Understanding the Gestural, Lexical and Grammatical Development of Turkish-Speaking Infants and Toddlers: Validity Study of the Turkish Communicative Development Inventory (TIGE)

by

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STATEMENT of AUTHORSHIP

This thesis contains no material which has been accepted for any award or any other degree or diploma in any university or other institution. It is affirmed by the candidate that, to the best of her knowledge, the thesis contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

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ABSTRACT

In recognition of the importance of language development as an indicator of general development and later academic achievement, one of the concerns in the field of developmental psychology has been to determine effective and age-appropriate methods of language assessment for the very beginnings of language learning. This M.A. study evaluated the psychometric properties of such a tool for early Turkish language development, by assessing the concurrent validity of the Turkish Communicative Development Inventory (TIGE) (Aksu-Koç, Küntay, Acarlar, Maviş, Sofu, Topbaş & Turan, 2011), the Turkish adaptation of the MacArthur-Bates CDI (Fenson, Dale, Reznick, Thal, Bates, Hartung, Pethick, & Reilly, 1993). TIGE has two parental report forms: TIGE-I aims to assess the communicative behavior (e.g. gestures) and lexicon of 8-16 month old infants and TIGE-II the lexical and grammatical competence of 16-36 month-old children.

The objective of the current study was to compare the degree of association between gestural, lexical and grammatical scores of 8-36 month-old native Turkish learners obtained from TIGE and similar scores drawn from spontaneous language use in child-mother interaction contexts: an unstructured free activity setting, a joint picture-book reading context, and a toy play setting.

The validity study was carried out with a cross-sectional sample of 107 Turkish speaking mother-child dyads with different socio-educational backgrounds in the same regions of Turkey

where the mother report data were collected. The videos of the mother-child interactions were transcribed and coded by using the CHAT (Codes for the Human Analysis of Transcripts) format, the standard transcription system for the CHILDES Project (MacWhinney, 2000).

For the purposes of this study, expressive vocabulary scores (number of words produced) were calculated for both TIGE-I and TIGE-II. Besides, two other measures of expressive grammar were obtained from TIGE-II: (i) mean length of utterance averaged over three longest utterances reported [M3L] and (ii) a morphosyntactic complexity score based on the number of noun and verb inflections used. Similar measures of vocabulary (number of different words, and total number of words) and grammar (mean length of utterance) were derived from the spontaneous speech samples obtained in the mother-child interaction contexts. In addition, types of actions and gestures reported by the mother on TIGE-I as produced by their children were compared with the observations of action and gesture use during spontaneous speech contexts.

Results of this study revealed that both TIGE-I and TIGE-II demonstrate good concurrent validity, and provide adequate assessment of gestural, lexical and grammatical abilities of children at the ages studied. In light of the rank-ordering analyses it is possible to conclude that the Turkish adaptation of the MacArthur-Bates CDI provides similar levels of early communicative and linguistic competence of children to such competence displayed spontaneously in interactions with caregivers, suggesting that mothers, irrespective of their education level, were generally able to provide accurate information about their children's language competence between 8 months to 36 months of age. Consequently, TIGE inventories are expected to respond to the need for a valid assessment tool for the early language

development of Turkish-speaking children. TIGE will not only allow the investigation of normal course and pace of language acquisition in Turkish, but also the identification and intervention of language delays or disorders.

Keywords: Language acquisition and development, gestures, vocabulary, grammar, Turkish, assessment tool

ÖZET

Dil gelişiminin, genel gelişim ve ileriki dönem akademik başarının önemli göstergelerinden biri olarak kabul edilmesi ile birlikte, erken dönem dil gelişim düzeylerini belirlemekte kullanılacak etkili ve geçerli ölçme ve değerlendirme araçlarının oluşturulması, gelişim psikolojisi alanını meşgul eden önemli araştırma konularından biri olmaktadır. Bu çalışma, anadili olarak Türkçe öğrenmekte olan çocukların erken dönem dil gelişim düzeylerini belirlemekte kullanılmak amacıyla, MacArthur-Bates Communicative Development Inventory'nin (MB-CDI) (Fenson, Dale, Reznick, Thal, Bates, Hartung, Pethick, & Reilly, 1993) Türkçe'ye uyarlama çalışması olan Türkçe İletişim Gelişimi Envanteri'nin (TİGE) (Aksu-Koç, Küntay, Acarlar, Maviş, Sofu, Topbaş & Turan, 2011) psikometrik özelliklerinin incelendiği bir eşzamanlı geçerlik çalışmasıdır. TİGE iki envanterden oluşmaktadır: TİGE-I, 8-16 aylık bebeklerin iletişim davranışları (jestler) ve sözcük bilgisini, TİGE-II ise 16-36 aylık çocukların sözcük bilgisi ve dilbilgisi yetisini ölçmeyi amaçlamaktadır. Bu çalışmanın amacı, TİGE-I ve TİGE-II ölçekleri ile elde edilen 8-36 aylık çocukların sözcük dağarcığı, dilbilgisi ve iletişim davranışları hakkında annelerden toplanan veriler ile çocukların konuşma örnekleminden toplanan verilerin arasındaki ilişkiyi karşılaştırmaktır. Bu amaçla, TİGE'den alınan veriler annelerle evde mülakat yapılarak, konuşma örnekleminden alınan veriler ise aynı ziyarette çocuk ve annenin istedikleri gibi oynamaları, araştırmacıların getirdiği oyuncaklarla oynamaları ve bir

resimli hikaye kitabına bakmaları esnasındaki ortalama bir saatlik konuşmaları videoya kaydedilerek toplanmıştır.

Geçerlik çalışmasında, farklı eğitim düzeyinden 107 anne ile bir kez görüşülerek kesitsel bir çalışma yapılarak, çocuklarının dil anlama ve dil üretme becerileri hakkında bilgi TİGE aracılığıyla alınmıştır. Anne ile çocuğun etkileşiminin ve konuşmalarının video kayıtlarından çeviri yazımı yapılmış ve bu çeviri yazımı CHILDES Projesinin (MacWhinney, 2000) standart çeviri yazım formatı olan CHAT formatına göre kodlanmıştır.

Bu çalışma kapsamında, TİGE-I örneklemine giren çocukların anladıkları ve ürettikleri sözcük sayıları ile kullandıkları jestler, TİGE-II örnekleminde ise çocukların ürettikleri sözcük sayısı ile kullandıkları dilbilgisel yapılar (annenin bildirdiği en uzun üç cümleden hesaplanan ortalama sözce uzunluğu ve Karmaşık Tümce Yapıları alt ölçeği puanı) belirlenmiştir. Konuşma örnekleminden de benzer veriler (çocukların kullandıkları jestler, ürettikleri farklı sözcük sayısı, ve ortalama sözce uzunluğu) saptanarak korelasyonlarına ve sıralamalarına bakılmıştır.

Bulgular TİGE-I ve TİGE-II envanterlerinin eşzamanlı geçerliğinin yüksek düzeyde olduğunu ve envanterlerin, çocukların jestler, sözcük bilgisi ve dilbilgisi becerilerini uygun bir biçimde ölçtüğünü ortaya koymuştur. Çalışmanın bulguları doğrultusunda, farklı eğitim düzeyinden annelerin, eğitim seviyelerinden bağımsız olarak, 8-36 ay yaş dilimindeki çocuklarının dil ve iletişim becerileri üzerine verdikleri bilgilerin, çocuktan toplanan veriyle tutarlılığı saptanmıştır. Sonuç olarak, TİGE'nin Türkçe konuşan çocukların erken dönem dil ve iletişim gelişimi becerilerini ölçme ve değerlendirme aracı ihtiyacına cevap vermesi beklenmektedir. TİGE sadece Türkçede erken dönem dil edinimi süreçlerinin ölçülmesi ve

araştırılmasına değil, aynı zamanda dil gelişimi açısından gecikme ya da bozuklukların değerlendirilmesi ve müdahelesine de imkan sağlayacaktır.

Anahtar Kelimeler: Dil edinimi ve gelişimi, sözcük dağarcığı, dilbilgisi, jestler, Türkçe, ölçme aracı

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CHAPTER 1: INTRODUCTION

A major developmental task that infants encounter is learning to communicate by acquiring language. The development of language is a complex process. Nevertheless, all normal children who come to the world learn a language rapidly and effortlessly without direct instruction, and master it within a few years (Bloom, 2000; Stromswold, 2000). In the normal course of development, if a child is exposed to a language, it is inevitable to acquire that language (Hoff, 2006).

Even though language acquisition and its development generally follow a similar pattern across children, language comprehension and production skills vary widely across individuals (Bates, Dale, & Thal, 1995). Individual differences in language development are partially related to the variation in children's cognitive-perceptual capacities in addition to the cultural, social and linguistic environments children are exposed to (Hoff, 2006). Leaving aside children's cognitive-perceptual capacities, the nature of the language and the socio-cultural uses of that language influence the content and the amount of children's language skills. Differences in the quantity and quality of the linguistic input children receive affect the variability in the rate of language development.

Although somewhat late entry into language usage is considered normal, early language ability is an important determinant of later language and cognitive development (Marchman & Fernald, 2008; Snow, 1999; Weisman & Snow, 2001). Indeed, language delay may be indicative of a serious developmental or learning problem, which may continue into the school years.

Therefore, increasingly becoming aware of the importance of language development as an indicator of general development, parents seek assessment of their children particularly when they are concerned about their children's expressive language delay (Feldman, Dollaghan, Campbell, Kurs-Lasky, Janosky, & Paradise, 2000). Given the importance of language development for later academic achievement (Snow, Burns & Griffin, 1998), understanding the course and pace of early language development is of interest to researchers and practitioners in addition to parents. Consequently, assessment tools have come to play an essential role in the evaluation of young children's language development during the very beginnings of life. In fact, assessing linguistic and communicative abilities during the first few years of language learning has been important but also slightly problematic for researchers in the field of developmental psychology because it has been hard to determine effective, practical and age-appropriate methods of language assessment. To meet these challenges, parent reports have been widely used to evaluate infants' and toddlers' language development (Dale, Bates, Reznick, & Morisset, 1989; Dale & Fenson 1996; Dale & Goodman, 2005).

Caregivers, particularly mothers, may be considered the most informed sources on their children's communicative repertoire as they have the opportunity to observe their children in socially patterned activities which they carry out with their children, such as daily routines, give-and-take games; thus parents are usually witness to the recent developmental changes in their children's language (Feldman et al., 2000) and can potentially provide a comprehensive and representative assessment of their children's early language skills (Fenson, Dale, Reznick, Bates, Thal & Pethick 1994; Pan, 2010).

Hence, one of the commonly used tools for assessing language development in children, and the variability of language skills among children is parent reports. Parent reports are practical and effective by allowing the collection of very large samples at low cost in terms of human resources and time investment compared to standardized clinical or laboratory assessments, which may be underrepresentative of the child's abilities due to the fact that young children often have difficulty cooperating with a stranger in unfamiliar settings in a limited time span (Dale & Goodman, 2005; Feldman, Dale, Campbell, Colborn, Kurs-Lasky, Rockette, 2005; Pan, 2010). In addition to these advantages, parent reports are appropriate for use as screening instruments to detect language delay by pediatricians and other health providers (Fenson et al., 1993; Miller, Sedey, & Miolo, 1995; Thal, O'Hanlon, Clemmons, & Frailin, 1999; Yoder, Warren, & Biggar, 1997). Although advantageous on all these grounds, concerns have been raised about the validity of parent reports, particularly with respect to minority and low-income families. Parents may be prone to bias; parental education may influence assessments (Feldman et al., 2000), or parents may either overestimate or underestimate their child's abilities (Roberts, Burchinal, and Durham, 1999; Oliver et al., 2003; Reese & Read, 2000). Therefore, validity studies of parent reports that support the concurrent or predictive associations between parent reports and other language measures are very much needed. Only when we are confident that a certain parent report instrument can represent children's linguistic competence as determined by direct and well-established measures, we can be sure of its rigorousness in addition to its other benefits such as being practical and low-cost.

This M.A. study contributes to the effort of having a reliable, valid, inexpensive, and efficient screening tool for language development that can also raise flags for early identification

of delayed or deviant language development. The purpose of this study is to evaluate the psychometric properties of the Turkish Communicative Development Inventory (Türkçe İletişim Gelişimi Envanteri - TIGE)" as an assessment tool by examining its concurrent validity. TIGE is an adaptation of the Mac-Arthur Bates Communicative Development Inventory (the MB-CDI) (Fenson, Dale, Reznick, Thal, Bates, Hartung, Pethick, & Reilly, 1993; Fenson, et al., 1994) into Turkish, which was completed in 2011 (Aksu-Koç, Küntay, Acarlar, Maviş, Sofu, Topbaş & Turan, 2011). TIGE was designed to assess the language development of 8-36 month-old native Turkish learners and consists of two forms: TIGE-I aims to assess the communicative behavior (e.g. gestures) and lexicon of 8 to 16 month old infants, TIGE-II aims to assess the lexical and grammatical competence of 16 to 36 month old children. Before the details of the present study are presented, previous research that examines the validity of the widely used parent report, the MB-CDI, and the adaptations of the American MB-CDI to other languages will be reviewed.

CHAPTER 2: LITERATURE REVIEW

2.1. MacArthur-Bates Communicative Development Inventory (MB-CDI)

MacArthur-Bates Communicative Development Inventories (MB-CDI) (Fenson, Dale, Reznick, Thal, Bates, Hartung, Pethick, & Reilly, 1993; Fenson, et al., 1994) are one of the most commonly used standardized parent report inventories in large scale studies of early language development. MB-CDI is used to record typical course of language development of infants and toddlers including vocabulary acquisition, knowledge and use, as well as early grammar and provide normative data, in addition to identifying children whose early language is delayed (Fenson, 1994). MB-CDI was preceded by an earlier checklist developed by Elizabeth Bates and her colleagues, the Early Language Inventory (Dale, Bates, Reznick, & Morisset, 1989).

The MB-CDI has been normed in the US by a cross-sectional study of the vocabulary checklist method (Fenson et al., 1994). Fenson et al. (1994) analyzed data for over 1,800 (normally-developing English speaking North American children (N = 659 for the Infant form, and N = 1,130 for the Toddler form) between 8 and 30 months of age. The results of this study revealed developmental trends and provided a rich source of normative data on the gestural, lexical, and grammatical development of children in English. Moreover, the MB-CDI, as a measure of young children's language development at the time of testing, offers data on growth trends, variability, and gender differences.

The MB-CDI has two scales: the Infant Scale (covering 8 to 16 months) and the Toddler Scale (appropriate for 16 to 30 months). The Infant Scale includes items that assess word comprehension and production, symbolic behavior, communicative gesture, and nonverbal

imitation. The Toddler Scale examines word production and grammar, which include productive vocabulary, knowledge of irregular word forms, overgeneralization of word endings to irregular nouns, verbs and syntactic complexity.

The ease of administration and scoring of the MB-CDI with large samples allow researchers to examine variability in language development (Fenson et al., 1994). However, despite the advantages of the MB-CDI, the time required to complete the form restricts its applicability in many research or clinical settings, particularly when a rapid assessment of a child's language level is needed or when many other procedures must be carried out. In addition, low literacy or educational levels of some parents may also limit the ability to complete the forms in a reliable way. Therefore, the authors of the MB-CDI developed two 100-word short-form versions (Forms A and B) from the CDI-Toddler version (Fenson, Pethick, Renda, Cox, Dale, & Reznick, 2000). Fenson et al. used data from the CDI-Toddler norm study and selected words from the long CDI form until the maximum correlation between each short and the long form was obtained. The short form also asks parents if their child is combining words with possible answers as ''not yet", "sometimes", or "often''. Fenson et al. (2000) reported correlations of .74 (Form A) and .93 (Form B) when parents completed a short form and the full CDI-Toddler version after 2 weeks. Furthermore, Dale, Reznick, Thal, and Marchman (2001) designed a recent addition to the MB-CDI: The CDI-III for children ages from 30 to 42 months. The CDI-III evaluates productive vocabulary, syntactic maturity, and language use for children older than the ones who qualify for CDI-I and CDI-II. To date, CDI-III has been much less widely used than the CDI-I and CDI-II (Feldman et al., 2005).

The MB-CDI has been used to assess children's language levels in typical populations (e.g., Dale, Dionne, Eley, & Plomin, 2000; Fenson, 1994; Feldman, Dollaghan, Campbell, Colborn, Kurs-Lasky, Paradise, & Dale, 2003). It has also been used to identify and study children who are significantly behind their peers in language development in addition to determining the predictors of their language delay (Ellis Weismer & Evans, 2002; Foster-Cohen, Edgin, Champion & Woodward, 2007; Heilman, Ellis Weismer, Evans, & Hollar, 2005; Lyytinen, Eklund, & Lyytinen, 2003). It has also been used in samples of children with developmental disorders to describe the extent and nature of language delay and deviance in these populations (Caselli, Vicari, Longobardi, Lami, Pizzoli, & Stella, 1998; Feldman et al., 2003; Miller, Sedey, & Miolo, 1995; Heilmann et al., 2005; Thal, O'Hanlon, Clemmons, & Fralin, 1999; Thal, et al., 2007).

The MB-CDI has been adapted to 60 languages so far and are currently available world wide (see http://www.sci.sdsu.edu/cdi/adaptations_ol.htm), spanning Europe, Asia, Scandinavia, Africa, Russia, the Antipodes and the Far East (e.g., *Spanish* (*Mexican*) -Jackson-Maldonado, Thal, Marchman, Bates, Gutierrez-Clellen, 1993; *Korean* -Pae, 1993; *Japanese* -Ogura, Yamashita, Murase, Dale, 1993; *German* -Grimm, Doil, Müller, Wilde, 1996; *Icelandic* - Thordardottir & Ellis Weismer, 1996; *Hebrew* -Maital, Dromi, Sagi, Bornstein, 1998; *Swedish* - Eriksson & Berglund, 1999; *Finnish* -Laakso, Poikkeus & Lyytinen 1999; *Chinese* -Wu, 1997; *Mandarin* -Gelman & Tardif, 1998; *Turkish* - Aksu-Koç, Küntay, Acarlar, Maviş, Sofu, Topbaş & Turan, 2011) which reflects cross-linguistic interest in research on early language acquisition and development. *American Sign language* (Anderson & Reilly, 2002) and *British Sign language* (Woolfe T, Herman R, Roy P & Woll B, 2010) versions are present as well .These adaptations

also provide an extensive database for conducting cross-language comparisons (e.g., Bleses et al., 2008).

2.1.1. Acquisition of lexicon and lexical development based on the CDI data

Mental lexicon, a model of the knowledge of words in the brain, is an important aspect of language. It refers to the interconnection of words and meanings and their relationships to each other (grammatical knowledge; how to use words in combination with other words), rather than simply a list of words and definitions (Hoff, 2005).

Learning the lexicon is one of the major tasks of language acquisition. Common nouns and verbs are central in lexical development because they form the fundamental constructs that enable children to label people, objects and actions in their environment (Bloom, 2000; Hoff, 2005).

Feldman et al. (2000) found parents were sensitive to the developmental changes in their children's language. The scores on all the scales of the CDI-Infant Scale and CDI-Toddler Scale increased significantly with age. Even though there is an amount of variability among children in the onset and growth rate in the early lexicon -particularly high for language production after 12 months of age- (Bates, Dale & Thal, 1995; Devescovi, Caselli, Marchione, Pasqualetti, Reilly & Bates, 2005; Eriksson & Berglund, 1999; Hamilton, Plunkett & Schafer, 2000), children follow a curve that demonstrates a consistent and smoothly increasing rate in language acquisition (Bates et al., 1995; Thal, Bates, Goodman, & Jahn-Samilo, 1997). Findings from many MB-CDI studies have so far shown remarkably similar patterns of acquisition and development of the lexicon for comprehension and production (for comparisons across languages e.g. Bleses, Vach, Slott,

Wehberg, 2008; Bornstein, Cote, Maital, Painter, Park, Pascual, Pecheux, Ruel, Venuti, & Vyt, 2004; Caselli, Bates, Casadio, Fenson, L., Fenson, J., Sanderl, & Weir, 1995; Kovacevic, Jelaska & Brozovic, 1998; Maital, Dromi, Sagi & Bornstein, 2000).

Considering the quantitative aspect of children's early lexical development, numerous studies have revealed that children acquire the receptive lexicon earlier and faster than expressive lexicon, and there is a steady increase in the number of understood and produced words from the end of the first year of life to the end of the second year (e.g., Bates et al., 1988; Fenson et al., 1993; Jackson- Maldonado, Marchman, Thal, Bates & Gutierrez-Clellen, 1993). Developmental trends in English indicate that receptive vocabulary around 8 months is about 35 words, reaching 190 words at 16 months; expressive vocabulary that is acquired during the first months of the second year, around 10 words at 12 months and 64 words at 16 months, and reaches 315 words around the age 2 (range 89–534 words) (Bates, Dale & Thal, 1995). However, at this period, there is a wide range of variability among children. Fenson et al. (1993) demonstrated that expressive vocabulary may range from less than 9 to 198 words in typically developing 16-month-old children and from less than 41 to over 405 words in typically developing 20-month-old children. Dale and Fenson (1996) demonstrated that in the 680 word list of words toddlers are able to produce, 53% of those words are nouns (362), 18% are action words (123), and 9% are descriptive/adjective words (63). Bates et al. (1995) found that most children produce word combinations when their vocabulary size is between 100 and 200 words. When the lexicon size is between 50 and 200 words, majority of the words are nouns, but the acquisition of verbs has been found to begin earlier for receptive vocabulary in MB-CDI data.

There are also similarities in the content of the children's lexicon. The most frequently used semantic categories are people, particularly family members, objects used every day by the child, animal names, food, drinks, toys, and routines. When there are differences in the early lexicon in different languages, these are explained by the nature of the input (e.g. Bornstein et al., 2004; Tardif, Gelman, & Xu, 1999; Tardif, Fletcher, & Liang, 2004; Tardif, Fletcher, Liang & Kaciroti, 2009) or by the nature of the sound structure of the language (e.g. Bleses et al., 2008) or with differences in morphology across languages (e.g. Devescovi, Caselli, Marchione, Pasqualetti, Reilly & Bates, 2005; Tardif, Gelman, & Xu, 1999; Tardif, Fletcher, & Liang, 2004; Kovacevic et al., 1998). For instance, Bornstein and Cote (2004) found that Italian and Argentinian children produce more words for people such as 'aunt, grandmother' than American children of the same age. This probably reflects differences in the amount of contact with extended family. Bleses and her colleagues (2008) found that the trends of Danish children's early lexical development is similar to trends observed in other languages, yet the vocabulary comprehension score in the Danish children is the lowest among children of many other languages from age 1;0 on. This delay is explained by the possibility that the nature of Danish sound structure presents Danish children with a harder task of segmentation, impacting on a lower comprehension score.

Researchers also found that there is a relation between lexical and grammatical development in English (Bates & Goodman, 1999; Fenson et al., 1994), in Italian (Caselli et al., 1999), in Hebrew (Maital et al., 2000), and also in Spanish (Marchman, Martínez-Sussmann & Dale, 2004), and within a single language, vocabulary size is a more powerful predictor of grammatical development than age or gender, contributing significant variance to measures of grammar after age and gender are controlled (Bates et al., 1994; Bates, et al., 1995; Bauer,

Goldfield, & Reznick, 2002; Dale et al., 2000; Dale & Fenson, 1996; Fenson et al., 1994; Marchman & Bates, 1994). Some studies have shown, for example, that in toddlers who were simultaneously learning Spanish and English, the association between vocabulary and grammar was much stronger within each language than across languages (Marchman et al., 2004). Conboy and Thal (2006) also found that bilingual children who were simultaneously learning Spanish and English acquire the grammar of each language separately, since the grammatical abilities in each of the separate languages of bilingual toddlers were paced by their lexical development within the same language.

