentages of verb-tense usage out of total verb-tense usage at age 6



6 -year-olds used verb structures in the following frequency sequence, calculated out of total verb-tense usage. Figure 17 displays the percentages of verb structure usage :

simple verbs	74 %
derived verbs	22 %
complex verbs	03 %

Figure 17: Percentages of verb structure usage out of total verb usage at age 6