In brief, some of the main findings from English-speaking children have been replicated in studies of children speaking other languages although there are differences in the sampling procedures and sample sizes across the studies, which may limit their comparability.. These findings show that children show strikingly similar patterns of development in their early language acquisition across different languages. In general, as Dale and Goodman (2005) state,there is *i*) a large variation among children in the rate of acquisition, *ii*) acceleration in vocabulary growth in the second year of life and *iii*) an asymmetry between vocabulary comprehension and production, *iv*) vocabulary production is strongly related to grammatical development. Dale and Goodman (2005) also added that gestural communication is more strongly related to receptive vocabulary than productive vocabulary. There has been some studies about the interrelations of different dimensions of early language development that support this claim. Actions and Gestures are found to be more strongly correlated with word comprehension than word production inother studies (e.g. Caselli, Rinaldi, Stefanini, Volterra, 2012; Eriksson & Berglund, 1999; Fenson et al., 1994, Fenson et al., 2007; Kern, 2007).

In addition, previous research found that gender predicts some variability in the rates of language development. Sex differences favouring girls were found in the original US sample of over 1,800 children aged 8–30 months (Fenson, et al., 1994), but accounted for a small amount of variance (i.e., 1–2% of the variance). Galasworthy, Dionne, Dale and Plomin (2000) also found a female advantage in a sample of over 3,000 2-year-old twins born in England and Wales, accounting for about 3% of the variance. Reese and Read (2000) found that gender accounted for a more substantial amount of unique variance (10%) in total vocabulary scores in their more SES diverse sample of New Zealand infants. In general, girls outpaced boys in lexical and grammatical development, particularly regarding the age of language acquisition, vocabulary size, sentence length and verbal fluency (e.g. Acarlar, Aksu-Koç, Aktürk, Ates, Küntay, Maviş, Sofu, Topbaş, Turan, 2011; Bauer et al., 2002; Berglund, Eriksson, & Westerlund, 2005; Bornstein, Hahn and Hayne, 2004; Feldman et al., 2000; Feldman et al., 2005; Fenson, et al., 1994; Tardif et al., 2009). Nevertheless, studies on gender differences in verbal ability are inconclusive. Two studies on Swedish-speaking children and Hebrew-speaking children did not find any differences between girls and boys for vocabulary comprehension or vocabulary production (Eriksson & Berglund, 1999; Berglund & Eriksson, 2000; Maital et al., 2000). However, in Eriksson and Berglund (1999) a small female advantage was observed at the first sub-scale ("first communicative gestures sub-scale") of the gesture scales. Cross-linguistic differences in gender effects may reflect the influence of social variables, such as differences in gender-role behavior or stereotypes in different cultures. For instance, parents may talk more to girls than to boys and to be more responsive to talk from girls than boys in certain cultures more than others (Leaper, 2002).

2.1.2. The psychometric properties of the CDIs: Reliability and validity of the MB-CDI

Given the widespread use of the MB-CDI checklists to analyze developmental trends and variation in early lexical and grammatical acquisition, several investigations have been conducted to examine the reliability and validity of their use with typically developing infants and toddlers (e.g. Fenson, Marchman, Thal, Dale, Reznick, & Bates, 2007; Rescorla, Bernstein Ratner, Jusczyk, & Jusczyk, 2005), and with children who have various developmental disabilities (e.g. Miller, Sedey, & Miolo, 1995; Thal, O'Hanlon, Clemmons, & Frailin, 1999).

2.1.2.1. Reliability of the MB-CDI

Reliability is the extent to which a measuring instrument gives consistent results each time it is applied. Internal consistency is one of the indicators of reliability. Fenson et al. (1994) provided evidence of the CDI's reliability. The results of split-half correlations revealed high internal consistency for the three vocabulary scales contained in the two forms (infant comprehension, infant production, and toddler production) (Cronbach' alpha *r*s = .95, .96, and .96, respectively). All five major CDI scales of the two CDI inventories-the three vocabulary scales, infant gestures, and toddler sentence complexity-show good internal consistency. In addition, short-term test-retest reliability measures over about a one month time interval revealed that correlations between the two administrations were .87, .95, and .86 for comprehension, production, and gesture, respectively.

High internal consistency (*r* ranged from .82 to .99) of the MB-CDI was reported in other languages as well, such as for Danish (Bleses et al., 2008), Hebrew (Maital, Dromi, Sagi, & Bornstein, 2000), Swedish (Berglund & Eriksson, 2000) and Chinese (Tardif, Fletcher, Liang, &

Kaciroti, 2009). Nevertheless, Fenson et al. (1994; 2007) emphasized that estimation and interpretation of the reliability of a parent-report measure presents some difficulties. The validity and reliability of parental reports depends mostly on parents' ability to observe their children's comprehension and production of vocabulary and sentences. Critics pointed out that sometimes parents may be unreliable source of information due to their biases or potential memory errors (Stiles, 1994). Internal consistency and test-retest measures may produce artificially high correlations because of a halo effect (i.e., parents who overestimate their child's language skills in all areas) or because parents may remember and repeat their previous responses regardless of their accuracy (Fenson et al., 1994). Thus, they claimed that the best evidence for the reliability of the present measures comes from their substantial concurrent validity.

2.1.2.2. Concurrent validity of the MB-CDI

Concurrent validity as a measure has been widely used to establish the utility of an assessment procedure. Concurrent validity refers to the degree of correspondence between reported language abilities and direct assessment of language functioning or other accepted evaluations of the same underlying constructs (Fenson et al., 1994). It reflects the correlation of the scores on the parent-report measures with scores on standardized tests of language or measures of language in conversation. If the scores on MB-CDI have strong and statistically significant positive associations with scores on other validated measures at the same age, these findings would indicate that these measures assess the same construct and constitute strong evidence of concurrent validity.

It is common to examine the concurrent validity of MB-CDI by looking at scores obtained from MB-CDI and at scores on other standardized tests of language or measures of language in conversation. The most common measures of language that have been used in validation studies regarding the lexical, morphological and syntactic diversity include the total number of utterances produced, the number of word tokens (total number of words a child produces), the number of word types (the number of different word types a child produces) and the mean length of utterance (computed by dividing the total number of morphemes by the total number of utterances, MLU indicates the degree of syntactic complexity in utterances).

The concurrent validity of the MB-CDI measures that has been assessed in a number of studies comparing parent report with child performance on relevant language measures indicated that the correlations between laboratory measures and inventory scores are generally substantial, ranging from .33 to .85 (Fenson et.al. 1994). Fenson et al. (1994) claimed that although some studies that were conducted before 1994 used earlier versions of the MB-CDI forms, because the vocabulary checklists in the current inventories have changed slightly from those contained in earlier versions, the results of these studies are also valid.

Overall, moderate to strong correlations have been found between the MB-CDI–Words and Sentences version and direct language measures for typical populations, for children with developmental disabilities, and children with specific language delay. These studies will be summarized below.

The first validity study of the MB-CDI-Toddler form was carried out by Dale (1991). Dale (1991) used the MB-CDI-Toddler form to examine parents' ability to accurately report the

vocabulary and grammar skills of typically developing 2-year-olds who were English speaking. He compared lexical and grammatical scores on the MB-CDI-Toddler form to a number of language measures including The Expressive One Word Picture Vocabulary Test (Gardner, 1981), the total number of different words and the mean length of utterance in the spontaneous language sample, and the Index of Productive Syntax (Scarborough, 1990). The Index of Productive Syntax is a measure of grammatical complexity that reflects the occurrence of unique tokens of different grammatical constructions including noun and verb phrase constructions, inflectional morphemes, interrogative and negative forms, and simple and complex sentence structures. Dale (1991) reported that the MB-CDI–toddler measures of total productive vocabulary, three longest utterances, and sentence complexity were significantly correlated (ranging from .47 to .79) with direct measures of vocabulary and syntax obtained from language sample analyses and standardized tests. He pointed out that reported vocabulary was significantly correlated (r = .74) with number of different words produced in a language sample.

Corkum and Dunham (1996) examined the concurrent associations longitudinally between the MB-CDI Toddler Short Form and directly observed measures of lexical production with a sample of 32 children evaluated at ages 1;6, 2;0 and 4;0. They found significant correlations between MB-CDI Short Form scores and measures of lexical production at both 18 months and 24 months (r = 0.51 and 0.73, respectively).

Thal, Jackson-Maldonado and Acosta (2000) examined the validity of the IDHC:PE (adaptation of the MB-CDI in Spanish) with monolingual Spanish speaking 20 and 28 month-olds from middle and upper-middle-class families. They compared the number of words and two measures of grammar (mean of the three longest utterances and grammatical complexity score)

from the IDCH:PE to behavioral measures of vocabulary and grammar (number of different words, scores in a naming task and MLU) assessed by spontaneous speech. Behavioral measures included an object naming task in which the child was shown 10 common objects one at a time, and then asked for spontaneous naming of the objects. The second measure of spontaneous language was assessed in mother-child and experimenter-child play sessions with age-appropriate materials including toys and books supplied by examiners. Thal et al.' s study (2000) revealed significant correlations between reported vocabulary scores on the IDHC:PE and the behavioral measures of number of objects labeled in the confrontation naming task and number of different words produced in the language sample (*r*s = .56 to .69) for both 20 and 28 month olds. Similar significant correlations were observed between MLU and reported IDHC:PE M3LU and IDHC:PE grammatical complexity (*r*s = .68 to .88 respectively). The results demonstrated that the validity of the parent reports for assessing expressive vocabulary in 20-month-olds and expressive vocabulary and grammar in 28-month-olds were high. These results were also comparable to those reported for English-speaking children with typical language development (Dale, 1991) and older language-delayed preschoolers (Thal, O'Hanlon, Clemmons, & Frailin, 1999).

Marchman and Martinez Sussmann (2002) examined typically developing bilingual 27 month old toddlers (learning both Spanish and English). They compared reported measures of word production to word use during both free speech and structured contexts. They evaluated lexical measures with respect to each language individually assessed with both MB-CDI and IDHC:PE, and with a composite general lexical measure. Behavioral measures included an object naming task, and 30 minutes of free-play that was conducted with the caregiver (15 minutes) and

a Research Assistant (15 minutes). In the object naming task, the child was shown and handed an object and then encouraged for a spontaneous naming or asked to name it. This was repeated for 15 common objects. Free-play sessions with the caregiver and the research assistant involved different sets of toys and provided a range of symbolic and social-interactive activities. Reported grammar measures that were derived from the reporters' indications of their children's three longest utterances (M3L) and the syntactically complex phrases for both languages were compared to the observations of the child's use of word combinations, as well as a measure of their grammatical complexity, and MLU-words that were derived using the Child Language Analysis System (MacWhinney & Snow, 1990), including number of different words, total number of words, and the mean length of utterances. The relationships between the reported and behavioral measures in both English and Spanish were consistently strong for both measures of word production. Indeed, the results demonstrated strong concurrent validity of the CDI and IDHC across a range of contexts after several demographic factors were taken into account including home language, proportion of English to Spanish input, and mothers' acculturation level. They also concluded that parents are "able to accurately discriminate children's English and Spanish word use when completing the CDI's, even if they were speakers of both English and Spanish themselves" (Marchman & Martínez-Sussmann, 2002, p. 994).

Eriksson (2001) studied the concurrent validity of the Swedish adaptation of the MB-CDI-Toddler version (SECDI-W&S) through the use of narratives. Eriksson (2001) assessed vocabulary and grammar skills in thirty-two children from two cohorts when they were 22 and 26 month-olds. The children were assessed again 14 months later (T2) with different measures: grammar score and MaxLU (mean utterance length in morphemes of the child's three longest

utterances) score derived from the SECDI-W&S, and a series of measures derived from narratives produced by the children using the frog story. At T2, concurrent validity of the SECDI using narrative measures was relatively strong, ranged between 0.48 and 0.70.

Pan, Rowe, Spier and Tamis-Lemonda (2004) examined the concurrent validity of the CDI-Short Form. They assessed 24 month-old toddlers' productive vocabulary in 105 low-income families living in either urban or rural communities, and compared the CDI-Short Form to concurrent word types observed in the spontaneous speech measures and standardized language assessments (a factor analysis score of 42 Bayley Scales of Infant Development items), and the utility of each. Results suggest that the CDI-Short Form was moderately associated with other language measures, with different word types obtained from the spontaneous speech measures (r = 0.49), and with the factor score of Bayley (r = 0.66).

Feldman and her colleagues (2005) assessed the concurrent validity of the MB-CDI–II at age 2, and MB-CDI–III at age 3. The results of Feldman and her colleagues' study (2005) revealed that the correlations between scores on all three scales of the CDI-III and scores on the standardized tests and conversational language measures obtained at the age 3 year were positive and statistically significant. Thus, these results suggest that the CDI-III has reasonable concurrent validity. Correlations between scores on the CDI –WS Vocabulary Production and Three Longest Sentences scales and scores on all standardized tests and conversational language measures were also statistically significant, except the CDI–WS Sentence Complexity scale.

The results of Feldman et al. study (2005) for concurrent validity were very similar to results reported by Oliver et al. (Oliver, Dale, Saudino, Petrill, Pike, & Plomin, 2002). Oliver et

al. (2002) also observed significant correlations between the 3-year vocabulary measure, the MB-CDI-III, and the McCarthy Scales of Children's Abilities in a validity study of 85 British children aged 32 to 40 months.

Bleses, Vach, Slott, Wehberg, Thomsen, Madsen, & Basboll (2008) studied the concurrent validity of the Danish adaptation of the MB-CDI. They compared vocabulary size as measured by MB-CDI with the cumulative number of word types observed in the spontaneous speech sample of Danish twins (12 children) from 13 months of age to 30 months of age. The results indicated high correlation between the developmental pattern, as indexed by the MB-CDI, and vocabulary development, as indexed by spontaneous speech data, although the number of children studied was low.

Toole and Fletcher (2010) also demonstrated the validity of MB-CDI for Irish-speaking children from 16 months of age to 40 months of age. Their results revealed that all spontaneous language scores including measures of lexical diversity and indices of grammar were strongly and significantly correlated with the vocabulary and grammar scores on the Irish CDI (ICDI). They also added that the ICDI checklist includes a broader range of language skills and so would seem to capture the range of language ability more comprehensively than direct observation.

Recently, Perez-Pereira and Resches (2011) investigated the concurrent validity of the Galician adaptation of the short and long forms of the MB-CDI Toddler version (IDHC: Palabras e Oracions). They examined 42 children longitudinally at 18 months and 24 months of ages. They compared the lexical and grammatical scores of children obtained from the Galician IDHC with lexical and grammatical measures obtained from the children's spontaneous speech samples.

The correlations found between IDHC vocabulary and lexical diversity in spontaneous measure at age 18 months (0.86 and 0.89 for the long and short forms, respectively); and at 24 months of age (0.80 and 0.74 for the long and short forms, respectively). Correlations between IDHC grammar scores and spontaneous MLU were lower at age 18 months of age than at 24 months of age (0.53 to 0.73, respectively).

In comparison to the validity studies of the expressive vocabulary and grammatical scores of MB-CDI with typically developing infants and toddlers, validity studies of the receptive vocabulary or actions and gestures scores are scarce. A previous study of Thal and Dughi (cited in Fenson et al. 1994) examined the validity of the MB-CDI infant gestures scale. They examined 12 infants between the ages of 8 and 12 months. They compared the gesture scores of the infants obtained from the MB-CDI monthly with the laboratory assessments of communicative, recognitory, and symbolic gestures and vocabulary comprehension scores of children at ages 10 and 12 months. They found substantial and significant concurrent correlations between MB-CDI infant gesture scores and laboratory measures of spontaneous and elicited play at 12 months. However, parent report of gestures had less concurrent validity at 10 months than at 12 months.

Ring and Fenson (2000) explored parents' ability to report reliably on their children's receptive and expressive vocabularies at a mean age of 25 months, once production begins to grow. They compared the effectiveness of MB-CDI toddler form on expressive language with a parental picture-based report that was completed at the laboratory in which they asked parents to make 'yes/no' judgments about their children's ability to understand and say words that are composed of 42 pairs of pictured objects and actions. They also examined the relation between parent report and child performance for receptive and expressive vocabulary by testing children

with the same set of pictures (for the comprehension task they asked them to point to the target word named by the experimenter such as 'Where is the bird?', 'Who is sleeping?', 'Which one is open?' and for the production task asking them questions such as 'What is it?', 'What is she doing?'). Their findings demonstrated that overall, there was a significant correlation between parent report and child performance at the picture-naming task in both the comprehension task (r = 0.55), and for the production task (r = 0.67). Furthermore, multiple regression analyses showed that MB-CDI is a better predictor of child performance scores than the picture-based parental report alone.

The above-mentioned patterns of concurrent validity of the MB-CDIs have been replicated in atypical populations (e.g. Miller, Sedey & Miolo, 1995; Thal, O'Hanlon, Clemmons & Fralin, 1999; Dale, Price, Bishop & Plomin, 2003). Miller et al. (1995), for instance, examined the validity of the MB-CDI for children with developmental disabilities. Miller assessed 44 children with Down syndrome and 46 typically developing children by matching them for mental age. Results from the total expressive vocabulary on the MB-CDI toddler were compared to a spontaneous language sample and to language items in the Bayley Scales of Infant Development, for older children with Down syndrome. Significant correlations were found across all measures, and no significant differences were found in the strength of correlations between the two groups of children.

Mayne (1998) also showed the validity of the MB-CDI for 8- to 37-month-old children who were deaf or had hearing loss. Mayne demonstrated the validity of both infant and toddler forms of the MB-CDI. Significant correlations that ranged from .42 to .77 were reported for both

receptive and expressive vocabulary and measures of language on a different parent report instrument (the Minnesota Child Development Inventory).

In addition, Thal et al. (1999) reported moderate to high correlations between MB-CDI Toddler scores and the language measures in samples of children with language delay who were between the ages of 39 and 49 months. They assessed the total number of different words and Mean Length of Utterance in a spontaneous language sample. Spontaneous language was obtained from each child during 15 minutes of free play with five sets of toys. They also used the Expressive One Word Picture Vocabulary Test, and the Index of Productive Syntax scores, Memory for Sentences subtest of the Standford Binet Intelligence Scale as additional measures of grammatical development. The correlations ranged from .78 to .86 for vocabulary and .58 to .69 for grammar. They concluded that the MB-CDI is effective in assessing the language skills of children with language delay.

Rescorla, Bernstein, Jusczyk, and Jusczyk (2005) examined the concurrent validity of the Language Development Survey (LDS) which is a parent report screening tool for the identification of language delay in toddlers by testing its associations with the MB-CDI Toddler in a sample of 239 23 to 25 month-olds. The correlation between total vocabulary score on the two instruments was .95 and correlations across semantic categories ranged from .84 to .94. The correlation between the LDS and the CDI for mean length of phrases calculated on 3 examples of the child's longest and best phrases was .90.

Moreover, Thal et al. (2007) also demonstrated the validity of the CDI for measuring language abilities in children with profound hearing loss and who are using cochlear implants.

They used behavioral measures including the Reynell Developmental Language Scales and measures of vocabulary and grammar from a spontaneous language sample. Both the Words and Gestures and the Words and Sentences forms of the MB-CDI were shown to have significant correlations with behavioral measures which ranged from .41 to .93. These results were comparable to those reported for children with typical development.

In brief, previous studies on the concurrent validity of the MB-CDI have reported positive correlations that range from moderate to high based on a range of behavioural language measures, including standardised tests, language samples, and parental judgement of vocabulary comprehension and expression. In general, the accuracy of parent reports about their children's language comprehension skills at different ages is poorer than that about the children's language production skills (Erikkson, Westerlund, & Berglund, 2002; Feldman et al., 2000; 2005). Parents are reasonably good informants about their child's expressive language development than receptive language (Thal et al., 1999). Research on the validity of the MB-CDI particularly in the toddler age group (18 to 36 months) reveals that there are substantial correlations between scores on parent report measures and scores on other standardized language measures, or on free-speech measures (Dale, 1991; Fenson et al., 1994; Tardiff et al., 1999; Rescorla & Alley, 2001). This finding has been replicated in children speaking different languages (e.g. Thal, Jackson-Maldonado, & Acosta, 2000), in bilingual children (e.g. Marchman & Martinez-Sussmann, 2002), and children with developmental disabilities, such as children with significant cognitive impairment (e.g., Miller, et al., 1995) and for children with prenatal focal brain injury (Bates et al., 1997). Hence, previous findings provide evidence of the validity of parent report vocabulary cheklists as effective sources of information about children's language development.

2.1.2.3. Predictive validity of the MB-CDI

The predictive validity of the MB-CDI measures has been assessed in a number of studies comparing the MB-CDI parent report with child performance at later ages on the same report, or on other standardized tests of language or other relevant language measures by evaluating the degree of association between infant or toddler version scores. If scores on the MB-CDI have strong and statistically significant positive associations with scores on validated measures at a later age, the findings would constitute strong evidence for predictive validity.

Studies have used the MB-CDI, particularly the toddler version (18 to 30 months), to identify and study toddlers who are significantly behind their peers in language development. Some of these studies have investigated specific theoretical claims about normal language development (e.g. Thal, Bates, Goodman, & Jahn-Samilo, 1997); some have examined toddlers at risk for later specific language impairments (e.g. Ellis Weismer & Evans, 2002) or focus on predictive validity for children who have cognitive and/or developmental disorders (Miller et al., 1995). In general, moderate to strong correlations have been found for the MB-CDI–Words and Sentences version for typical populations, for children with developmental disabilities, and children with specific language delay. Indeed, children who score very low on parent report measures are found to be at higher risk for continuing language impairments although many of them catch up with their age cohorts' level in the later preschool years (Dale, Price, Bishop, & Plomin, 2003; Rescorla & Alley, 2001; Thal, O'Hanlon, Clemmons, & Fralin, 1999). These studies will be presented below.

Fenson et al. (1994) yielded evidence of the CDI's predictive validity. They obtained 6 month follow-up data from approximately 600 children as part of their norming study. One group of parents in their sample filled out the MB-CDI infant version at two time points (infant-infant sample), the other group filled out the toddler version at two time points (toddler-toddler sample), and the other group filled out the MB-CDI-infant at one time point and the MB-CDI-toddler at the second time point (infant-toddler sample). The results demonstrated continuity of vocabulary comprehension, production, and gesture production. Besides, the data provided evidence for short-term stability of vocabulary and grammatical complexity. The Fenson et al. (1994) longitudinal data indicated that there are large individual differences in the timing of early language acquisition, and the individual differences in language comprehension and production scores were relatively stable across a 6-month period.

Thal, Bates, Goodman, and Jahn-Samilo (1997) used the MB-CDI to examine the value of MB-CDI reports of vocabulary and gesture production for predicting language delays. They examined whether late and early language status is equally stable across ages from 8 to 30 months. They analyzed children in the upper and lower 10% of the normal distribution of the same data used by Fenson et al. (1994). They also obtained data by following 34 children monthly from 8 to 30 months of age. Although their study provides evidence for continuity at the group level for late- and early-talker status across the period from 10 to 30 months of age, they concluded that the results did not have adequate sensitivity and specificity to predict the outcome for individual children. Particularly, Thal et al. pointed out that their longitudinal study with 34 children showed equally poor predictability for all late talkers and for early talkers below 18 to 24 months of age.

Robinson and Mervis (1999) also had a criticism that MB-CDI growth curves that plot vocabulary size against age are not representing individual differences, since they are commonly based on cross-sectional data and represent group average. They pointed out that although MB-CDI growth curves was validated in a single case study in which they assessed the longitudinal validity of MB-CDI by comparing MB-CDI growth trajectory with the growth trajectory based on daily diaries, the MB-CDI underestimated the words in the diary study, besides the discrepancy between the measures increased with age.

On the other hand, Jahn-Samilo, Goodman, Bates, and Sweet, (2000) also argued that when compared to direct assessment, parental report can provide earlier and more representative indicators of vocabulary development. Jahn-Samilo, Goodman, Bates and Appelbaum (1999) compared toddlers' vocabulary in another longitudinal study in which 36 object names that were taken from the MB-CDI word production checklist (administered monthly from 8 to 30 months) with the same 36 words that were elicited by a word production task (administered monthly in the laboratory from 12 to 30 months). They found that both measures revealed high variability in children from 16 to 30 months of age. They suggested that the great variability in the MB-CDI reflects the variability in the early language growth. In addition, Dale et al. (2003) measured the vocabulary production scores of 8386 British twin children at the age of 2 years, using the 100-item short form of the MB-CDI (Fenson et al., 2000). They found statistically significant relations between this early vocabulary measure and later proficiency in vocabulary, grammar and abstract language at the ages of 3 and 4 years.

Corkum and Dunham (1996) examined the predictive associations between the Short Form scores and measures of more general intellectual abilities in a sample of 32 children (aged 1

yr 6 month olds, 2 years, and 4 year olds). They found that the MB-CDI Short Form predicted Verbal IQ scores of the Wechsler Preschool and Primary Scale of Intelligence Revised at 4 years of age. However, the CDI scores did not predict the Performance IQ scores at 4 years. The short form of the MB-CDI has also been used in the Twins Early Development Study (Bishop, Price, Dale, & Plomin, 2003; Oliver, Dale, & Plomin, 2004). They reported that scores at age 2 were highly predictive of language delay at ages 3 and 4. Later on, Bornstein and Haynes (1998), Reese and Read (2000), and (Pan et al., 2004), provided further support for these results. Reese and Read (2000) examined the predictive validity of a New Zealand version of the CDI-Toddler version (NZ CDI:WS) with 61 New Zealand children at 1;7 and 2;1 and with the Expressive Vocabulary Test and the Peabody Picture Vocabulary Test-III at 2;8 and 3;4. They found good predictive validity for the NZ CDI:WS even over a 21-month delay. However, their results indicated mothers with less education overestimated their children's vocabulary levels compared with their performance on standardised measures.

In brief, in studies that have used the MB-CDI, individual differences in the language comprehension and production skills of toddlers remained relatively stable. Moreover, some children with more advanced early development show delays at later ages, whereas many children whose initial developmental progress is slow increase their rate of development to catch up with previously typically developing peers (Dale et al., 2003). Both the MB-CDI vocabulary and syntax measures (sentence complexity and the length of the three longest sentences) were also found to be good predictors of MLU in samples of language-impaired children (O'Hanlon & Thal, 1991). Nevertheless, associations have been found to be higher for CDI vocabulary scores than grammar scores (Miller, Sedey, & Miolo, 1995; Pan et al., 2004; Reese & Read, 2000).

2.1.2.4. Validity of the MB-CDI reports in relation to SES or Mother Education

With a few exceptions (e.g. Aksu-Koç et al., 2011; Arriaga, Fenson, Cronan & Pethick, 1998; Furey, 2011; Roberts, Burchinal & Durham, 1999; Feldman et al., 2005; Mancilla-Martinez, Pan, Vagh, 2011; Pan, Rowe, Spier & Tamis-Lemonda, 2004; Reese & Read, 2000), most research to date with parental report on children's language development has focused on children from middle- or upper-middle-class families. Several studies have shown a positive association between the SES of the parent and the verbal abilities of the child, especially regarding lexical development; children of upper SES performed better than children of lower SES (e.g., Arriaga, Fenson, Cronan & Pethick, 1998; Bornstein, Haynes & Painter, 1998; Feldman et al., 2005). However, some of the studies report an insubstantial or non-existent effect of SES (e.g. Fenson et al., 1994; Hamilton et al., 2000; Maital et al., 2000). This may be due, in part, to the predominance of high SES parents in these samples. Linguistic input the child receives is usually hypothesized to mediate the association between SES of the parent and the verbal abilities of the child (Hart & Risley, 1995; Hoff-Ginsberg, 1991, 1998; Hoff & Naigles, 2002; Huttenlocher, Haight, Bryk, Seltzer & Lyons, 1991; Weizman & Snow, 2001). Mothers with high SES have been found to talk more, produce longer sentences, use a richer vocabulary and pose a larger number of questions to their children as compared with mothers of lower SES. Parents from higher social class backgrounds are also suggested to give more accurate reports of their children's communicative skills. For instance; Saudino et al. (1998) found that relatively high-SES mothers discriminated between their children's verbal and nonverbal cognitive abilities quite well. They examined the pattern of correlations of the parent-based measures with Bayley language and nonlanguage scores and MB-CD1: UK Short-form Version (MCDI:UKSF). The

vocabulary scale of the MCD1:UKSF was found to be more highly correlated with Bayley language than with Bayley non-language measures.

Although studies with the MB-CDI have concluded that parents of middle- to upper-middle-class generally are reported to be valid observers of their children (as indicated by strong concurrent correlations of parent reports with direct assessments and also by good prediction of later developmental status) (Camaioni, Castelli, Longobardi & Volterra, 1991; Corkum & Dunham, 1996, Dale, 1991; Dunham & Dunham, 1992; Fenson et al., 1994; Miller, Sedey, & Miolo, 1995; O'Hanlon & Thal, 1991; Reese & Read, 2000; Rescorla & Alley, 2001; Ring & Fenson, 2000; Tardiff et al. 1999), some researchers have questioned the accuracy of reports by parents from low socio-economic backgrounds and for racial minority in particular. For instance; Roberts, Burchinal, and Durham, (1999) using a 50-word version of the MB-CDI, found that African American parents of low SES appeared to underestimate their children's vocabulary sizes at 30 months, but not at 18 or 24 months, relative to other standardized language measures administered concurrently and compared with the MB-CDI norming population. However, when the scores that were considered questionable for the researchers were omitted, a significant gender effect was found, favouring girls. Thus, the researchers cautioned about systematic bias in reporting and that the MB-CDI and its norms may be inappropriate for low-income African-American mothers since they may overestimate boys' vocabulary.

Reese and Read (2000) also found negative relations between children's MB-CDI scores and maternal education;children of mothers with less education gave higher estimates of their children's receptive vocabulary levels on the MB-CDI compared to their performance on other standardized measures. They pointed out that mothers with less education might conflate

expressive and receptive vocabulary when filling out the MB-CDI Infant form, and added that mothers with less education may be less likely to follow instructions as carefully so that they may additionally tick words that the child "knows" but does not necessarily "produce".

Feldman and colleagues (2000) have questioned the validity of the CDI for certain sociodemographic groups too. As part of a prospective study of language, cognitive, and psychosocial development in relation to otitis media, Feldman et al. obtained CDI data from children at ages 1, 2, and 3 years, using a large and sociodemographically diverse sample. In a study based on data of 2,156 children with no recognized major biological or social risk factors for developmental delay other than low socioeconomic status, Feldman et al. (2000) found that the majority of the scales on the MB-CDI that were obtained at both 1 and 2 years of age of children were developmentally sensitive, with scores increasing across age ranges. However, there was considerable variability in performance on both vocabulary scales of the MB-CDI Infant version and three grammatical scales of the MB-CDI Toddler version (word forms-irregulars, word forms-over-regularized, and sentence complexity). Correlations between performance on the Infant and on the Toddler version, one year later, ranged from 0.18 (mostly on comprehension sections) to 0.39 (on vocabulary production sections). Therefore, Feldman et al. (2000) criticized the MB-CDI as having little stability in measuring children's respective levels of language development across years.

Feldman's study sample included a substantial number of parents who used Medicaid for health insurance based on their low economic status (42% of the participants), and who were African American (20% of the participants). In the sample of Feldman's study, 8% of the children had mothers who had not graduated from high school, and only 18% had mothers who

had completed college. These percentages contrast with those of the MB-CDI norming samples (Fenson et al., 1993), in which only 4% were African American and only 3% were from low-income families, 4% who had not graduated from high school, and 53% had mothers who had completed college. Thus, at least within the American context, there is some concern in the usability of the MB-CDI with low SES families.

Feldman et al. (2000) also found that maternal education was negatively associated with children's receptive and productive scores. Children's language scores on three of the four continuous scales in MB-CDI Infant version (Phrases Understood, Vocabulary Comprehension, and Vocabulary Production), and two of the five continuous scales of the MB-CDI Toddler version (Word Forms-Irregular, Word Forms -Over-generalized) were higher for children whose mothers had the lowest level of education than for children whose mothers were college educated and had private health insurance. These findings contradicted the observation that children of low SES typically develop language more slowly than do children of middle or high SES. Therefore, they concluded that the MB-CDI has limited utility as a tool to compare groups of children of 24 months of age and younger and with different socio-economic backgrounds.

Fenson et al. (2000) responded to Feldman et al.'s (2000) cautions regarding the use of the MB-CDI, by claiming that the characteristics of the MB-CDI are reflections of individual differences in early language development rather than measurement problems. They acknowledged that 1 year of age is too young to identify individual children at risk for language delay, but they asserted that stability of language abilities increases in children 12–24 months old, and then the predictive power of the MB-CDI to identify children at risk for language delay should increase with age. Hence, they suggested that the MB-CDI is a reliable screening device

with increasing stability particularly between 16 and 24 months. In addition, neither the study by Roberts and colleagues nor that by Feldman and colleagues included data on children's spontaneous speech, and neither provided longitudinal data beyond toddlerhood to allow examination of concurrent or predictive validity of MB-CDI vocabulary measures of children in low-income families.

Despite the concerns raised by Feldman et al. (2000), research shows that parent reports appear to be congruent with other sources of information. Heilmann, Ellis Weismer, Evans and Hollar (2005) have documented that the measure is significantly correlated with direct assessment measures and can accurately identify children's language level at 30 months of age. Heilmann et al.'s analyses showed that the MB-CDI was effective in identifying children with low language (below the 11th percentile) skills and in identifying children with normal language skills (above the 49th percentile). Thus, they also suggested the MB-CDI as a valid measure to use.

In addition, Arriaga et al. (Arriaga, Fenson, Cronan & Pethich, 1998) found that when used with diverse samples, children from families with very low SES obtained lower scores on three measures of the toddler version of the MB-CDI: size of vocabulary, word combination, and grammatical complexity than middle-class children. They found a 30% downward shift in all scores, a substantially larger shift than previously reported for low SES samples. These low scores reflect children's lower levels of language rather than the parents' inability to report accurately.

In brief, the concurrent and the predictive validity studies of the MB-CDI comparing the MB-CDI parent report with child performance on relevant language measures have revealed moderate to strong correlations between the MB-CDI, particularly Words and Sentences form, and other language measures both for typical populations, for children with developmental disabilities, and for children with specific language delay. Studies generally revealed that differences in maternal education, income and race did not affect parents' evaluation, and differences between children in the first years in verbal ability might vary as a function of age, gender and SES differences. In general, there is a positive association between the SES of the parent and the verbal abilities of the child, especially regarding lexical development, and when gender differences are found, it is commonly favoring girls. There is also some evidence that completion of the MB-CDI by multiple reporters may be more valid than single reporters (DeHouwer, Bornstein, & Leach, 2005; Marchman & Martinez-Sussman, 2002). For instance, DeHouwer et al. (2005) found that the middle to upper-class parents of monolingual Dutch-speaking children tended to underestimate their children's vocabulary. They found that the greater the child's communicative ability and linguistic knowledge, as rated by any one reporter, the more differences tend to emerge between reporters. Different reporters evaluating the same child give different, and sometimes widely divergent, reports on the same child. However, this may have been a function of their familiarity with the children. As a result, DeHouwer et al. (2005) propose the use of a Cumulative CDI Score in order to take into account the reliability in inter-individual comparisons across multiple reporters' assessments of the same child.

2.2. Present study

The current study is undertaken to examine the concurrent validity of parental report in Turkish-speaking children from families of diverse SES backgrounds. This study is part of a larger project designed to adapt MB-CDI to Turkish language and culture. Turkish Communicative Development Inventory (TIGE) (Aksu-Koç, Küntay, Acarlar, Maviş, Sofu, Topbaş & Turan, 2011) is a project aiming to develop a standardized assessment tool that measures age- and gender-based trends in the growth of language competence, using a sample of 3,529 Turkish-speaking children by using the information given by their parents. With the goal of using evidence from observed vocabulary and gesture use by children in spontaneous speech, we examined the validity of TIGE and investigated the relationship of parental report to background factors, in particular maternal education, given the somewhat mixed results regarding SES effects reported in the literature, and with respect to comparison to the normative data on the gestural, lexical, and grammatical development of 3,529 Turkish-speaking children aged 0.8-3.0 in Turkey. In the following section, the specific aims and procedure of the study are presented.

2.2.1. Aims

The objective is to compare the language and also actions and gestures production scores of 8-36 month-old native Turkish learners obtained from TIGE to their scores on the measures of the same behaviors drawn from these children's spontaneous speech samples collected in three child-mother interaction contexts: an unstructured free activity setting, a joint picture-book reading context, and a toy play setting. The primary purpose of this validity investigation is to demonstrate that the Turkish adaptation of the MacArthur-Bates CDI can provide similar levels

of early communicative and linguistic competence of monolingual Turkish speaking infants and toddlers to such competence displayed spontaneously in interactions with caregivers, even after controlling for the ages and gender of the children and the education levels of the mothers.

The comparisons between TIGE reports and actual behavior were done for three phenomena: First, types of actions and gestures reported by the mother to be produced by their children were compared with the observations of actions and gestures use during spontaneous speech contexts. Secondly, the correspondence between TIGE as the checklist measure of vocabulary composition and the produced vocabulary in the spontaneous speech samples were investigated by examining the extent to which relevant measures correlate with each other. Finally, the association between the grammar measures obtained from TIGE as the checklist measure of grammatical complexity and the spontaneous speech samples were investigated by examining the extent to which they result in similar scores.

Three specific research questions were investigated:

1. How well do the measures of receptive and expressive vocabulary scores, and the actions and gestures obtained from TIGE-I correlate with the number of different word types, word tokens, and actions and gestures obtained from the spontaneous language measures?

2. How well do the expressive vocabulary scores, the grammatical complexity, and the mean of the three longest utterances (M3L) from TIGE-II and the number of different word types, word tokens, and the mean length of utterances (MLU) produced in spontaneous speech tasks correlate?

3. How closely associated are measures of the communicative and language scores based on TIGE forms and on the spontaneous speech samples after controlling for the demographic variables of maternal years of education, gender, and age?

CHAPTER 3: METHOD

3.1. Participants

107 Turkish speaking mother-child dyads including 31 infants and 76 toddlers were included in this study. All the children were monolingually raised Turkish-learning children having no reported speech, hearing, other serious neurological disorder, or other chronic health problems. The children are approximately equally distributed across the monthly age brackets covered by TIGE forms and across the family socio-economic status. Some of the demographic characteristics (target child age, gender, and parent education) of the sample are shown in Table 1. Mothers of children were contacted by means of snowball sampling to participate in the study, or through personal relationships or through pediatricians, professionals in day-care centers. All mothers were current residents of İstanbul, Ankara, or Eskişehir. Mothers' levels of education vary, with no education to highest diplomas ranging from elementary school to high school to four-year or above college (e.g., graduation from high school means 11 years of attained education). Among 107 children, 47% of them had mothers who had graduated from elementary school, and %35 had mothers who had completed high school and, 19% mothers who had completed college. On average, mothers reported at least 9 years of school attendance (M = 8.8, SD=4.37 range = 0 to 21).

Table 1.
Demographic characteristics of the sample in the TIGE-I & TIGE-II

		Level of Education			
Gender		Basic (5 years or <)	Secondary (6-11 years)	College (12 years or >)	Total n (%)
TIGE-I (8-16 months)	Male	5 (%16)	5 (%16)	0	10 (%32)
	Female	8 (%26)	7 (%23)	6 (%19)	21 (%68)
Total n (%)		13 (%42)	12 (%39)	6 (%19)	31 (%100)
TIGE-II (16-36 months)	Male	18 (%24)	12 (%16)	5 (%7)	35 (%46)
	Female	19 (%25)	13 (%17)	9 (%12)	41 (%54)
Total n (%)		37 (%49)	25 (%35)	14 (%18)	76 (%100)

3.2. Measures

3.2.1. 'Turkish Communicative Development Inventory' (TIGE: Türkçe İletişim Gelişimi Envanteri

TIGE parental report forms address the early communicative and especially lexical development of children aged 8 to 16 months ("Words and Gestures") and the early lexical and grammatical development of 16 to 36 months ("Words and Sentences"). Data on receptive and expressive lexicon are gathered from the ages 0;8 to1;4, using TIGE-I: Infant form: including Words and Gestures (see Appendix A). Data of the expressive lexicon and grammar is collected at ages from1;4 to 3;0 using TIGE-II: Toddler Form: Words and Sentences (see Appendix B).

The infant part of the Turkish Communicative Development Inventory (TIGE-I) designed for 8 to 16 months assesses receptive vocabulary, expressive vocabulary, and nonverbal

communicative and symbolic actions (see Appendix A). The language measures examined on TIGE-I included the number of phrases understood (maximum number of relevant items possible = 28), words understood (maximum number of relevant items possible = 418), words produced (maximum number of relevant items possible = 418), and first signs of understanding (maximum number of relevant items possible = 3). Regarding the vocabulary section, mothers are asked to report whether their child understands an item, or understands and says it. If an item is left unchecked by the interviewer, it means that the child does not yet know that item. In order to obtain valid information from TIGE forms, situations where words are accepted as "understood" and "produced" are clearly explained to the mother. A word is accepted as "understood" if a child shows a clear, immediate and correct response to it, and a word is accepted as "produced" if the child repeatedly uses that word connected repeatedly to the same referent (not only imitated after the mother's speech). Regarding the actions-gestures sections, mothers are asked to report whether their child does the action described in an item. The actions and gestures checklist in TIGE-I consisted of 68 communicative and/or symbolic actions and gestures, organized into five sections:

1) ''First Communicative Gestures'' include 16 items that signal the onset of intentional communication and include four deictic gestures such as requesting, giving, pointing, showing and twelve conventional-cultural representational communicative gestures such as shaking the head to indicate 'no' and raising the arms to ask to be picked up,
2) ''Games and Routines'' include 8 games and routines such as playing peek-a-boo or chasing. These do not include any object manipulation, and are an important part of early social interactions,

3) ‘‘Actions With Objects’’includes 17 actions and gestures performed on and with objects and entails recognition of the appropriate use of a particular object such as trying to eat with a spoon or fork, placing a comb on own hair or brushing own teeth,
4) ‘‘Pretending to Be a Parent’’ includes 13 items that entail true symbolic gestures such as kissing a baby doll, putting dolls to bed, feeding the toy with a feeding bottle or a spoon or talking to dolls or stuffed animals,
5) ‘‘Imitating Other Adult Actions’’ contains 14 items that entail the ability to imitate more complex actions, usually part of adult’s repertoire, and performed by adults, such as reading, writing with a pen, locking the door with a key. These actions express a growing understanding of the world of objects and the uses of things.

In the toddler form (TIGE-II), information on word production of toddlers aged 16 to 36 months are obtained by asking the mothers whether their children say the words; there are no questions about vocabulary comprehension in this form (see Appendix B). The language measures examined in TIGE-II included words produced (maximum number of relevant items possible = 718), grammatical complexity (maximum number of relevant items = 18), and M3L (no upper limit). Regarding the vocabulary section of TIGE-II, mothers are asked to report whether their child says the item. A word is accepted as “produced” if the child repeatedly uses that word which is connected repeatedly to the same referent (not only imitated after the mother’s speech). If an item is left unchecked by the interviewer, it means that the child does not yet know that item.

TIGE-II also contains a grammar part that includes a section on inflectional morphology and a section on sentence complexity (see Appendix B). Because the structure of Turkish

grammar differs from that of English, these parts show many differences from the English version (Fenson et al., 1994). For comparison, the categories and number of items in the vocabulary and grammar lists of TIGEs and CDIs are given in Table 2 and 3 (see Appendix C for examples from the sections).

The section on grammar starts by asking mothers if their children produce words to refer to: 1) past events and non-present people, 2) future events, 3) non-present objects, 4) possessors of objects, and understands reference to 5) location of absent objects. The section on inflectional morphology starts by asking mothers if their children produce nominal and verbal inflections of 1) present progressive *–Iyor*, 2) past tense aspect *–DI*, 3) evidential *–mIş*, 4) aorist *–Ar*, 5) future *–-AcAk*, 6) yes/no question marker *–mI*, 7) verbal negation *–mA*, 8) first person possessive *–Im*, 9) dative *–E*, 10) locative *–DE*, and 11) accusative *–I*[1].

The section on sentence complexity starts by asking mothers if their children already produce word and morpheme combinations. Parents are then asked to list their child's longest three sentences which are typical of their child's way of talking. Then grammatical markings are presented, asking the mothers to indicate if their child produces such forms. The forms listed include nominal markings (plural marking *-lAr*, ablative case marking *–DAn*, instrumental and commitative *–lA*, genitive *–(n)In)*, verbal markings (necesitative *–mAlI*, optative *–E*, polite imperative *–sAnA*, permissive *–AbIl*, causative *–DIr*, conditional *–sA*, negative *–mA)*, and some early verb inflection combinations: *-mIş-DI, Iyor-muş.* Lastly, mothers are asked questions that

[1] Capital letters used in inflections refer to individual morphemes reprsent vowel alternations.

ask them to report on their child's use of complex syntax including the use of infinitives *-mAk*, conjunctions *de, ve, -den sonra, diye*, and converbs *–IncA, -ArAk, -Ip, -Iken*. In sum, this part assesses the Turkish-specific morphological and syntactic properties that increase sentence complexity in early child language.

Table 2.

Categories and numbers of items covered in the sections of TIGE-I compared to CDI-I:Words and Gestures

	Words and Gestures	
	TIGE-I	**CDI**
Part-I: Early Words	451 items	429 items
A.First signs of understanding	3	3
B.Phrases	28	28
C.Starting to talk	2	2
D.Vocabulary	418	396
1.Sound effects and animal sounds	10	12
2.Animals	17	36
3.Vehicles	7	9
4.Toys	8	8
5.Food and drink	43	30
6.Clothing	18	19
7.Body parts	17	20
8.Small household items	27	36
9.Furniture and rooms	22	24
10.Outside things	21	-
11.Places to go	13	27
12.People	21	20
13.Games and routines	31	19
14.Action words	95	55
15.Descriptive words	25	37
15.Words about time	6	8
16.Pronouns	12	11
17.Question words	7	6
18.Prepositions and locations	10	11
19.Quantifiers and articles	8	8
Part-II: Actions and Gestures	69 items	64 items
A.First communicative gestures	16	12
B.Games and routines	8	6
C.Actions with objects	17	17
D.Pretending to be a parent	13	13
E.Imitating other adult actions	14	15
F.Pretend objects	1	1

Table 3.

Categories and numbers of items covered in the sections of TIGE-II compared to CDI-II:Words and Sentences

	Words and Sentences	
	TIGE-II	**CDI**
Part I: Words children use	723 items	685 items
A.Vocabulary	718 items	680 items
1.Sound effects and animal sounds	13	12
2.Animals	41	43
3.Vehicles	14	14
4.Toys	20	18
5.Food and drink	66	68
6.Clothing	32	28
7.Body parts	27	27
8.Small household items	33	50
9.Furniture and rooms	27	33
10.Outside things	37	31
11.Places to go	25	22
12.People	32	29
13.Games and routines	40	25
14.Action words	146	103
15.Descriptive words	61	63
15.Words about time	13	12
16.Pronouns	21	25
17.Question words	12	7
18.Prepositions and locations	21	26
19.Quantifiers and articles	23	17
20. Connecting words	7	-
21.Helping verbs	-	21
22.Connecting verbs	-	6
B.How children use words	5	5
	Words and Sentences	
	TIGE II	**CDI II**
PART II: Sentences and Grammar	84 items	111 items
A.Word inflections / Word endings	11	4
B. Noun inflections / Word forms	16	19
C. Verb inflections / Word endings	39	51
D.Three longest sentences		
E. Complexity	18	37

3.2.2. Socio-demographic Information Form: Home Observation for Measurement of the Environment

In addition to administering TIGE, socio-demographic information is collected from the mothers to measure factors in the home environment that affect child development (Baydar, Küntay, Gökşen, Yağmurlu, & Cemalcılar, 2008). The Turkish version of Home Observation for Measurement of the Environment (HOME; Bradley and Caldwell, 1984) that was adapted by Baydar & Bekar (2007) was used to determine the family living conditions, the child-care practices, and the language spoken at home (see Appendix D). The HOME inventory is a structured and close-ended interview that includes 52 items. The items allow the estimation of 7 subscales: learning materials (α=0.91; e.g., "Child has toys which teach colors, sizes, and shapes"), language stimulation (α=0.84; e.g., "Parent teaches child simple verbal manners: please, thank you, I'm sorry"), physical environment (α=0.72; e.g., "Building appears safe"), responsivity (α=0.82; e.g., "Mother holds child close to herself at least for 5 minutes during the visit."), academic stimulation (α=0.82; e.g., "Do you help your child to learn the name of colors?"), experience variety (α=0.55; e.g., "Did you go to a trip to somewhere else (to village, town, prairie or city) with your child during last year?"), and use of harsh discipline to the child (α=0.61; e.g., "Mother conversed with the child in a harsh manner, scolded at or derogated him more than once during visit") (Baydar et al., 2008). The socio-demographic questionnaire consists of questions about the personal and demographic information such as mother's pregnancy and delivery, child's general health and development, family size and number of caregivers, family socioeconomic status, highest level of education for each adult, current living conditions, and materials in the household. Thus, information about the mother-child interaction,

child care arrangements related to parenting strategies, cognitive-linguistic stimulation including home literacy environment were collected to determine the relevant aspects of the child's language learning environment.

3.2.3. Spontaneous language measurement

The communications and the spontaneous language used by Turkish speaking infants and toddlers in child-mother dyadic interactions were videotaped in three play contexts: an unstructured free activity setting, a joint picture-book reading context, and a toy play setting with two sets of toys provided sequentially by the experimenter. A more detailed information about spontaneous language measures is presented in the following section.

3.3. Procedure

Each child was seen individually at the child's home with the primary caregiver. In some cases, multiple caregivers were present in the households, such as the child's grandmother, or other children such as the target child's siblings. These people were often included in the sessions, but in almost all cases, the primary caregiver was considered to be the mother. The other adults or children were allowed to participate in the sessions nevertheless they were asked to try not to interrupt the mother-child interaction.

The visits to the home were scheduled at the mother's convenience. These visits lasted approximately for 2 or 3 hours. One or two observers (including the author) were present during the entire session, taking turns at filming the interaction and conducting TIGE. The video-recording session lasted for approximately 45 minutes. Each mother were informed that we are

primarily interested in gathering a sample of how her child is currently communicating. If the mother strongly insisted that a home visit was not acceptable to her, the mother-child dyad would be invited to and observed in a laboratory playroom designed for observational research. (The playroom is comfortably furnished similar to a home environment with child size table and chairs; a sofa and pillows and play farm with puzzles, dolls and similar age appropriate toys). Indeed, there is only one case observed in the laboratory.

Because the goal of the study is to observe the dyads' regular activities, how the dyads carried out the activities were not much constrained. Throughout the recording, observers tried not to interact with the mother or the child. They observed and video-recorded the mother and child dyads from a corner of the room.

The video-recording session consisted of three segments. First, the mother and the child were observed in an unstructured free activity setting. The mothers were asked to do "what they usually do with their child" on a normal day at home such as routine care, meal time, dressing, or play (see Appendix E for the Turkish instructions). This interaction was recorded for 10-15 minutes. No tools or toys were provided to the dyad for this segment.

In the second segment, the mother and the child were given 5-10 minutes to look at a 24-page wordless picture book, "Frog, Where are you?" (Mayer, 1969). The Frog Story method has been used in many previous studies with speakers of several languages (Berman & Slobin, 1994). This storybook is about a boy and his dog, and their search for their missing frog. While the boy and his dog are searching for the frog, they encounter different forest animals. After several search encounters and adventures, the boy and dog eventually find the frog with other frog

friends. Mothers were instructed to read the book or look at the book together with their child (see Appendix F for the Turkish instructions).

In the third segment, the mother and child dyads were asked to play with two different sets of toys. This part lasts approximately 20 minutes i.e., 10 minutes for each set. The mothers were asked to participate in play with their children (see Appendix G for the Turkish instructions). The toys were selected to establish a standard situation for all children, with items familiar and attractive for children of these ages, and were chosen to promote play and verbal interaction. The first set of toys includes animal toys (a horse, a cow, a goat, a sheep, a dog, a donkey, fences and straw). The second set of toys includes doctor toys (stethoscope, injection syringe, eye glasses) and kitchen toys (saucepan, glass, plate, dipper, cooker) and construction toys (hammer, two screws, screwdriver, screw key and a wrench).

Once the 45 minutes of video-recording were completed, TIGE was conducted by interviewing the mother. Data on receptive and expressive lexicon were gathered from the ages 0;8 to 1;4, using TIGE-I: Infant form: including Words and Gestures. Data of the expressive lexicon were collected at ages from1;4 to 3;0 using TIGE-II: Toddler Form: Words and Sentences. In addition to administering TIGE, socio-demographic information were collected from the mother.

In general, it takes longer to conduct TIGE interviews with mothers whose children have more words than those with fewer words. Thus, interviews with caregivers who have children at the younger ages were the shortest, whereas interviews with caregivers who have children at the older ages took the longest. Some caregivers might have responded affirmatively that their child

says a certain word, if the child is familiar with or likes an object or action regardless of whether or not the word has ever been spoken by the child. Other caregivers might have asked the child to repeat words listed on the form and if the children are able to do it, regardless of whether they have heard the word before, then they might have responded that their children can say that word. Therefore, the interviewer made every attempt to explain in detail what is required of the mother, for instance, what counts as a genuine comprehension or production of a linguistic item. Thus, it took longer to conduct TIGE interviews with mothers who needed more explanations leading to more accurate responses. For TIGE-I the interviews lasted approximately 30 minutes to one hour. For TIGE-II, the interviews lasted approximately 40 minutes to 90 minutes.

3.4. Transcribing and coding measures

The videos of the mother-child conversations were transcribed by using the "CHAT" (Codes for the Human Analysis of Transcripts) format, which is the standard transcription system for the CHILDES (Child Language Data Exchange System) Project (CHILDES system; MacWhinney, 2000). The CHAT system provides a standardized format for producing computerized transcriptions of face-to-face conversational interactions as well as detailed phonological and morphological coding (see Appendix H for the example of CHAT transcription).

The sessions of each child were transcribed and checked independently by the author who had been present during the videorecording sessions and at least one trained student. Some of the transcriptions and videos were viewed together with the supervisor in order to resolve any disagreements. The transcriptions of the children's speech remained close to the actual

pronunciations of the speaker. Each word produced by children were coded according to its grammatical category. Transcripts also include information about nonverbal activities. In addition, the observations of actions and gestures children produce were coded and calculated based on TIGE-I Action and Gestures sections.

3.5. Data analysis

Transcriptions were analyzed by "CLAN" (Computerized Language Analysis) program that is designed to analyze data transcribed in the format of CHAT (CHILDES system; MacWhinney, 2000). The CLAN system provides a standardized format for detailed phonological and morphological analysis of face-to-face conversational interactions.

For the purposes of this study, five scores were obtained from TIGE-I for each participant: "the number of first signs of understanding", "the number of phrases understood", "words understood", "words produced", and "actions-gestures produced", by counting the number of items each child produced from each list. Two scores were obtained from the spontaneous speech context for each child. The first was "the lexical diversity score: number of different words produced" obtained by counting the number of the different intelligible lexical items produced in the transcription (each form of every root was counted e.g. "çocuk: N|çocuk", "çocuklar: N|çocuk-PL|lar", "çocukları: N|çocuk-PL|lar-ACC|ı"; see APPENDIX I for the coding criteria and examples). For the second, actions and gestures children produce during spontaneous language use in videorecordings of child-mother interactions were ascoded and constructed by counting the number of items each child produced from each list on TIGE-I Checklist Action and Gestures sections.

From TIGE-II, expressive vocabulary scores (number of words produced) were calculated by counting the number of items each child produced. In addition, two other measures of expressive grammar were obtained from TIGE-II: (i) mean length of utterance averaged over three longest utterances reported [M3L] and (ii) a morphosyntactic complexity score based on the number of noun and verb inflections used. Similar measures of vocabulary (number of different words, and total number of words) and grammar (mean length of utterance) were derived from the spontaneous speech samples obtained in the mother-child interaction contexts: "the lexical diversity: number of different words" were obtained by counting the number of the different intelligible lexical items produced in the transcription; "mean length of utterance" based on a count of morphemes averaged over complete and intelligible utterances each child produced (see APPENDIX I for the coding criteria and examples).

CHAPTER 4: RESULTS

4.1. TIGE-I and Spontaneous speech sample measures at ages 8-16 months

4.1.1. Descriptive measures

Table 4 presents the means, standard deviations (SD), minimum and maximum scores for each of the language measures obtained from both TIGE-I and spontaneous speech contexts. None of the children scored at ceiling by showing knowledge of all the items of any of the measures except the "First signs of understanding" section of TIGE-I. 26 children (%84) were at ceiling on the "First signs of understanding" section of TIGE-I, therefore this section was not included in the validation analyses. Only one child scored at floor on the words produced section of TIGE-I. Because that number is small, all of the validation analyses were done with the full sample of children.

Table 4.
Means (M), standard deviations (SD), minimum and maximum values of TIGE-1 and spontaneous language measures

Measures	M	SD	Minimum	Maximum
TIGE-I (8-16 months)				
Phrases understood	17.23	6.34	1	25
Words understood	110.16	66.99	16	218
Words produced	14.77	13.57	0	48
First signs of understanding	2.77	0.62	0	3
Actions and Gestures produced	31.23	11	14	51
Spontaneous Language (8-16 months)				
Phrases understood	2.06	0.85	1	3
Word tokens	26.1	37.49	0	158
Word types	8	9.14	0	34
First signs of understanding	6.68	3.77	0	13
Actions and Gestures produced	12.55	4.86	3	20

The means for vocabulary comprehension (*M*=110.16, *SD*=66.99), production (*M*=14.77, *SD*=13.57), and actions and gestures produced (*M*=31.23, *SD*=11.00) obtained from TIGE-I with this sample were slightly lower than the values described in the normative samples covering the same age range of the validity sample (*M*=121.02, *SD*=95.38; *M*=16.44, *SD*=31.36; *M*=36.34, *SD*=17.99) respectively for the vocabulary comprehension and production scores, and actions and gestures scores) (Aksu-Koç, et al. 2011), although the scores were within the standard deviation range of the normative sample. The mean number of phrases understood (*M*=17.23, *SD*=6.34) obtained from TIGE-I with this sample was the same in their respective normative sample (*M*=17.60, *SD*=7.90). Independent-samples t-tests were conducted to compare vocabulary comprehension, vocabulary production, phrases comprehension, and action-gestures scores obtained from TIGE-I with this sample and the normative sample. There was not a significant difference in the scores of vocabulary comprehension ($t(1132)= -0.629$, $p> .05$); vocabulary production ($t(1138)= -0.296$, $p> .05$); phrases comprehension ($t(1145)= -0.258$, $p> .05$); and action-gestures scores ($t(1145)= -1.573$, $p> .05$) of the infants from this study's sample and from the normative sample. Therefore, regarding these variables, the sample of validation is comparable to the sample of normalization.

Both for word comprehension, phrase comprehension, actions and gestures production, and word production, there was much individual variation already at 10 months of age (see Appendix J for descriptive statistics for each measure at each month). Although there was substantial individual variation in the indices of lexical comprehension and production, all of the children were reported to comprehend at least 16 words, and 50% of the children were reported to understand 95 words. Vocabulary production values ranged from "not yet" producing any words

to 48 words. 50% of the children were reported to produce at least 11 words, and only one child is reported to produce zero words in TIGE-I. Turning to the actions and gestures measures, the average number of total actions and gestures were 31, and 50% of the children were reported to produce 29 gestures out of 68 items in TIGE-I.

At 8 months of age, children comprehended a mean of 16 words, produced a mean of approximately 21 actions and gestures, understood a mean of 1 phrase, and produced no words. At 16 months of age, children comprehended a mean of 150 words, and a mean of 20 phrases, produced a mean of approximately 43 actions and gestures, and produced 24 words. Figure 1 reports the mean percentages of a category within the maximum number of relevant items possible for each of the 4 defined categories including words comprehended, phrases understood, actions and gestures produced, and words produced according to each month of age in order to make interpretation of the results easier. The mean percentages of each category were calculated by the number of items reported in each relevant age group divided by the maximum number of relevant items possible for each category. For instance; 10 month-olds comprehend a mean of 93 words, the maximum number of the category "words understood" is 418, therefore 93/418=%22, meaning that 10 month-olds comprehend %22 of the maximum number of 418 words. As a reminder, maximum number of relevant items possible for the number of phrases understood is 28, for words understood is 418, for words produced is 418, and for the actions and gestures measures is 68. For all ages, except at 8 months of age, the percentage of phrases understood exceeded the percentage of actions and gestures produced; and the percentage of actions and gestures produced exceeded the percentage of words comprehended; and percentage of words comprehended exceeded the percentage of words produced for all ages. At 8 months of age, the

percentage of actions and gestures produced (%31) was more than the percentage of phrases comprehended (%4) and than the percentage of words comprehended (%4).

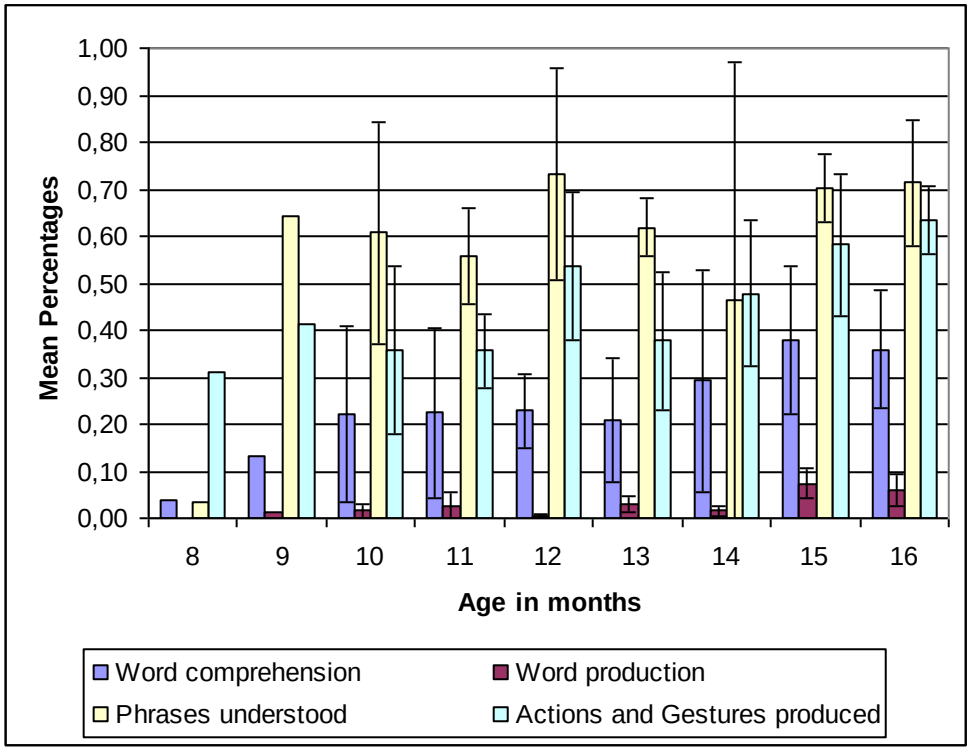

Figure 1. The mean percentages of of comprehended words, phrases understood, actions and gestures produced, and words produced at each month

The language measures of the infants examined in the spontaneous speech contexts to be compared with TIGE-I measures included the total number of different word types and word tokens produced, and actions and gestures produced. To ease the comparison between the developmental patterns shown in TIGE-I and in the spontaneous speech context, the mean numbers of comprehended phrases based on TIGE-I and on spontaneous speech samples of the same children at each month are presented in Figure 2; the mean percentages of words produced in TIGE-I and word types produced in spontaneous speech sample within the maximum number

of relevant items possible for each of the defined categories according to each month of age are shown in Figure 3; and the mean numbers of produced actions and gestures based on TIGE-I and on spontaneous speech samples of the same children at each month are given in Figure 4. The mean percentages of each category on spontaneous speech samples were calculated by the number of items reported in each relevant age group divided by the maximum number of relevant items possible for each category. The maximum number of relevant items possible for each category was computed by calculating the direct proportion of that relevant category on the spontaneous speech sample to that of TIGE. For instance; for TIGE-I the maximum number of "words produced" was 48 out of the 418 items. The maximum number for "words produced" was 34 on the spontaneous speech sample, thereby the maximum number of relevant items possible for "words produced" category on spontaneous speech sample is the corresponding proportion of that category: 296 (34*418/48=296). 16 month-olds produced a mean of 24 words on TIGE-I, the maximum number of the category "words produced" is 418 on TIGE-I, therefore 24/418=%6, meaning that 16 month-olds produce %6 of the maximum number of 418 words; correspondingly 16 month-olds produced a mean of 10 words on spontaneous speech sample, the maximum number of the category "words produced" is 296 on spontaneous speech sample, therefore 10/296=%3, meaning that 16 month-olds produce %3 of the maximum number of 296 words. As a reminder, maximum number of relevant items possible for the number of phrases understood is 17, for words produced is 296, and for the actions and gestures measures is 31.

At 8 months of age, children did not produce any words in both of the assessments. At 16 months of age, children produced a mean of 10 different word types in their spontaneous speech contexts. On the other hand, 8 month olds comprehended 1 phrase in both of the assessments, at

16 months of age, they understood a mean of 7 phrases in their spontaneous speech contexts. 8 month olds produced a mean of approximately 5 actions and gestures, and 16 month olds reached a mean of approximately 13 actions and gestures. As displayed in Figure 3, children's produced words and words types show a similar developmental trend in TIGE-I and spontaneous speech samples. To investigate the relation among the produced vocabulary, and actions-gestures, and comprehended phrases, correlations were calculated across all ages, and are examined in the following section.

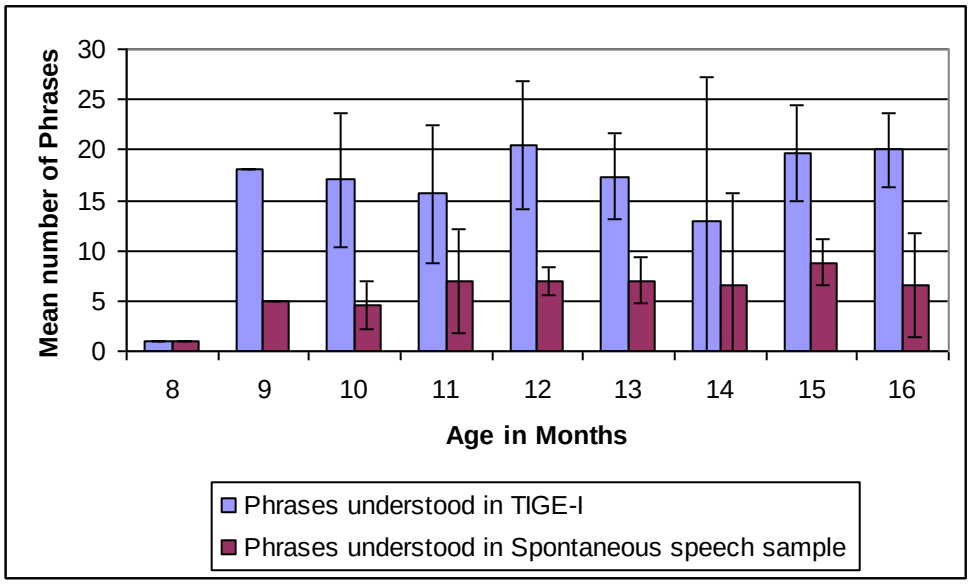

Figure 2. Mean numbers of comprehended phrases based on TIGE-I and on spontaneous speech samples of the same children at each month

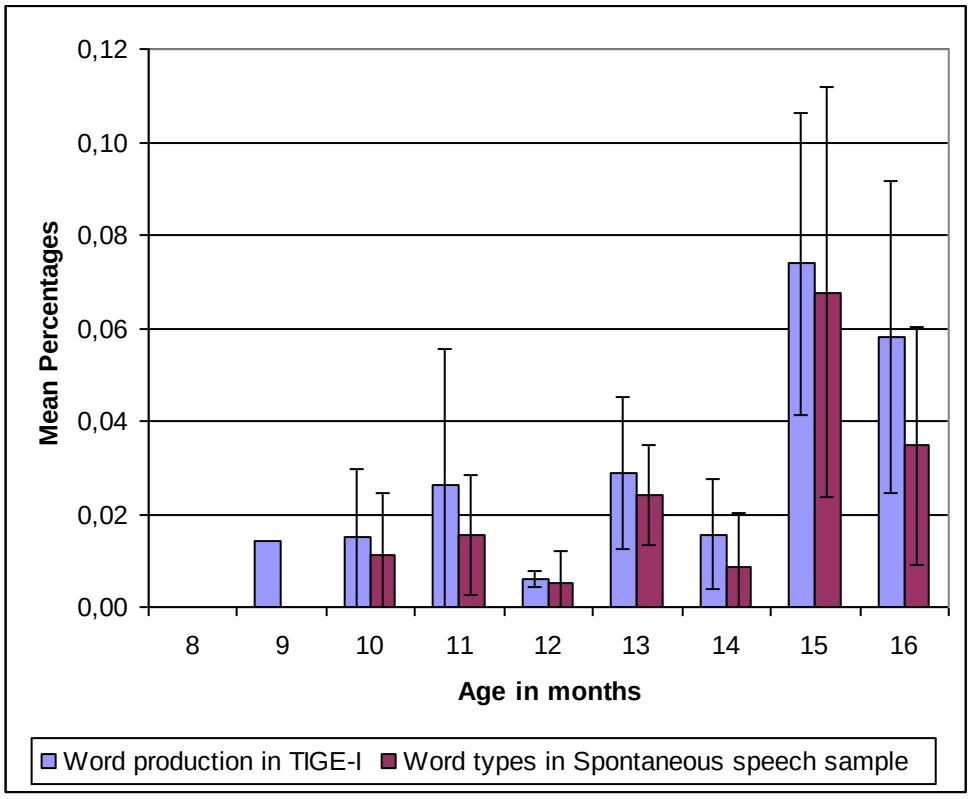

Figure 3. The mean percentages of words produced in TIGE-I and word types produced in spontaneous speech sample within the maximum number of relevant items possible for each of the defined categories according to each month of age

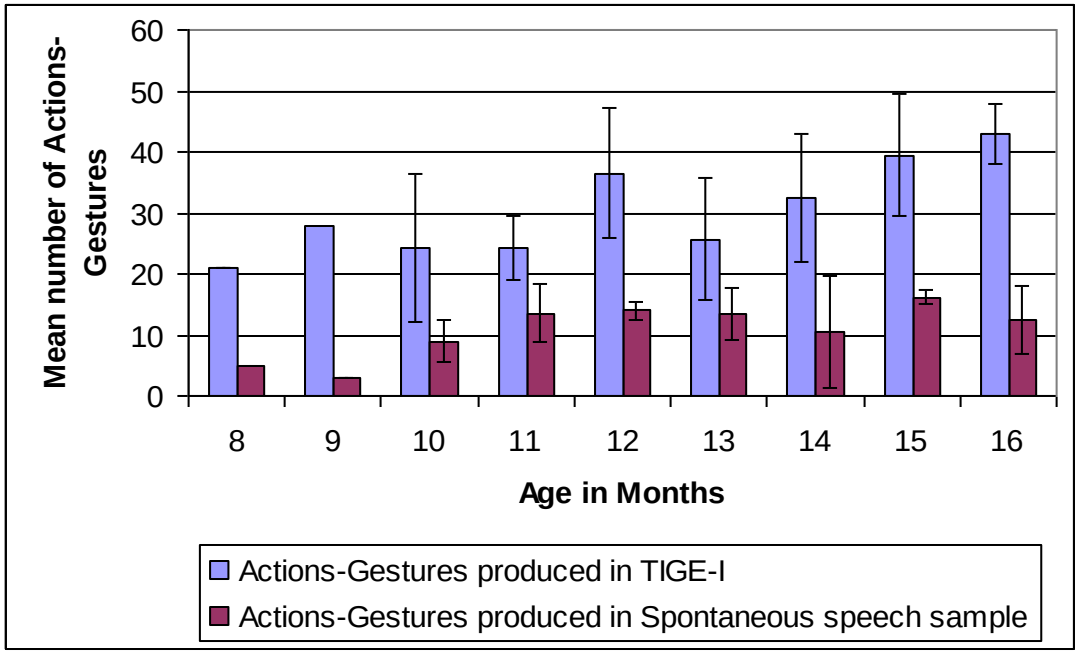

Figure 4. Mean numbers and standard deviations of produced actions and gestures based on TIGE-I and produced actions and gestures on spontaneous speech samples of the same children at each month

4.1.2. Influence of demographic factors on Tige-I and spontaneous speech performance of infants

For infants between 8 and 16 months, in vocabulary production, phrases comprehension, and action-gestures scores of the infants, no significant differences were found for demographic variables such as gender or maternal education. Separate one-way between subjects ANOVAs were conducted to compare the effect of maternal education on vocabulary production, vocabulary comprehension, phrases comprehension, and action-gestures scores of the infants, as dependent variables, and these results are reported in Table 5. There was not a significant effect of maternal education on either of the dependent variables of vocabulary production ($F(2,28) = 1.886$, $p = 0.170$), vocabulary comprehension ($F(2,28) = 2.800$, $p = 0.078$), phrases

comprehension ($F(2,28) = 1.358$, $p = 0.274$) and action-gestures scores ($F(2,28) = 1.134$, $p = 0.336$). Separate independent-samples t-tests were conducted to compare vocabulary production, vocabulary comprehension, phrases comprehension, and action-gestures scores of the infants for females and males. There was not a significant difference in the scores of vocabulary production ($t(29)= -.919$, $p= .366$) for males ($M=.91$, $SD=.36$) and females ($M=1.07$, $SD=.46$); or in the scores of vocabulary comprehension ($t(29)= -.860$, $p= .397$) for males ($M=95.10$, $SD=71.01$) and females ($M=117.33$, $SD=65.54$) or action-gestures scores ($t(29)= -1.206$, $p= .238$) of the infants for males ($M=27.80$, $SD=11.55$) and females ($M=32.86$, $SD=10.62$). There was a significant difference in the scores of understood phrases for females ($M=18.76$, $SD=5.66$) and males ($M=14.00$, $SD=6.77$); $t(29)= -2.056$, $p= .049$).

Table 5.
Means, standard deviations (SD), minimum and maximum values of TIGE-I and spontaneous language measures

	Level of Education			
Measures	Elementary (5 years or <)	Secondary (6-11 years)	College (12 years or >)	*F*
Phrases understood	15.08 (7.11)	19.08 (5.84)	18.17 (4.88)	1.358
Words understood	82.08 (63.45)	118.92 (63.72)	153.50 (62.00)	2.800
Words produced	1.05 (0.45)	0.86 (0.41)	1.27 (0.36)	1.886
Actions and Gestures produced	27.85 (12.91)	33.00 (9.79)	35.00 (7.77)	1.134

Note: Standard deviations appear in parentheses below means

4.1.3. Concurrent validity of TIGE-I

Pearson correlations were performed to measure the relationship between the scores obtained through the forms of TIGE-I and from the spontaneous speech contexts. Before the correlation analyses, all variables were examined with regard to their distribution and possible marginal scores. The score distribution of all the measures was fairly symmetrical and without outliers, except for the distributions of the "words produced" scores in TIGE-I and "number of different words" in spontaneous speech sample that were positively skewed, with most of the scores on the lower ranges (skewness =1.045; 1.736; respectively). This suggests that the data are non-normal. Therefore, as suggested by Tabachnick and Fidell (2007) logarithmic transformation was undertaken for the variables of "words produced" and "number of different words" to improve the analyses and to reduce the impact of outliers. These transformed values were used in Pearson correlations, ANOVA, and t-test analyses but not used in Spearman rank order correlations, since Spearman correlation which uses ranks to test for association is robust to outliers unlike Pearson correlation. After transforming, the skewness value was -.329 for "words produced",and -.229 for "number of different words" which was still slightly skewed, but now fell within the recommended guidelines (greater than -1 and less than +1).

Table 6 displays the correlations between TIGE-I measures at 8-16 months of ages and spontaneous language measures at the same ages. The Pearson correlations of number of phrases understood, words produced, and actions and gestures obtained from maternal reports with the same constructs obtained from the spontaneous language productions were positive and significant (r = .52; r = .79; r = .43, respectively). Although all of the correlations were

significant, word production scores showed greater correlation with word types (r = .79) than word tokens (r = .59), also when controlling for age (r = .65, r = .42, respectively).

In spite of the small sample size (n=31), the results indicate strong and significant relationships between the size of vocabulary reported by the parents and the number of different words observed in the spontaneous language samples pointing to similarly high concurrent validity. These relationships remained consistent when age was partialled out, age-partialled out correlations as shown in Table 6 and 7 by the second number in each pair, except for the correlations between the actions-gestures produced in TIGE-I and in spontaneous context. Thus, a similar pattern was seen particularly in produced vocabulary and comprehended phrases when age is partialled out, suggesting that the results are not confounded by developmental effects. To investigate the change in the significance level of the relation among actions-gestures scores, correlations were calculated separately for each subsection of actions and gestures part across all ages, and are examined in the following section.

Table 6.
Pearson correlations between TIGE-I and spontaneous language measures

	Spontaneous language measures (8-16 months)			
	Word types	Word tokens	Phrases	Action-Gestures
TIGE-I measures				
Word production	.79*** /.65***	.59*** /.42*	.28 /11	.51** /.33
Phrases	.49** /.38*	.31 /.19	.52** /.47**	.51** /.43*
Action-Gesture Production	.50** /.22	.38* /.15	.32 /.17	.43** /.24

Note. The second value in each pair is the Pearson correlation coefficient with age partialled out.
*p < .05, **p < .01, ***p < .001

Table 7.

Pearson correlations between Action and Gesture measures in TIGE-I and in the spontenaous language measures

	Spontaneous language measures (8-16 months)				
	First communicative gestures	Games and routines	Actions with objects	Pretending to be a parent	Imitating other adult actions
TIGE-I measures					
First communicative gestures	.57*** /.51**	.19 /.25	.22 /.11	.03 /-.08	.26 /.18
Games and routines	.15 /.15	.23 /.23	-.05 /-.06	-.05 /-.05	.50** /.52**
Actions with objects	.38* /.18	.15 /.27	.18 /.-.06	-.24 /-.40*	.34 /.20
Pretending to be a parent	.48** /.32	-.24 /.-21	.25 /.03	-.01 /.-10	.20 /.-04
Imitating other adult actions	.20 /-.02	.07 /.15	.35* /.20	-.23 /-.34	.43* /.32

Note. Second value in each pair is the correlation with age partialled out.
*p < .05, **p < .01, ***p < .001

Table 7 shows the Pearson correlations between actions and gestures produced in each section in TIGE-I and in spontaneous speech contexts observations. Although there were some significant correlations between the sections of actions and gestures based on TIGE-I and spontaneous speech samples, the results indicate that strong and significant relationships remained consistent only between the size of "First communicative gestures" produced by children reported by the parents and observed in the spontaneous language samples when age was partialled out, as shown by the second number in each pair.

As a further test of the degree of association between vocabulary and actions and gestures scores in TIGE-I and spontaneous speech context, we divided the sample into four categories based on the ≤24th, 25th to 49th, 50th to 74th, and ≥75th percentiles for the measures. The number of children that scored equal or less than the specific values that represent the percentiles were sorted into four categories. Henceforth these four categories were labeled as quartiles. These quartiles -four categories- were then cross-tabulated, as can be seen in Table 8 for vocabulary scores, and in Table 9 for the actions and gestures scores. Crosstabulation tables display the number of cases and percentages that fit that particular combination of responses, such as the number of children who had scores that fell in the 1st quartile (1st category) on both measures, TIGE and spontaneous speech sample.

The association between vocabulary scores in TIGE-I and spontaneous speech context as measured with a 4-by-4 two-tailed Fisher exact test was significant , $\chi 2(N=31) = 20,85,\ p < .002$. A total of 19 out of the 31 children (61%) were placed in exactly the same category on the two measures (see Appendix K for the categories and rank orderings of each child). Differences in

classification were evenly balanced across the two measures, as can also be seen in Figure 5. For example, 5 children (71%) fell in the 1st quartile on both measures, whereas 2 children (29%) who fell in the 1st quartile on TIGE-I fell into the next quartile bracket on the spontaneous speech sample. In addition, among the children who fell in the 4th quartile on spontaneous speech sample, 5 of them (83%) were also in the same quartile on TIGE-I, compared to 1 child (17%) who fell into the one lower quartile. The Spearman rank order correlations also supported these results indicating strong and significant relationships between the rank orderings of children's vocabulary production scores based on TIGE-I and produced word types scores based on the spontaneous speech context (r = .80, p<.001).

Table 8.

Number and percentages of children in quartiles across TIGE-I and spontaneous speech sample for produced vocabulary

	Quartiles	Total number of different word types produced in spontaneous speech				Total
		1st	2nd	3rd	4th	
TIGE-I total number of words produced	1st	5 71.40%	2 28.60%	1 9.10%	0 0.00%	8 25.80%
	2nd	2 28.60%	3 42.90%	2 18.20%	0 0.00%	7 22.60%
	3rd	0 0.00%	1 14.30%	6 54.50%	1 16.70%	8 25.80%
	4th	0 0.00%	1 14.30%	2 18.20%	5 83.30%	8 25.80%
Total		7 22.60%	7 22.60%	11 35.50%	6 19.40%	31 100.00%

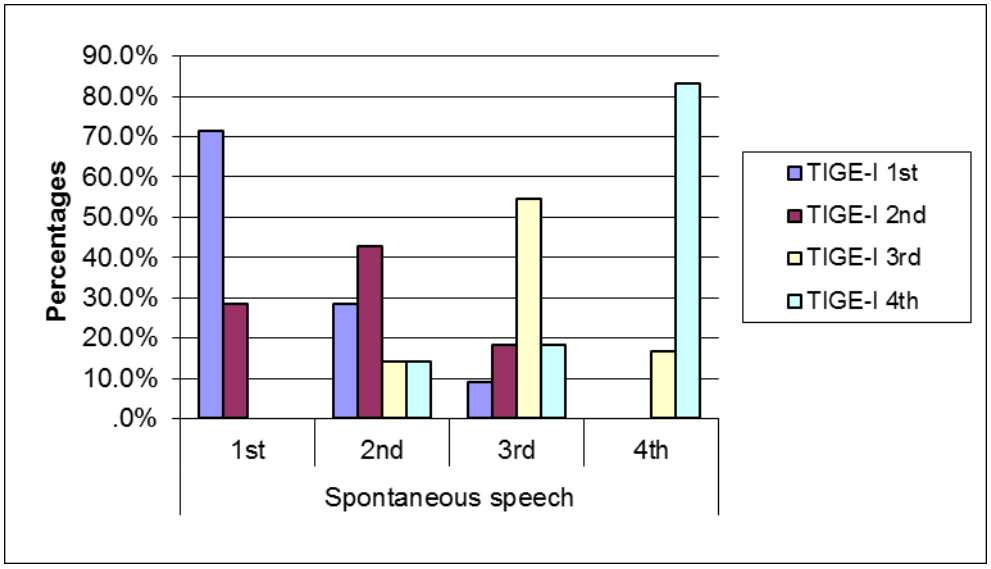

Figure 5. Distribution of children to quartiles on TIGE-I and spontaneous speech for vocabulary

Table 9 presents the cross-tabulated quartiles for the measures of actions and gestures scores in TIGE-I and spontaneous speech context. The association between actions and gestures scores in TIGE-I and spontaneous speech context as measured with a 4-by-4 two-tailed Fisher exact test was also significant , $\chi 2(N=31) = 15,30, p < .039$. A total of 12 out of the 31 children (39%) were placed in exactly the same quartile on the two measures (see Appendix L for the percentile categories and rank orderings of each child). Differences in classification were slightly balanced across the two measures for the low quartiles, however were not much balanced for higher rankings. For example, 4 children (57%) fell below the 1st quartile on both instruments, whereas 2 children (20%) who fell below the 1st quartile on TIGE-I fell into the next bracket on the spontaneous speech sample. In comparison, among the children who fell above the 4th quartile on TIGE-I, 1 of them (17%) were in the same quartile on spontaneous speech sample, compared to 3 children (38%) who fell into the previous (one lower) quartile, and 4 children (40%) who fell into the antepenultimate (two lower) quartile. Therefore, results indicate that the

rank ordering of children by total vocabulary score as assessed by TIGE-I and the spontaneous speech context is much more similar than the rank ordering of children by the actions and gestures scores as assessed by TIGE-I and the spontaneous speech context. The Spearman rank order correlations also provide evidence for this conclusion as indicating less strong but significant relationships between the rank orderings of children's produced actions and gestures scores based on TIGE-I and on the spontaneous speech context (r = .41, p<.05) than the relation between the produced vocabulary scores based on TIGE-I and on the spontaneous speech context (r = .80, p<.001).

Table 9.
Number and percentages of children in quartiles across TIGE-I and spontaneous speech sample for actions and gestures

		Total observed actions and gestures in spontaneous speech				
	Quartiles	1st	2nd	3rd	4th	Total
Total reported actions and gestures in TIGE-I	1st	4	2	1	0	7
		57.1%	20.0%	12.5%	.0%	22.6%
	2nd	2	4	1	1	8
		28.6%	40.0%	12.5%	16.7%	25.8%
	3rd	1	0	3	4	8
		14.3%	.0%	37.5%	66.7%	25.8%
	4th	0	4	3	1	8
		.0%	40.0%	37.5%	16.7%	25.8%
Total		7	10	8	6	31
		22.6%	32.3%	25.8%	19.4%	100.0%

4.2. TIGE-II and Spontaneous speech sample measures at ages 16-36 months

4.2.1. Descriptive measures

Table 10 presents the means, standard deviations (SD), minimum and maximum scores for each of the language measures obtained from both TIGE-II and spontaneous speech contexts.

Table 10.
Means (M), standard deviations (SD), minimum and maximum values of TIGE-II and spontaneous language measures

Measures	M	SD	Minimum	Maximum	N
TIGE-II (16-36 months)					
Words produced	283.99	248.99	6	710	76
Grammatical complexity	6.08	5.93	0	18	72
M3L	1.12	0.82	0	2.5	63
Spontaneous Language (16-36 months)					
Word tokens	295.47	306.88	0	1463	76
Word types	108.05	114.21	0	584	76
MLU	63.11	77.08	0	321.5	76

None of the children scored at ceiling by showing knowledge of all the items of any of the measures except one child who scored at ceiling on the “grammatical complexity” section of TIGE-II. 14 children (%18) scored at floor on the “grammatical complexity” section of TIGE-II; and 19 children (%25) scored at floor on the M3L section of TIGE-II; in comparison to 1 child (%1) on the “different word types” and 16 children (%21) on the MLU scored at floor on the spontaneous speech context. Because transformed values were used, all of the validation analyses were done with the full sample of children.

The means for vocabulary production (*M*=283.99, *SD*=248.99) size obtained from TIGE-II with this sample were slightly lower than the values described in the normative samples covering the same age range of the validity sample (*M*=325.10, *SD*=249.60, n=2422) (Aksu-Koç, et al. 2011), although the scores were within the standard deviation range of the normative sample. Independent-samples t-test was conducted to compare vocabulary production scores obtained from TIGE-II with this sample and the normative sample. There was not a significant difference in the scores of vocabulary production ($t(2498)= -1.413$, $p> .05$) of the children from this study's sample and from the normative sample. Therefore, regarding production, the mean scores obtained with this sample were within the values described in the normative sample.

Again, the results indicated that there was a wide range of lexical and grammatical abilities in all measures. Although there was substantial individual variation, all of the children were reported to produce at least 6 words and 50% of the children were reported to produce at least 194 words in TIGE-II. At 16 months of age, children produced approximately 31 words; at 36 months of age, their vocabulary capacity reached a mean of 595 words.

For the comparison between the developmental patterns shown in TIGE-II and in the spontaneous speech context, the mean percentages of produced words reported in TIGE-II and word types produced in spontaneous speech sample within the maximum number of relevant items possible for each of the defined categories according to each month of age are displayed in Figure 6. As displayed in Figure 6, children's produced words and words types show a similar developmental trend. To investigate the relation among them, correlations were calculated across all ages, and are presented in the following section.

Regarding morphosyntactic complexity, the mean length of the three longest sentences (M3L) according to parents based on TIGE-II showed a level of grammatical development similar to that of the MLU scores observed in the spontaneous language at the same age, as can be seen in Figure7. Figure 7 reports the mean percentages of a category within the maximum number of relevant items possible for each of the 3 defined categories including grammatical complexity, M3L, and MLU according to each month of age in order to make interpretation of the results easier. In order to provide information about the relation among TIGE-obtained and spontaneously produced forms, correlations were calculated across all ages, and are presented in the following section.

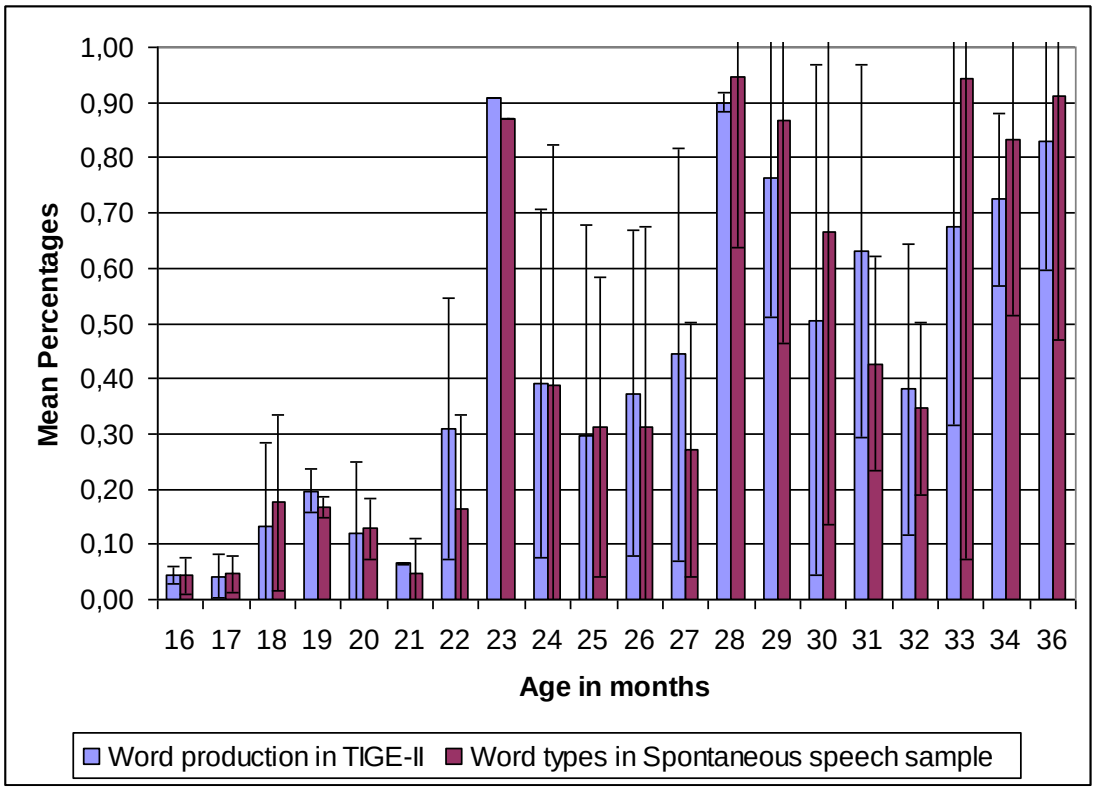

Figure 6. The mean percentages of produced words based on TIGE-II and produced word types on spontaneous speech samples at each month

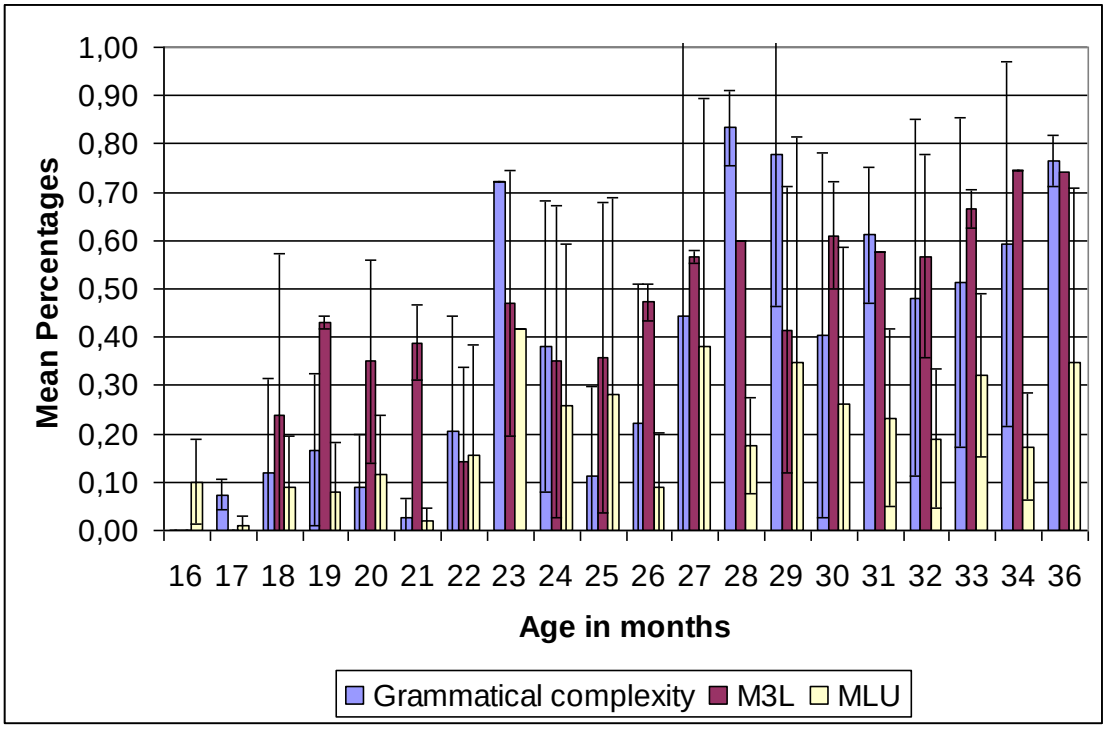

Figure 7. The mean percentages of grammatical complexity, M3L, and MLU at each month

4.2.2. Influence of demographic factors on Tige-II and spontaneous speech performance of infants

Vocabulary and grammar measures of the children aged 16-36 months were affected by gender of the child; even though they were not influenced by the education level of the mothers. Separate one-way between subjects ANOVAs were conducted to compare the effect of maternal education on vocabulary production, grammatical complexity, and M3L scores of the children, as dependent variables, and the results are reported in Table 11. There was not a significant effect of maternal education on either of the dependent variables of vocabulary production ($F(2,73) = 0.346$, $p = 0.708$), grammatical complexity ($F(2,69) = 0.480$, $p = 0.621$), or M3L ($F(2,60) = 2.453$, $p = 0.095$).

Separate independent-samples t-tests were conducted to compare vocabulary production, grammatical complexity, and M3L scores of the children for females and males. Girls, in general, outperformed boys. There was a significant difference in the scores of vocabulary production ($t(74)= -2.312$, $p= .024$) for males ($M=2.02$, $SD=.53$) and females ($M=2.32$, $SD=.57$); and in the scores of grammatical complexity ($t(70)= -3.366$, $p= .001$) for males ($M=.46$, $SD=.43$) and females ($M=.80$, $SD=.44$) and M3L scores ($t(61)= -2.841$, $p= .006$) of the infants for males ($M=.21$, $SD=.19$) and females ($M=.35$, $SD=.18$). Therefore, gender in addition to ages of the children were controlled in the further investigation of the concurrent validity analyses in which relations of the vocabulary and grammar measures of children are examined across TIGE and spontaneous speech samples.

Table 11.

Means, standard deviations (SD), minimum and maximum values of TIGE-II and spontaneous language measures

	Level of Education			
Measures	Elementary (5 years or <)	Secondary (6-11 years)	College (12 years or >)	*F*
Words produced	2.17	2.14	2.29	0.346
	-0.56	-0.58	-0.61	
Grammatical complexity	0.61	0.62	0.76	0.48
	-0.48	-0.48	-0.44	
M3L	0.23	0.29	0.38	2.453
	-0.22	-0.18	-0.17	

Note: Standard deviations appear in parentheses below means

4.2.3. Concurrent validity of TIGE-II

Pearson correlations were performed to measure the relationship between the scores obtained through the forms of TIGE-II and from the spontaneous speech contexts. All variables were examined with regard to their distribution and possible marginal scores before the correlation analyses. The score distribution of all the measures was asymmetrical, both the distributions of the "words produced" scores (skewness = .610) and "grammatical complexity" (skewness = .738) in TIGE-II and "number of different words" (skewness = 1.812), and "MLU" (skewness = 1.868) in spontaneous speech sample that were positively skewed, with most of the scores on the lower ranges, except for the distribution of "M3L" in TIGE-II (skewness = -246); however its Kurtosis value was high (kurtosis = -1.395). These values suggested that the data were non-normal. Therefore, logarithmic transformation was undertaken for these variables to improve the analyses and to reduce the impact of outliers. These transformed values were used in Pearson correlations, ANOVA, and t-test analyses but not used in Spearman rank order correlations, since Spearman correlation which uses ranks to test for association is robust to outliers unlike Pearson correlation. After transforming, the skewness value was -.488 for "words produced", -.090 for "grammatical complexity" and -.626 for M3L, -.750 for "number of different words", and -.632 for MLU which was still slightly skewed, but now fell within the recommended guidelines (greater than -1 and less than +1). Table 12 and 13 display the correlations between TIGE-II measures at 16-36 months of age and spontaneous language measures at the same ages. The Pearson correlations indicate strong and significant relationships between all of the lexical and grammatical measures separately obtained through TIGE-II and spontaneously produced in speech. Size of vocabulary in TIGE-II was significantly correlated

with both word types (r = 0.83) and word tokens (r = 0.76) in the speech sample. The concordance between reported grammar abilities and the measures of grammar in the speech sample was also significant. The reported length of the three longest utterances (M3L) and grammatical complexity scores of the children were significantly and positively correlated with the observed MLU of the children (r's = 0.48, 0.57, respectively). Indeed, these relationships remained consistent when age and gender were partialled out, as shown by the second number in each pair in Table 12 and Table 13; indicating that correlations were not confounded by developmental effects or demographic factors such as age and gender. These strong correlations between the scores indicate that both measures assess vocabulary and grammar in a similar way. Therefore, these results reveal that the lexical and grammatical development established in TIGE-II is similar to the development observed in spontaneous speech, pointing to a high concurrent validity.

Table 12.

Concurrent Pearson correlations between TIGE-II and spontaneous language measures with age partialled out

	Spontaneous language measures (16-36 months)		
TIGE-II measures	Word types	Word tokens	MLU
Word production	.83*** /.74***	.76*** /.61***	.51*** /.44***
M3L	.63*** /.44***	.56*** /.35**	.48*** /.41**
Grammatical Complexity	.81*** /.70***	.75*** /.61***	.57*** /.53***

Note. Second value in each pair is the correlation with age partialled out.

*p < .05, **p < .01, ***p < .001

Table 13.
Concurrent Pearson correlations between TIGE-II and spontaneous language measures with gender partialled out

	Spontaneous language measures (16-36 months)		
TIGE-II measures	Word types	Word tokens	MLU
Word production	.83*** /.82***	.76*** /.73***	.51*** /.45***
M3L	.63*** /.57***	.56*** /.50***	.48*** /.41***
Grammatical Complexity	.81*** /.78***	.75*** /.71***	.57*** /.50***

Note. Second value in each pair is the correlation with gender partialled out.
*p < .05, **p < .01, ***p < .001

As a further test of the degree of association between vocabulary and grammar scores in TIGE-II and spontaneous speech sample, we divided the sample into four categories based on the ≤24th, 25th to 49th, 50th to 74th, and ≥75th percentiles for the measures. The number of children that scored equal or less than the specific values that represent the percentiles were sorted into four categories. Henceforth these four categories were labeled as quartiles. These quartiles -four categories- were then cross-tabulated, as can be seen in Table 14 for vocabulary scores, and Table 15 and 16 for grammar scores. Crosstabulation tables display the number of cases and percentages that fit that particular combination of responses, such as the number of children who had scores that fell in the 1st quartile (1st category) on both measures, TIGE and spontaneous speech sample. The association between vocabulary scores in TIGE-II and spontaneous speech context as measured with a 4-by-4 two-tailed Fisher exact test was significant , $\chi 2(N=76) = 73.77$, $p < .001$. Results revealed that a total of 52 out of the 76 children (68%) were placed in exactly the same category on the two measures (see Appendix M for the percentile categories and

rank orderings of each child). Differences in classification were evenly balanced across the two measures as can also be seen in Figure 8. For example, 15 children (79%) fell in the 1st quartile on both measures, compared to 2 children (11%) who fell in the 1st quartile on TIGE-II fell into the next bracket (2nd quartile), and 1 child (5%) fell into the antepenultimate (3rd quartile), and none fell in the 4th quartile on the spontaneous speech sample. In addition, among the children who fell in the 4th quartile on spontaneous speech sample, 16 of them (80%) were also in the same category on TIGE-II, compared to 4 children (20%) who fell into the previous category (3rd quartile), and none fell into the antepenultimate quartile on TIGE-II. The Spearman rank order correlations also supported these results indicating strong and significant relationships between the rank orderings of children's vocabulary production scores based on TIGE-II and produced word types scores based on the spontaneous speech context (r = .87, p<.001).

Table 14.
Number and percentages of children in quartiles across TIGE-II and spontaneous speech sample for vocabulary production

	Quartiles	Total number of different word types produced in spontaneous speech				Total
		1st	2nd	3rd	4th	
TIGE-II total number of words produced	1st	15	2	1	0	18
		78.90%	11.10%	5.30%	0.00%	23.70%
	2nd	3	11	5	0	19
		15.80%	61.10%	26.30%	0.00%	25.00%
	3rd	1	4	10	4	19
		5.30%	22.20%	52.60%	20.00%	25.00%
	4th	0	1	3	16	20
		0.00%	5.60%	15.80%	80.00%	26.30%
Total		19	18	19	20	76
		25.00%	23.70%	25.00%	26.30%	100.00%

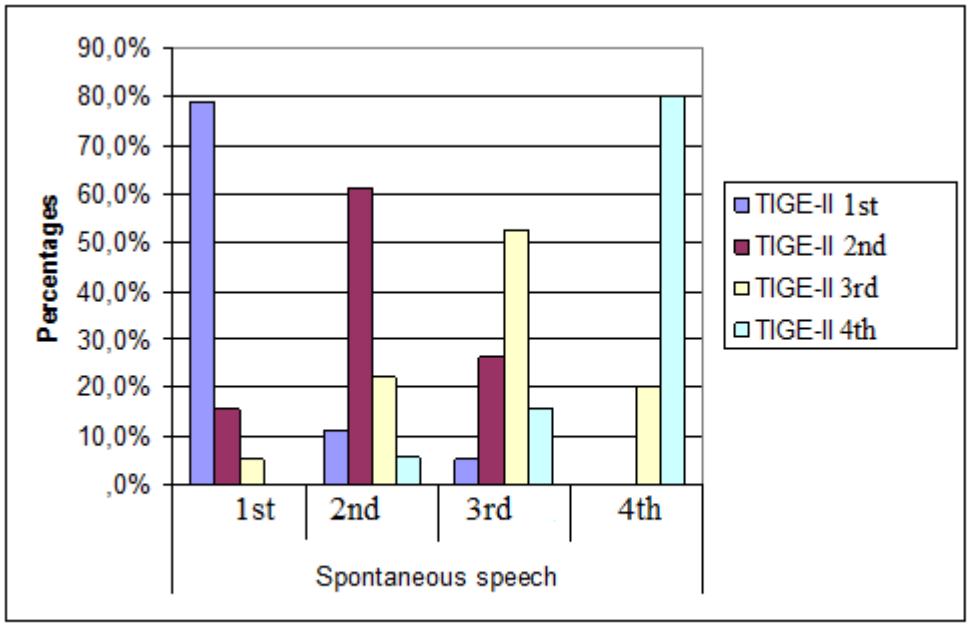

Figure 8. Distribution of children to quartiles on TIGE-II and spontaneous speech for vocabulary

The association between M3L scores in TIGE-II and MLU in spontaneous speech sample as measured with a 4-by-4 two-tailed Fisher exact test was significant , $\chi 2(N=63) = 27.54$, $p < .001$. Rank orderings of the children demonstrated that a total of 25 out of the 63 children (40%) were placed in exactly the same category on the two measures (see Appendix N for the percentile categories and rank orderings of each child). The Spearman rank order correlations also indicate significant relationships between the rank orderings of children's M3L scores based on TIGE-II and MLU scores based on the spontaneous speech context ($r = .60$, $p<.001$), although it is not as strong as the relationship between vocabulary measures. As Table 15 and Figure 9 displays that 7 children (44%) fell in the 1st quartile on both measures, whereas 9 children (50%) who fell in the 1st quartile on TIGE-II fell into the next bracket (2nd quartile) on the spontaneous speech sample,

correspondingly, although 2 children (11%) fell in the 2nd quartile on both measures, 6 children (38%) who fell in the 1st quartile on spontaneous language measure fell into the next percentile bracket (2nd quartile) on TIGE-II. On the other hand, regarding the higher categories, majority of the children fell within the same categories on both measures: 9 children (53%) fell within the 3rd quartile, 8 children (67%) fell in the 4th quartile on both measures.

Table 15.
Number and percentages of children in quartiles across TIGE-II and spontaneous speech sample for MLU

	Quartiles	MLU based on Spontaneous speech				Total
		1st	2nd	3rd	4th	
M3L based on TIGE-II	1st	7	9	3	0	19
		43.80%	50.00%	17.60%	0.00%	30.20%
	2nd	6	2	1	2	11
		37.50%	11.10%	5.90%	16.70%	17.50%
	3rd	2	5	9	2	18
		12.50%	27.80%	52.90%	16.70%	28.60%
	4th	1	2	4	8	15
		6.30%	11.10%	23.50%	66.70%	23.80%
Total		16	18	17	12	63
		25.40%	28.60%	27.00%	19.00%	100.00%

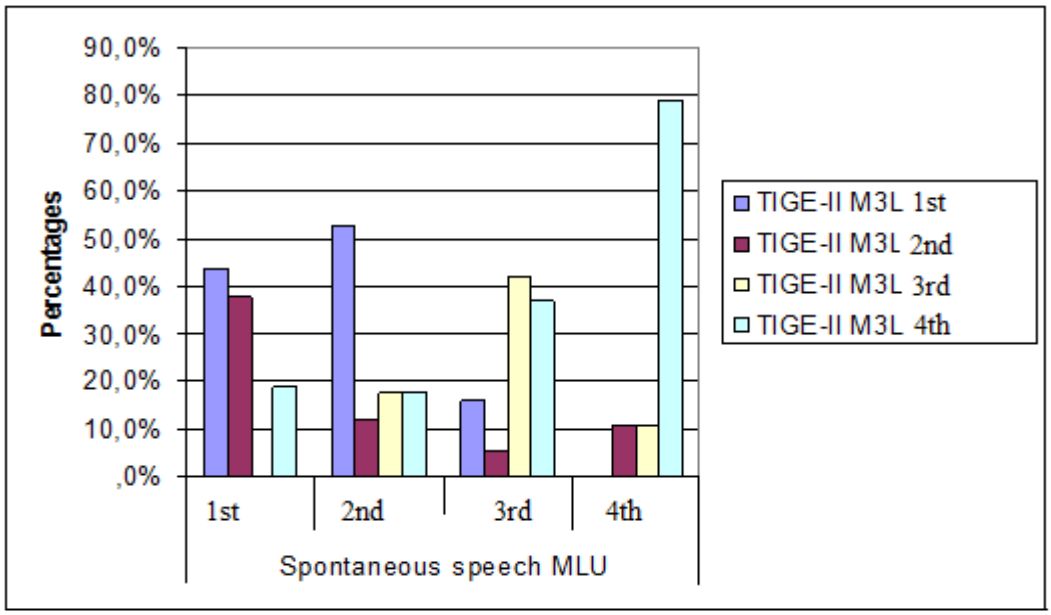

Figure 9. Distribution of children to quartiles on TIGE-II and spontaneous speech for MLU

The association between grammatical complexity scores in TIGE-II and MLU in spontaneous speech sample as measured with a 4-by-4 two-tailed Fisher exact test was significant , $\chi 2(N=72) = 28.30$, $p < .001$. The Spearman rank order correlations between the rank orderings of children's grammatical complexity scores based on TIGE-II and MLU scores based on the spontaneous speech context were significant but not strong enough ($r = .53$, $p<.001$). As Table 16 shows, a total of only 27 out of the 72 children (38%) were placed in exactly the same category on the two measures (see Appendix O for the percentile categories and rank orderings of each child). Indeed, 13 children (41%) who fell in the 1st quartile on the spontaneous speech measure also fell in the same quartile on TIGE-II, compared to 11 children (34%) fell into the next category (2nd quartile), and 6 of the children (19%) fell in the 3rd quartile). In comparison, among the children who fell in the 4th quartile on spontaneous speech sample, 7 of the children

(47%) fell in the 4th quartile on TIGE-II, compared to 3 of the children fell in the previous categories (3rd and 2nd quartiles, respectively). However, among the children who fell in the 2nd quartile on spontaneous speech sample, 2 of them (67%) fell in the 1st quartile on TIGE-II, compared to 1 of them (33%) fell in the same quartile on TIGE-II, and among the children who fell in the 3rd quartile , 9 of them (41%) fell in the same quartile on TIGE-II, however, 9 of them (41%) fell in the 4th quartile, and 4 (18%) fell in the previous quartile (2nd) on TIGE-II.

Table 16.

Number and percentages of children in quartiles across TIGE-II and spontaneous speech sample for grammatical complexity

	Quartiles	MLU based on Spontaneous speech				Total
		1st	2nd	3rd	4th	
TIGE-II grammatical complexity	1st	13	2	0	2	17
		40.60%	66.70%	0.00%	13.30%	23.60%
	2nd	11	1	4	3	19
		34.40%	33.30%	18.20%	20.00%	26.40%
	3rd	6	0	9	3	18
		18.80%	0.00%	40.90%	20.00%	25.00%
	4th	2	0	9	7	18
		6.30%	0.00%	40.90%	46.70%	25.00%
Total		32	3	22	15	72
		44.40%	4.20%	30.60%	20.80%	100.00 %

CHAPTER 5: DISCUSSION

The work presented in this thesis assessed the concurrent validity of the Turkish adaptation of MB-CDI (TIGE) by evaluating the degree of association between scores on TIGE and analyses of child contributions in parent-child daily conversations.

The descriptive results indicate that the sample scores obtained in TIGE at different ages were similar to the normative data mean scores. In other words, the children in this sample appear to have the same pattern of language development as in the much larger normative sample (Aksu-Koç et al., 2011). Regarding concurrent validity, we found that correlations between scores on all scales of TIGE-I & TIGE-II and the same constructs obtained from the spontaneous language productions obtained at the same age were positive and statistically significant, even when age was controlled for. The high concurrent validity measures in the current study are in line with other MB-CDI validity studies, which have reported correlations in the range of r = .60 to .83 between parent report and language samples (Dale, 1991; Dale, Bates, Reznick, & Morrisset, 1989; Fenson et al., 1994).

These results are encouraging for the appropriateness of using TIGE in studies of language acquisition and development in Turkish. The results of this study contributes to the evidence that mothers are reasonably good informants about their child's expressive language development, especially when the children are at the beginning of language and communication learning, at the ages 8 to 36 months. Although some previous studies have found that the accuracy of parent reports about language comprehension skills at different ages is poorer than

that about language production skills (e.g. Feldman et al., 2000) they still attest to their validity. This study also partially supports that mothers are valid observers about their child's receptive language development, since our results revealed that the scores of the phrases understood were also similar on the two measures. Mothers were also found to give accurate estimations about their children's produced actions and gestures; since concurrent validity of the actions and gestures obtained from maternal reports demonstrated strong and significant correlations with the spontaneous language samples.

Regarding measures of rank orderings, results also demonstrated that TIGE was effective at sorting children according to their language status. TIGE is an effective tool to sort children into lower, average and higher language level groups in terms of their performance on the spontaneous language measures. In other words TIGE provided very similar information about the rank ordering of children in terms of total vocabulary and grammatical complexity to the spontaneous language measures. TIGE and the spontaneous language measures also yielded comparable data with regard to rank ordering of children in terms of actions and gestures development. Therefore, data presented here suggest that TIGE could be useful not only to identify children who are average (between the 2nd and 3rd quartiles) and above average (4th quartile) in vocabulary development, but also to identify children who may be at high risk for early language delay (e.g., in the 1st quartile in vocabulary development).

The concurrent validity for TIGE was not affected by the gender differences obtained in language skills of 16 to 36 month-olds. For the sample of TIGE-II there was a significant effect of gender for lexical and grammar scales, with girls having higher scores than boys. More

specifically, between 16 and 36 months, girls produce more words than boys, and their utterances contain more grammatical forms, and are more advanced syntactically, as also established in the larger normative sample (Aksu-Koç et al., 2011). The gender-based differences in language acquisition by Turkish-speaking children are consistent with the other findings concerning the influence of gender on language acquisition (e.g. Bornstein et al., 2004; Boudreault & Trudeau, 2005; Fenson et al., 1994; Saudino, 1998). However, it is worth noting that although girls tended to produce more words than boys, the same trend was not seen in the younger ages between 8 and 16 months, girls and boys understand and produce equal numbers of words. This finding may mean that the gender difference is specific to productive skills and become apparent with development, but it could also mean that our sample size (n=31) was not large enough to capture the differences between boys and girls in younger ages because there was a significant effect of gender for receptive and expressive vocabulary of the 8-16 month-olds in the normative data (Aksu-Koç et al., 2011).

Regarding the effects of demographic variables on communicative and language skills of children, we were unable to demonstrate any effects of maternal education and hence could not confirm the findings of the normative data (Aksu-Koç et al., 2011) and other several studies (e.g. Arriaga et al., 1998; Bornstein et al., 1998; Fenson et al ., 1994; Hoff-Ginsberg, 1991; 1998). There were no differences in maternal reporting accuracy between low-middle-and high educated mothers; that is, mothers from low-education reported their children's language skills on TIGE with the same degree of accuracy as mothers in middle or high-education level. Thus, these results either suggest that education level of mothers is not related to the quantitative differences in early communicative skills in Turkish-speaking children from 8-36 months of age or our

sample size did not have enough variation to demonstrate the effects of maternal education. In our sample, 47% of the children had mothers who had graduated from elementary school, and %35 had mothers who had completed high school in comparison, 19% of the children had mothers who had completed college. Besides, a continuous measure of maternal education, rather than the categorical one that was used in this study, might yield more variation to capture the effect of maternal education. On the other hand, there might also be methodological issues that affect the results. TIGE forms were completed after the language sample was obtained. This was done to ensure that the language samples were gathered while the child was most alert, and not to lead the direction of the mother-child conversations towards using vocabulary and other forms that would have been presented via TIGE previously. In addition, such an ordering of tasks (TIGE after samples) might have increased the attention of the mothers to their children's language skills, and thus increase the tendency for the "show-off" mode we sometimes observe in recorded mother-child interactions. Above all, when we collected data , we explained the instructions to the mothers repeatedly, and especially emphasized the distinction between the words children know and the words they actually produce, since a word is accepted as "produced" if the child repeatedly uses that word in a way connected repeatedly to the same referent (not only imitated after the mother's speech). By emphasizing this distinction, we helped the mothers to give accurate responses on their children's linguistic usage not conceptual understanding. Therefore, regardless of the maternal education level, all mothers responding to TIGE reported their children's language skills with the same degree of accuracy.

In brief, the comparisons between parental assessment of gestural, lexical and grammatical abilities and similar measures based on spontaneous productions reveal that overall

TIGE shows good levels of concurrent validity, similar to those obtained with other adaptations. Therefore, the results indicate that mothers seem to reliably evaluate their children's linguistic capacity and were accurate in their estimation of their children's early communicative and language development in Turkish.

Regarding the specific contributions of this study to the literature of language development, and in particular validity studies of the MB-CDI, it should be noted that validity studies of the MB-CDI are relatively infrequent when compared to its increasing popularity in large-scale research studies. Moreover, validation studies typically use a much smaller sample, since the process of collecting, transcribing, and analyzing speech samples is labour-intensive, time-consuming, and costly. For example, Dale (1991) included 24 children in his validation of the toddler scale; there were 17 children in the Italian (Camaioni, Caselli, Longobardi, & Volterra, 1990), 17 in the Spanish adaptation (Jackson-Maldonado, Thal, Marchman, Bates, & Gutierrez-Clellen, 1993); 18 in the Icelandic (Thordardottir & Ellis Weismer, 1996); and 21 children were included in the Irish adaptation (Toole and Fletcher, 2010). In addition, most of the validation studies use a sample that consists of a restricted age range. For instance, Corkum and Dunham, (1996) and Perez-Pereira & Resches (2011) examined 18 and 24 month-old children; Dale, (1991), Feldman and her colleagues, (2005) and Pan and her co-workers (2004) examined 24 month-olds ; there were 27 month olds in Marchman and Martinez Sussmann's study (2002); 22 and 26 month-olds in Eriksson's (2001); 20 and 28 month-olds in Thal et al.'s study (2000). Furthermore, there is a predominance of high SES parents in the samples of most of the studies in the literature (e.g. Fenson et al., 1994; Hamilton et al., 2000; Maital et al., 2000). In comparison, this study with a sample of 107 children aged 8 months to 3 years with mothers from different

educational backgrounds, had a relatively large sample size, and greater variability in child age, and maternal education. Besides, in the present study, the speech samples were obtained in the children's homes, which increase ecological validity in comparison to other studies (e.g. Corkum & Dunham, 1996; Ring & Fenson, 2000; Thal et al., 2000) that obtained language samples in the laboratory. Furthermore, in comparison to the validity studies of the expressive vocabulary and grammatical scores of MB-CDI, validity studies of the receptive vocabulary or actions and gestures scores are scarce. To the best of our knowledge there are still very few studies on early stages of communication and actions-gestures (e.g. Caselli, Rinaldi, Stefanini, Volterra, 2012; Eriksson & Berglund, 1999; Fenson et al., 1994, Fenson et al., 2007; Kern, 2007). Thus, the results of our study constitute an important empirical contribution to the growing literature on the concurrent validity of the reported actions and gestures in addition to the comprehended phrases with the goal of using evidence from observed gesture use by children in spontaneous speech In particular, the results offers a relevant contribution to the validity studies of the MB-CDI demonstrating the developing repertoire of actions and gestures of 8-16 month-olds and suggesting that mothers are also reasonably good informants about their children's actions and gestures in relation to early word comprehension, although certainly more research is needed to ascertain the developmental relations among actions, gestures, and words. Therefore, this study contributes to the literature by systematically and effectively measuring the validity of a recently built maternal report checklist for assessing children's early developing language in a relatively large sample. Consequently, TIGE will not only allow the investigation of normal course and pace of language acquisition in Turkish, but also the identification and intervention of language

delays or disorders. TIGE is expected to respond to the need for a valid language development assessment tool for the very beginnings of language learning in Turkish-speaking children.

CHAPTER 6: CONCLUSION

Understanding the course and pace of early language acquisition and development both within and across languages is essential not only for examining the variation in language and cognitive development, but also for the identification and intervention of language delays or disorders. Hence, developing effective, practical and age-appropriate methods of early language assessment has been of interest to both researchers and practitioners in the field of developmental psychology. Parent reports have been one of the commonly used tools for assessing language development, and the variability of language skills among children. Parent reports are practical and effective by allowing the collection of rich data from large samples at low cost in terms of human resources and time investment. On the other hand, concerns have been raised about the validity of parent reports, particularly with respect to minority and low-income families. Accordingly, in recognition of the increasing popularity of the parent reports in large-scale research studies on child language, and the debate regarding their accuracy, this M.A. study contributed to the literature by assessing the concurrent validity of the adaptation of the MB-CDI to Turkish "the Turkish Communicative Development Inventory" (TIGE) by evaluating the degree of association between scores obtained on TIGE and similar scores drawn from parent-child daily conversations.

In light of the results of this study, it is possible to conclude that both TIGE-I and TIGE-II demonstrate good concurrent validity, and provide adequate assessment of gestural, lexical and grammatical abilities of children at the ages studied. Mothers, irrespective of their education level, were generally able to provide accurate information about their children's language by 8 months

of age to the 36 months of age. To summarize, the relations among the several sections of TIGE and the spontaneous measures of gestures, vocabulary and grammar support the validity of the Turkish communicative inventory as a developmentally sensitive measure of gestural, lexical and grammatical growth. These results may have implications for the early identification of language impairment. Further studies using a longitudinal approach could be carried out to evaluate other types of validity, such as content validity or the predictive validity of TIGE by validating TIGE with other standardized measures in addition to the spontaneous speech samples as well as for components of TIGE not studied in the present research, such as vocabulary comprehension.

APPENDIX

Appendix A

TIGE-I

"8-16 ay arasında bebekler duydukları dildeki sözcükleri anlamaya ve dönemin sonuna doğru da tek tek sözcükler üretmeye başlarlar. Sekiz aylık bu yaş diliminde gelişim hızlı seyreder ve bu dönemin başındaki ve sonundaki çocuklar arasında dil gelişimi açısından önemli farklılıklar görülür. Ayrıca her çocuğun gelişim hızı da farklıdır. Bu anket dil gelişimi açısından çok farklılık gösteren bu yaş dilimindeki çocuklar için düzenlenmiştir. O yüzden bahsedilen davranışlar ve sözcükler henüz sizin çocuğunuz tarafından kullanılmıyor olabilir. Dolayısıyla bunun bir sorun olduğunu düşünmenize gerek yoktur."

"Bir sorunuz var mı?" (soru varsa cevaplandırınız)

"Peki, o zaman başlayabiliriz."

BÖLÜM I: ERKEN SÖZCÜKLER

A.	**ANLAMANIN İLK İŞARETLERİ**		
	Çocuklar konuşmaya başlamadan önce bildikleri sözcüklere veya ifadelere cevap vererek dili anladıklarını gösterirler. Aşağıda bunlara ilişkin bazı örnekler verilmiştir. Sizin çocuğunuz bunlardan hangilerini yapıyor?	Evet	Hayır
	1. Adıyla çağırıldığında sese doğru dönerek ve bakarak tepki verir.	O	O
	2. "Hayır" dendiğinde kısa bir süre için yaptığını bırakarak tepki verir.	O	O
	3. "Anne/Baba burada" dendiğinde onları arayarak tepki gösterir.	O	O

B.	**İFADELER (***tümce, sözcük öbeği)*				
	Aşağıdaki listede çocuğunuzun anladığını düşündüğünüz ifadeleri lütfen belirtin.				
	Anlar		**Anlar**		**Anlar**
Acıktın mı?	O	Elleme/Dokunma.	O	Aç ağzını.	O
Uykun mu geldi?	O	Kalk.	O	Otur.	O
Dikkatli ol.	O	Bana ver.	O	Tükür/Çıkar onu.	O
Sessiz ol/Sus.	O	Kucağıma gel.	O	Dur.	O
Ellerini çırp/Alkış.	O	Öpücük ver.	O	Yatma zamanı.	O

Bezini değiştirelim.	O	Git ... getir.	O	Topu at.	O
Buraya gel.	O	Aferin.	O	Buraya bir kuş konmuş.	O
Evimize geldik.	O	Kıpırdama.	O	Gezmeye/Atta gidelim.	O
Daha ister misin?	O	Bay bay yap/El salla.	O		
Yapma.	O	Bak/Buraya bak.	O		

C. KONUŞMAYA BAŞLAMA			
	Hiç	**Bazen**	**Çoğu Zaman**
1. Bazı çocuklar "papağan" gibidir ve yeni duydukları şeyleri taklit ederler. Örneğin, siz "Anne/Baba şimdi işe gidiyor" dedikten sonra "işe gidiyor" diyerek cümlenin bir kısmını veya yeni öğrendikleri sözcükleri tekrar ederler. Sizin çocuğunuz sözcükleri ne sıklıkta taklit ediyor?	O	O	O
2. Bazı çocuklar etrafta dolaşarak bildiklerini göstermek ister gibi çevrelerindeki nesneleri isimlendirirler. Sizin çocuğunuz bunu ne sıklıkta yapar?	O	O	O

D. SÖZCÜK DAĞARCIĞI KONTROL LİSTESİ

Aşağıdaki liste küçük çocukların sözcük dağarcığında sıklıkla yer alan sözcükleri içermektedir. Biz, çocuğunuzun anladığı, ve de hem anlayıp hem söylediği sözcükleri merak ediyoruz. Çocuğunuzun anladığı ama henüz kullanmadığı sözcükleri anlar sütununda belirteceğiz. Çocuğunuzun anladığı ve kullandığı sözcükleri ise anlar ve söyler sütununda belirteceğiz. Çocuğunuzun bir sözcüğü burada yazıldığından farklı söylüyor olması bir şey değiştirmez (örneğin, *balık* yerine *bayık* veya *çay* yerine *tay* diyebilir), bu yine de onun sözcüğü bildiği anlamına gelir. Unutmayın ki aşağıdaki liste farklı yaş gruplarındaki birçok çocuğun kullandığı sözcüklerden oluşmaktadır. Bu nedenle eğer çocuğunuz şu an yalnızca bir kaçını biliyorsa bu bir sorun değildir.

1. ÇEŞİTLİ SESLER VE HAYVAN SESLERİ (10)					
	anlar	anlar ve söyler	anlar	anlar ve söyler	anlar	anlar ve söyler

Cee	O	O	Havhav	O	O	Pisi-pisi	O	O
Cıss	O	O	Hop/Hoppa	O	O	Uf	O	O
Düt	O	O	Mee	O	O			
Ham	O	O	Möö	O	O			

2. HAYVANLAR (17)								
	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Arı	O	O	İnek	O	O	Kuzu	O	O
At	O	O	Kedi	O	O	Maymun	O	O
Ayı	O	O	Kelebek	O	O	Ördek	O	O
Balık	O	O	Köpek	O	O	Tavşan	O	O
Böcek	O	O	Kurbağa	O	O	Tavuk	O	O
Eşek	O	O	Kuş	O	O			

3. TAŞITLAR (7)								
	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Araba	O	O	Kamyon	O	O	Uçak	O	O
Bisiklet	O	O	Otobüs	O	O			
Gemi/Vapur	O	O	Tren	O	O			

4. OYUNCAKLAR (8)								
	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Balon	O	O	Kalem	O	O	Oyuncak	O	O
Bebek	O	O	Kitap	O	O	Top	O	O
Boya	O	O	Kova	O	O			

5. YİYECEK VE İÇECEKLER (43)

	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Armut	O	O	Havuç	O	O	Portakal	O	O
Ayran	O	O	Karpuz	O	O	Reçel	O	O
Bal	O	O	Kek	O	O	Simit	O	O
Balık	O	O	Kola	O	O	Su	O	O
Bisküvi	O	O	Köfte	O	O	Süt	O	O
Börek	O	O	Kurabiye	O	O	Şeftali	O	O
Çay	O	O	Limon	O	O	Şeker	O	O
Çikolata	O	O	Makarna	O	O	Tarhana	O	O
Çorba	O	O	Meyve	O	O	Tost	O	O
Domates	O	O	Muhallebi	O	O	Yemek	O	O
Dondurma	O	O	Muz	O	O	Yoğurt	O	O
Ekmek	O	O	Pasta	O	O	Yumurta	O	O
Elma	O	O	Peynir	O	O	Zeytin	O	O
Et	O	O	Patates	O	O			
Fıstık	O	O	Pilav	O	O			

6. GİYSİLER (18)

	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Ayakkabı/Pabuç	O	O	Gömlek	O	O	Pantolon	O	O
Bez (çocuk bezi)	O	O	Gözlük	O	O	Pijama	O	O
Boncuk	O	O	Kazak	O	O	Şapka	O	O
Ceket	O	O	Kolye	O	O	Terlik	O	O
Çorap	O	O	Önlük	O	O	Tişört	O	O
Elbise	O	O	Palto	O	O	Yelek	O	O

7. VÜCUT BÖLÜMLERİ (17)

	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Ağız	O	O	Diş	O	O	Meme	O	O
Ayak	O	O	Diz	O	O	Parmak	O	O
Bacak	O	O	El	O	O	Popo	O	O
Baş/Kafa	O	O	Göbek	O	O	Saç	O	O
Burun	O	O	Göz	O	O	Yanak	O	O
Dil	O	O	Kulak	O	O			

8. KÜÇÜK EV EŞYALARI (27)

	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Anahtar	O	O	İp	O	O	Radyo	O	O
Ayna	O	O	Kağıt	O	O	Resim	O	O
Bardak	O	O	Kaşık	O	O	Saat	O	O
Battaniye	O	O	Kumanda	O	O	Sabun	O	O
Biberon	O	O	Kutu	O	O	Süpürge	O	O
Çanta	O	O	Kürek	O	O	Şişe	O	O
Çatal	O	O	Lamba/Işık	O	O	Tabak	O	O
Emzik	O	O	Pil	O	O	Tarak	O	O
İlaç	O	O	Pipet/Kamış	O	O	Telefon	O	O

9. MOBİLYALAR VE ODALAR (22)

	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Balkon	O	O	Kapı	O	O	Sandalye/İskemle	O	O
Banyo	O	O	Koltuk	O	O	Televizyon	O	O
Beşik	O	O	Lazımlık/Oturak	O	O	Tuvalet	O	O
Bilgisayar	O	O	Masa	O	O	Yatak	O	O
Buzdolabı	O	O	Merdiven	O	O	Yastık	O	O
Çekmece	O	O	Mutfak	O	O	Zil	O	O
Dolap	O	O	Oda	O	O			
Fırın	O	O	Pencere	O	O			

10. EVİN DIŞI (21)

	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Ay/Aydede	O	O	Güneş	O	O	Taş	O	O
Ağaç	O	O	Havuz	O	O	Toprak	O	O
Ateş	O	O	Kaydırak	O	O	Toz	O	O
Bahçe	O	O	Köprü	O	O	Yağmur	O	O
Çamur	O	O	Kum	O	O	Yaprak	O	O
Çiçek	O	O	Salıncak	O	O	Yıldız	O	O
Duvar	O	O	Sokak	O	O	Yol	O	O

11. GİDİLECEK YERLER (13)

	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Atta	O	O	Dükkan	O	O	Okul	O	O
Bakkal	O	O	Ev	O	O	Park	O	O
Çarşı	O	O	İş	O	O	Pazar	O	O
Dışarı	O	O	Köy	O	O			
Deniz	O	O	Market	O	O			

12. İNSANLAR (21)

	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Abi	O	O	Baba	O	O	Kardeş	O	O
Abla	O	O	Çocuk	O	O	Kendi ismi	O	O
Adam	O	O	Bebek	O	O	Kız	O	O
Amca	O	O	Dayı	O	O	Nine	O	O
Anne	O	O	Dede	O	O	Palyaço	O	O
Anneanne/Babaanne/ Büyükanne	O	O	Doktor	O	O	Polis	O	O
Arkadaş	O	O	Hala	O	O	Teyze	O	O

13. OYUNLAR VE RUTİNLER (31)

	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Aferin	O	O	Günaydın	O	O	Saklambaç	O	O
Alkış	O	O	Hoşçakal	O	O	Sürpriz	O	O
Alo	O	O	Hadi	O	O	Şarkı	O	O
Ayıp	O	O	Hayır	O	O	Takla	O	O
Banyo	O	O	İyi geceler	O	O	Tamam	O	O
Bay-bay	O	O	Kaka	O	O	Teşekkür/Sağol	O	O
Çiş	O	O	Kucak	O	O	Uyku	O	O
Dikkat	O	O	Mama	O	O	Var	O	O
Evet	O	O	Müzik	O	O	Yok	O	O
Gol	O	O	Ninni	O	O			
Güle-güle	O	O	Öcü	O	O			

14. EYLEM SÖZCÜKLERİ-I (63) Toplam 95

	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Acı (canı)	O	O	Çarp	O	O	Giy	O	O
Acık	O	O	Çek	O	O	Giydir	O	O
Aç	O	O	Çık	O	O	Gör	O	O
Açıl	O	O	Çıkar	O	O	Göster	O	O
Ağla	O	O	Çiz	O	O	Götür	O	O
Al	O	O	Dön	O	O	Gül	O	O
Anla	O	O	Döv	O	O	Isır	O	O
Ara	O	O	Dur	O	O	Islan	O	O
Atla	O	O	Dök	O	O	İç	O	O
At	O	O	Düş	O	O	İn	O	O
Bağır	O	O	Elle	O	O	İste	O	O
Bak	O	O	El salla	O	O	İt	O	O
Bas	O	O	Geç	O	O	Kaldır	O	O
Başla	O	O	Gel	O	O	Kalk	O	O
Bırak	O	O	Getir	O	O	Kapat	O	O
Bin	O	O	Gez	O	O	Kır	O	O
Bit	O	O	Gıdıkla	O	O	Kokla	O	O
Boya	O	O	Gir	O	O	Kork	O	O
Bul	O	O	Git	O	O	Koş	O	O

14. EYLEM SÖZCÜKLERİ-II (32)

	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Koy	O	O	Sev	O	O	Vur	O	O
Ol	O	O	Seyret	O	O	Yakala	O	O
Otur	O	O	Sil	O	O	Yap	O	O
Oyna	O	O	Sok	O	O	Yat	O	O
Öksür	O	O	Söyle	O	O	Yaz	O	O
Öl	O	O	Sus	O	O	Ye	O	O
Öp	O	O	Tak	O	O	Yedir	O	O
Ört	O	O	Tara	O	O	Yıka	O	O
Sakla	O	O	Taşı	O	O	Yıkan	O	O
Salla	O	O	Tut	O	O	Yırt	O	O
Sallan	O	O	Uç	O	O	Yut	O	O
Sarıl	O	O	Uyan	O	O	Yürü	O	O
Say	O	O	Ver	O	O			

15. TANIMLAMAYA YARDIMCI SÖZCÜKLER (25)

	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Acı (lezzet)	O	O	Islak	O	O	Sıcak	O	O
Açık	O	O	İyi	O	O	Soğuk	O	O
Boş	O	O	Kapalı	O	O	Pis	O	O
Büyük	O	O	Karanlık	O	O	Tatlı	O	O
Çok	O	O	Kırmızı	O	O	Temiz	O	O
Cici	O	O	Kirli	O	O	Yaramaz	O	O
Çirkin	O	O	Kocaman	O	O	Yeni	O	O
Güzel	O	O	Komik	O	O			
Hasta	O	O	Küçük	O	O			

16. ZAMANLA İLGİLİ SÖZCÜKLER (6)

	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Akşam	O	O	Gece	O	O	Sabah	O	O
Bugün	O	O	Hemen	O	O	Şimdi	O	O

17. ZAMİRLER (12)

	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Bana	O	O	Sen	O	O	Ona	O	O
Ben	O	O	Senin	O	O	Onun	O	O
Benim	O	O	Şu	O	O	Sana	O	O
Bu	O	O	O	O	O	Biri	O	O

18. SORU SÖZCÜKLERİ (7)

	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Kim	O	O	Neden	O	O	Niye	O	O
Nasıl	O	O	Nereye	O	O			
Ne	O	O	Nerede	O	O			

19. YER BİLDİREN SÖZCÜKLER (10)

	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Altında	O	O	İçeride	O	O	Şurada	O	O
Arkasında	O	O	İçinde	O	O	Üstünde/Üzerinde	O	O
Burada	O	O	Orada	O	O			
Dışarıda	O	O	Önünde	O	O			

20. BELİRLEYİCİ SÖZCÜKLER (8)

	anlar	anlar ve söyler		anlar	anlar ve söyler		anlar	anlar ve söyler
Biraz	O	O	Hepsi	O	O	Öbürü	O	O
Çok	O	O	Hiç	O	O	Yine/Gene	O	O
Daha/Bir daha	O	O	İşte	O	O			

BÖLÜM II. EYLEMLER VE JESTLER

A. İLK İLETİŞİM JESTLERİ

Bebekler ilk iletişim kurmaya başladıklarında, isteklerinin anlaşılması için işaret kullanırlar. Çocuğunuzun bu günlerde yaptığı işaretleri tanımlayan maddenin yanındaki seçenekleri işaretleyin.
(ANKETÖR OKUYACAKSA: "Çocuğunuzun bu günlerde yaptığı işaretleri okuyacağım listeden hangileri tanımlıyor belirtmenizi istiyorum")

Çocuğunuz:	Henüz değil	Bazen	Çoğu zaman
1. Elindeki bir şeyi size göstermek için elini size uzatır.	O	O	O
2. Elinde tuttuğu bir nesneyi ya da oyuncağı uzatarak size verir.	O	O	O
3. İlgisini çeken bir olaya veya ulaşamadığı bir nesneye parmağını ya da kolunu uzatarak işaret eder.	O	O	O
4. Birisi ayrılırken (kendiliğinden) el sallayarak güle güle işareti yapar.	O	O	O
5. Kucağa alınmak istediğini belirten bir şekilde kollarını size doğru uzatır.	O	O	O
6. "Hayır" anlamında başını iki yana sallar ya da kafasını yukarı kaldırır.	O	O	O
7. "Evet" anlamında başını öne eğer.	O	O	O
8. "Şıışşt/Suss.." anlamında parmaklarını dudağına değdirir.	O	O	O
9. Elini açıp kapayarak veya kolunu uzatarak bir şey ister.	O	O	O
10. Uzaktan öpücük yollar.	O	O	O
11. Yediği bir şeyin tadının iyi olduğunu belirtmek için dudaklarıyla "hımmm… yapar.	O	O	O
12. "Bitti/Gitti" anlamında uygun işaret kullanır (örn. boş avuçlarını gösterir, omuzlarını silker, vs..).	O	O	O
13. Kavanoz/Kutu kapağının açılması için ya da yapamadığı bir şey için (işaret ederek) yardım ister.	O	O	O
14. Tuvalet ihtiyacının giderilmesi için (işaret ederek/bezini çekiştirerek) yardım ister.	O	O	O
15. Sizin işaret ettiğiniz bir oyuncağa veya nesneye parmağınızı/kolunuzu izleyip bakar.	O	O	O

16. Kendine dikkat çekmek için annenin eteğini çeker/ses çıkarır.	O	O	O

B. OYUNLAR VE RUTİNLER		
Çocuğunuz aşağıdakileri yapabiliyor mu?		
	EVET	**HAYIR**
1. Cee/Cöö oyununa katılır.	O	O
2. Gıdı gıdı/Geldi geldi kara kedi/Badi kara geliyor oyununa katılır.	O	O
3. Tel sarar/Sar makarayı-çöz makarayı oyununa katılır.	O	O
4. Fış fiş kayıkçı oyununa katılır.	O	O
5. Kovalamaca oynar.	O	O
6. Şarkı söyler.	O	O
7. Dans eder.	O	O
8. Annenin söylediği diğer oyunlara katılır.	O	O
Belirtiniz_____		

C. NESNELERLE EYLEM GERÇEKLEŞTİRME		
Çocuğunuz gerçek nesneler veya oyuncaklarla aşağıdaki davranışları gerçekleştirir mi veya yapmaya çalışır mı?		
	EVET	**HAYIR**
1. Kaşık veya çatalla yemek yer.	O	O
2. İçinde sıvı bulunan bir bardaktan içer.	O	O
3. Kendi saçını tarar veya fırçalar.	O	O
4. Dişlerini fırçalar.	O	O
5. Havluyla veya bir bezle elini, yüzünü siler.	O	O
6. Şapka giyer.	O	O
7. Çorap veya ayakkabı giyer.	O	O
8. Kolye, bilezik veya saat takar.	O	O
9. Kolunun üstüne başını koyup/gözünü kapatıp uyurmuş gibi yapar.	O	O
10. Yediği bir şey sıcaksa üfler/üf yapar.	O	O
11. Oyuncak uçağı tutup uçurur.	O	O
12. Telefonu kulağına tutar.	O	O
13. Çiçek koklar.	O	O
14. Araba veya kamyon iter.	O	O

15. Karşıya top atar.	O	O
16. Bir kaseden/şişeden bir diğerine su döker gibi yapar.	O	O
17. Bardağın içinde su varmış gibi kaşıkla karıştırır.	O	O

D. ANNE-BABA GİBİ DAVRANMA

Aşağıda çocuklarınızın bebekleriyle veya oyuncak hayvanlarla yapabildiği eylemler var. Çocuğunuzun yaptığını gördüklerinizi işaretleyin/söyleyin.

	EVET	HAYIR
1. Yatağa yatırır.	O	O
2. Üstünü örter.	O	O
3. Biberonla besler.	O	O
4. Kaşıkla yedirir.	O	O
5. Saçını tarar.	O	O
6. Sırtını sıvazlar veya gazını çıkartır.	O	O
7. Bebeği arabasıyla dolaştırır.	O	O
8. Bebeği sallar.	O	O
9. Öper veya kucaklar.	O	O
10. Başına şapka, ayağına çorap veya ayakkabı giydirir.	O	O
11. Yüzünü, ellerini siler.	O	O
12. Onunla konuşur.	O	O
13. Bezini bağlar.	O	O

E. YETİŞKİN DAVRANIŞLARINI TAKLİT ETME

Çocuğunuz gerçek nesne veya oyuncaklarıyla aşağıdaki hareketleri yapıyor mu veya yapmaya çalışıyor mu?

	EVET	HAYIR
1. Süpürgeyle/Elektrik süpürgesi ile süpürür.	O	O
2. Anahtarla kilitler.	O	O
3. Çekiçle çakar.	O	O
4. Testere ile keser.	O	O
5. Bilgisayar klavyesinde yazar.	O	O
6. “Okur” (kitabı veya sayfalarını açarak).	O	O
7. Çiçekleri sular.	O	O

8. Müzik enstrümanı (aleti) çalar (piyano, gitar veya flüt gibi).	O	O
9. Direksiyonu döndürerek araba kullanır/sürer.	O	O
10. Toz alır.	O	O
11. Kalem veya tebeşirle yazar.	O	O
12. Kürekle kazar.	O	O
13. Gözlük takar.	O	O
14. Ruj sürer/Makyaj yapar.	O	O

F. YERİNE KULLANMA		
Oyun sırasında, çocuklar bazen bir nesnenin yerine bir diğerini kullanırlar. Örneğin, muzu telefon gibi ya da kutuyu kamyon gibi kullanabilir. Sizin çocuğunuz da bu şekilde nesneleri birbirinin yerine kullanıyor mu?		
	EVET	**HAYIR**
	O	O

Appendix B

TIGE-II

"16-36 ay arasında bebekler pek çok sözcük anladıkları gibi pek çok sözcüğü de kullanmaya başlarlar. Daha sonra da sözcükleri yan yana getirip, ekler takıp cümle kurar ve iletişime geçerler. 15 ayı kapsayan bu yaş diliminin başındaki ve sonundaki çocuklar arasında dil gelişimi açısından önemli farklılıklar görülür. Ayrıca her çocuğun gelişim hızı da farklıdır. Bu anket dil gelişimi açısından çok farklılık gösteren bu yaş dilimindeki çocuklar için düzenlenmiştir. O yüzden soracağım sözcükler ve cümle yapıları henüz sizin çocuğunuz tarafından kullanılmıyor olabilir. Dolayısıyla bunun bir sorun olduğunu düşünmenize gerek yoktur."

"Bir sorunuz var mı?" (soru varsa cevaplandırınız)

"Peki, o zaman başlayabiliriz."

BÖLÜM I: ÇOCUKLARIN KULLANDIĞI SÖZCÜKLER

Aşağıdaki liste küçük çocukların sözcük dağarcığında sıklıkla yer alan sözcükleri içermektedir. Ben size çocuğunuzun bu listedeki sözcüklerden hangilerini kullandığını soracağım. Çocuğunuz bir sözcüğü burada yazıldığından farklı söylüyorsa (örneğin, *balık* yerine *bayık* veya *çay* yerine *tay*), bu yine de onun sözcüğü bildiği anlamına gelmektedir. Unutmayın ki aşağıdaki liste farklı yaş gruplarındaki birçok çocuğun kullandığı sözcüklerden oluşmaktadır. Bu nedenle eğer çocuğunuz şu an yalnızca bir kaçını biliyorsa bu bir sorun değildir.

1. ÇEŞİTLİ SESLER VE HAYVAN SESLERİ (13)					
	söyler		söyler		söyler
Cee	O	Havhav	O	Uf	O
Cıss	O	Hop/Hoppa	O	Vak vak	O
Çufçuf	O	Mee	O	Vınn	O
Düt	O	Pisi-pisi	O		
Ham	O	Şişt	O		

2. HAYVANLAR (41)					
	söyler		söyler		söyler
Arı	O	Horoz	O	Maymun	O
Aslan	O	İnek	O	Ördek	O
At	O	Kaplan	O	Örümcek	O
Ayı	O	Karga	O	Papağan	O

Balık	O	Karınca	O	Sincap	O
Baykuş	O	Kartal	O	Sinek	O
Böcek	O	Keçi	O	Tavşan	O
Deve	O	Kedi	O	Tavuk	O
Domuz	O	Koyun	O	Timsah	O
Eşek	O	Köpek	O	Yavru	O
Fare	O	Kurbağa	O	Zebra	O
Fil	O	Kuş	O	Zürafa	O
Geyik	O	Kurt	O	Kuzu	O
Hayvan	O	Leylek	O		

3. TAŞITLAR (14)					
	söyler		söyler		söyler
Ambulans	O	İtfaiye	O	Traktör	O
Araba	O	Kamyon	O	Tren	O
Bisiklet	O	Kayık	O	Uçak	O
Gemi/Vapur	O	Motosiklet	O	Yelkenli	O
Helikopter	O	Otobüs	O		

4. OYUNCAKLAR (20)					
	söyler		söyler		söyler
Balon	O	Kalem	O	Oyuncak	O
Bebek	O	Kitap	O	Pazıl/Yap-boz	O
Blok	O	Kova	O	Robot	O
Boya	O	Kukla	O	Top	O
Davul	O	Kürek	O	Tüfek	O
Defter	O	Lego	O	Uçurtma	O
Düdük	O	Masal	O		
5. YİYECEK VE İÇECEKLER (66)					
	söyler		söyler		söyler
Armut	O	Karpuz	O	Pizza	O
Ayran	O	Kayısı	O	Poğaça	O
Bal	O	Kek	O	Portakal	O
Balık	O	Ketçap	O	Reçel	O
Bisküvi	O	Kiraz	O	Sakız/Çiklet	O
Börek	O	Kola	O	Salam	O
Cips	O	Köfte	O	Salatalık	O
Çay	O	Kurabiye	O	Simit	O
Çikolata	O	Limon	O	Soğan	O

Çilek	O	Lokum	O	Sosis	O
Çorba	O	Makarna	O	Su	O
Dolma	O	Mandalina	O	Sucuk	O
Domates	O	Meyve	O	Süt	O
Dondurma	O	Mısır	O	Şeker	O
Ekmek	O	Muhallebi	O	Tarhana	O
Elma	O	Muz	O	Tost	O
Et	O	Nar	O	Tuz	O
Fasulye	O	Nohut	O	Üzüm	O
Fıstık	O	Pasta	O	Yemek	O
Gazoz	O	Patates	O	Yoğurt	O
Ispanak	O	Peynir	O	Yumurta	O
Kahve	O	Pilav	O	Zeytin	O

6. GİYSİLER (32)					
	söyler		söyler		söyler
Ayakkabı/Pabuç	O	Eldiven	O	Palto	O
Bez (çocuk bezi)	O	Eşofman	O	Pantolon	O
Bilezik	O	Etek	O	Pijama	O
Bluz	O	Fanila/Atlet	O	Şapka	O
Bot	O	Gecelik	O	Şort	O
Ceket	O	Gözlük	O	Taç	O
Cep	O	Kazak	O	Tayt	O
Çizme	O	Kemer	O	Terlik	O
Çorap	O	Küpe	O	Tişört	O
Don/Külot	O	Mont	O	Toka	O
Elbise	O	Önlük	O		
7. VÜCUT BÖLÜMLERİ (27)					
	söyler		söyler		söyler
Ağız	O	Dil	O	Kol	O
Ayak	O	Diş	O	Kulak	O
Bacak	O	Diz	O	Parmak	O
Baş/Kafa	O	El	O	Popo	O
Bıyık	O	Göbek	O	Saç	O
Boğaz	O	Göz	O	Tırnak	O
Boyun	O	Kalp	O	Vücut	O
Burun	O	Karın	O	Yanak	O
Çene	O	Kirpik	O	Yüz/Surat	O

8. KÜÇÜK EV EŞYALARI (33)					
	söyler		söyler		söyler
Anahtar	O	Çöp	O	Perde	O
Ayna	O	Emzik	O	Radyo	O
Bant (plaster)	O	Havlu	O	Resim	O
Bardak	O	İlaç	O	Saat	O
Battaniye	O	Kağıt	O	Sabun	O
Bıçak	O	Kaşık	O	Süpürge	O
Biberon	O	Kumanda	O	Şemsiye	O
Çanta	O	Lamba/Işık	O	Tabak	O
Çatal	O	Mendil	O	Tarak	O
Çaydanlık	O	Pamuk	O	Telefon	O
Çekiç	O	Peçete	O	Ütü	O

9. MOBİLYALAR VE ODALAR (27)					
	söyler		söyler		söyler
Balkon	O	Kapı	O	Salon	O
Banyo	O	Koltuk	O	Sandalye/İskemle	O
Bilgisayar	O	Lazımlık/Oturak	O	Sehpa	O
Buzdolabı	O	Masa	O	Televizyon/TV	O
Dolap	O	Merdiven	O	Tuvalet	O
Duş	O	Mutfak	O	Yatak	O
Fırın	O	Ocak	O	Yastık	O
Kalorifer	O	Pencere	O	Zil	O
Halı	O	Oda	O	Yorgan	O

10. EVİN DIŞI (37)					
	söyler		söyler		söyler
Ay/Aydede	O	Dünya	O	Salıncak	O
Ağaç	O	Fotoğraf	O	Sokak	O
Ateş	O	Garaj	O	Taş	O
Bahçe	O	Göl	O	Tekerlek	O
Bulut	O	Güneş	O	Toprak	O
Bayrak	O	Kar	O	Toz	O
Çamur	O	Kaydırak	O	Trafik	O
Çiçek	O	Kaza	O	Yağmur	O
Çimen	O	Kozalak	O	Yangın	O
Dağ	O	Köprü	O	Yaprak	O

Dal	O	Kum	O	Yol	O
Duman	O	Odun	O		
Duvar	O	Ot	O		

11. GİDİLECEK YERLER (25)					
	söyler		söyler		söyler
Atta	O	Hastane	O	Park	O
Bakkal	O	İş	O	Pazar	O
Cami	O	Komşu	O	Piknik	O
Çarşı	O	Köy	O	Plaj	O
Dışarı	O	Kreş/Yuva	O	Sinema	O
Deniz	O	Maç	O	Sirk	O
Düğün	O	Market	O	Tiyatro	O
Dükkan	O	Okul	O		
Ev	O	Orman	O		

12. İNSANLAR (32)					
	söyler		söyler		söyler
Abi	O	Çocuk	O	Oğlan	O
Abla	O	Dede	O	Öğretmen	O
Adam	O	Doktor	O	Palyaço	O
Amca	O	Erkek	O	Polis	O
Anne	O	Gelin	O	Prenses	O
Anneanne	O	Hala	O	Tamirci	O
Arkadaş	O	Kadın	O	Teyze	O
Asker	O	Kardeş	O	Yenge	O
Baba	O	Kendi ismi	O		
Babaanne	O	Kız	O		
Bebek	O	Kral	O		
Berber/Kuaför	O	Nine	O		

13. OYUNLAR VE RUTİNLER (40)					
	söyler		söyler		söyler
Aferin	O	Hadi	O	Şaka	O
Alkış	O	Hayır	O	Şarkı	O
Alo	O	Hoşgeldiniz	O	Tabii	O
Ayıp	O	İyi geceler	O	Takla	O
Banyo	O	Kahvaltı	O	Tamam	O
Bay-bay	O	Kaka	O	Teşekkür/Mersi/Sağol	O

Çiş	O	Kucak	O	Uyku	O
Dikkat	O	Lütfen	O	Var	O
Doğumgünü	O	Mama	O	Yarış	O
Efendim	O	Merhaba	O	Yazık	O
Evcilik	O	Müzik	O	Yeter	O
Evet	O	Ninni	O	Yok	O
Güle-güle	O	Saklambaç	O		
Günaydın	O	Sürpriz	O		

14. EYLEM SÖZCÜKLERİ-I (90) Toplam (146)					
	söyler		söyler		söyler
Acı (canı)	O	Çek	O	Hastalan	O
Acık	O	Çevir	O	Hatırla	O
Aç	O	Çıkar	O	Isır	O
Açıl	O	Çiz	O	Islan	O
Ağla	O	Dağıt	O	İç	O
Al	O	Dinle	O	İn	O
Anla	O	Dokun	O	İste	O
Anlat	O	Doy	O	İt	O
Ara	O	Dön	O	Kaç	O
Atla	O	Döv	O	Kal	O
At	O	Dur	O	Kaldır	O
Bağır	O	Duy	O	Kalk	O
Bağla	O	Dök	O	Kana	O
Bak	O	Düş	O	Kapan	O
Bas	O	Düzelt	O	Kapat	O
Başla	O	Elle	O	Karıştır	O
Beğen	O	El salla	O	Kay	O
Bekle	O	Ez	O	Kes	O
Benze	O	Gel	O	Kır	O
Bırak	O	Getir	O	Kırıl	O
Bil	O	Gez	O	Kirlet	O
Bin	O	Gıdıkla	O	Kokla	O
Bit	O	Gir	O	Kon	O
Bitir	O	Git	O	Konuş	O
Boya	O	Giy	O	Kop	O
Boz	O	Giydir	O	Kopar	O
Bul	O	Gör	O	Kork	O
Büyü	O	Göster	O	Koş	O
Çağır	O	Götür	O	Koy	O
Çalış	O	Gül	O	Kurtar	O

14. EYLEM SÖZCÜKLERİ-II (56)					
	söyler		söyler		söyler
Küs	O	Sık	O	Ver	O
Oku	O	Sıkış	O	Vur	O

Ol	O	Sil	O	Yak	O
Otur	O	Sok	O	Yan	O
Oyna	O	Sor	O	Yap	O
Öğret	O	Söyle	O	Yapış	O
Öl	O	Sus	O	Yat	O
Öp	O	Susa	O	Yaz	O
Ört	O	Süpür	O	Ye	O
Özle	O	Şişir	O	Yedir	O
Patla	O	Tak	O	Yık	O
Pişir	O	Tara	O	Yıkıl	O
Sakla	O	Taşı	O	Yıka	O
Salla	O	Topla	O	Yıkan	O
Sallan	O	Tut	O	Yırt	O
Sarıl	O	Uç	O	Yorul	O
Say	O	Unut	O	Yut	O
Sev	O	Uyan	O	Yürü	O
Seyret	O	Üzül	O		

15. TANIMLAMAYA YARDIMCI SÖZCÜKLER (61)					
	söyler		söyler		söyler
Acı	O	İğrenç	O	Sessiz	O
Açık	O	İki	O	Sıcak	O
Ağır	O	İyi	O	Siyah	O
Az	O	Kahverengi	O	Soğuk	O
Beyaz	O	Kapalı	O	Şirin	O
Boş	O	Karanlık	O	Tatlı	O
Büyük	O	Katı	O	Temiz	O
Cadı	O	Kırık	O	Ters	O
Canavar	O	Kırmızı	O	Turuncu	O
Cici	O	Kısa	O	Uzun	O
Cüce	O	Kirli	O	Yapışkan	O
Çirkin	O	Kocaman	O	Yavaş	O
Delik	O	Komik	O	Yeşil	O
Dolu	O	Koyu	O	Yumuşak	O
Ekşi	O	Kötü	O	Yüksek	O
Eski	O	Kuru	O	Zor	O
Güzel	O	Küçük	O	Yaramaz	O
Hasta	O	Mor	O	Yaş	O
Hazır	O	Pis	O	Yeni	O
Hızlı	O	Sarı	O		
Islak	O	Sert	O		
16. ZAMANLA İLGİLİ SÖZCÜKLER (13)					

	söyler		söyler		söyler
Akşam	O	Hemen	O	Sonra	O
Bazen	O	Ondan sonra	O	Şimdi	O
Bugün	O	Öğlen	O	Yarın	O
Dün	O	Önce	O		
Gece	O	Sabah	O		

17. ZAMİRLER (21)					
	söyler		söyler		söyler
Bana	O	Siz	O	Onun	O
Ben	O	Sizin	O	Kimse	O
Benim	O	Şu	O	Sana	O
Bu	O	Kendi	O	Biri	O
Biz	O	Kendim	O	Şey	O
Bizim	O	O	O		
Sen	O	Ona	O		
Senin	O	Onlar	O		

18. SORU SÖZCÜKLERİ (12)					
	söyler		söyler		söyler
Hangi	O	Ne	O	Nereye	O
Kaç tane	O	Ne zaman	O	Nerede	O
Kim	O	Neden	O	Nereden	O
Nasıl	O	Ne kadar	O	Niye	O

19. YER BİLDİREN SÖZCÜKLER (21)					
	söyler		söyler		söyler
Altında	O	Geride	O	Önünde	O
Arasında	O	İçeride	O	Şurada	O
Arkasında	O	İçinde	O	Uzak	O
Aşağıda	O	İleride	O	Üstünde/Üzerinde	O
Burada	O	Karşıda	O	Yakın	O
Dışarıda	O	Orada	O	Yanında	O
Dışında	O	Ortada	O	Yukarıda	O

20. BELİRLEYİCİ SÖZCÜKLER (23)					
	söyler		söyler		söyler
Aynı	O	En	O	İşte	O
Başka	O	Galiba	O	Öbürü	O
Belki	O	Gibi	O	Öteki	O
Bile	O	Her	O	Tam	O
Biraz	O	Hep	O	Tek	O
Böyle	O	Hepsi	O	Yine/Gene	O
Çok	O	Hiç	O	Zaten	O
Daha	O	Hiçbiri	O		

21. BAĞLAÇLAR (7)					
	söyler		söyler		söyler
Ama	O	Diye	O	Ve	O
Çünkü	O	O zaman	O		
De/da	O	Sonra	O		

B. ÇOCUĞUNUZ SÖZCÜKLERİ NASIL KULLANIYOR?

1. Çocuğunuz geçmiş olaylar hakkında konuşuyor mu? Örneğin, geçen hafta parka gitmiş olan bir çocuk daha sonra "salıncak", "kaydım", "kum" gibi sözcükler söyleyebilir. Çocuğunuz bunu yapıyor mu?

   Henüz değil O Bazen O Çoğu zaman O

2. Çocuğunuz hiç yakın gelecekte yapılacak bir şey hakkında konuşuyor mu? Örneğin, bir yolculuğa çıkmak üzere evden ayrılırken "araba", "çuf çuf", demek, ya da parka giderken "sallan" demek gibi?

   Henüz değil O Bazen O Çoğu zaman O

3. Çocuğunuz hiç o anda orada bulunmayan bir şey, örneğin kaybolmuş bir oyuncak, evde olmayan bir kişi hakkında konuşuyor mu?

   Henüz değil O Bazen O Çoğu zaman O

4. Çocuğunuz, siz o anda odada bulunmayan bir şeyi sorduğunuzda anlıyor mu? Örneğin, "ayın nerede", "terliklerin nerede" dediğinizde bunu almaya odasına gidiyor mu?

   Henüz değil O Bazen O Çoğu zaman O

5. Çocuğunuz bir eşyayı eline alıp veya gösterip o eşyanın o anda orada bulunmayan sahibinin ismini söylüyor mu? Örneğin, anne odada yokken annenin terliğine işaret edip "anne" demek gibi?

   Henüz değil O Bazen O Çoğu zaman O

BÖLÜM II. CÜMLELER ve DİL BİLGİSİ

A. SÖZCÜK EKLERİ

1. Şu anda olmakta olan bir olay hakkında konuşurken "bakıyor, koşuyor, ağlıyor" örneklerinde olduğu gibi fiillerin sonuna "-iyor" takısı ekleriz. Çocuğunuz bunu yapmaya başladı mı?

   Henüz değil O Bazen O Çoğu zaman O

2. Henüz tamamlanmış veya geçmişte olmuş olaylar hakkında konuşurken "öptü, açtı, itti" örneklerinde olduğu gibi fiillerin sonuna "-di" takısı ekleriz. Çocuğunuz bunu yapmaya başladı mı?

   Henüz değil O Bazen O Çoğu zaman O

3. Geçmişte tamamlanmış ancak olurken görmediğimiz olaylar hakkında konuşurken "açmış, kırılmış, bozulmuş" örneklerinde olduğu gibi fiillerin sonuna "-miş" takısı ekleriz. Çocuğunuz bunu yapmaya başladı mı?

   Henüz değil O Bazen O Çoğu zaman O

4. Genelde hep olan veya yapılması uygun görülen durumlar hakkında konuştuğumuzda "sever, içer, uyur" örneklerinde olduğu gibi fiillerin sonuna "-er" takısı ekleriz. Çocuğunuz bunu yapmaya başladı mı?

   Henüz değil O Bazen O Çoğu zaman O

5. Gelecekte yapmayı planladığımız durumlar hakkında konuşurken "gideceğiz, alacağız, oynayacağız örneklerinde olduğu gibi fiillerin sonuna "-ecek" takısı ekleriz. Çocuğunuz bunu yapmaya başladı mı?

   Henüz değil O Bazen O Çoğu zaman O

6. Çocuğunuz, "baba geldi mi, ayı orda mı" örneklerinde olduğu gibi soru sorarken "-mi" soru ekini kullanmaya başladı mı?

   Henüz değil O Bazen O Çoğu zaman

7. Çocuğunuz, "süt istemem, et yemem" örneklerinde olduğu gibi olumsuzluk ifade etmek için "-me" ekini kullanmaya başladı mı?

   Henüz değil O Bazen O Çoğu zaman O

8. Sahip olduğumuz bir şey hakkında konuştuğumuzda kimin olduğunu belirtmek için "anahtarım", "topum" ve "bebeğim" örneklerinde olduğu gibi sözcüklere "-im" takısını ekleriz. Çocuğunuz bunu yapmaya başladı mı?

   Henüz değil O Bazen O Çoğu zaman O

9. Çocuğunuz bir şeyi birisine vermekten bahsederken (örneğin, yediği elmasından "babaya", "anneye" vermek istediğini belirtmek için) "-e", "-a" takısını kullanmaya başladı mı?

   Henüz değil O Bazen O Çoğu zaman O

10. Çocuğunuz bir şeyin nerede olduğunu söylerken (örneğin, oyuncak ayısının "yatakta" ya da kalemin "masada" olduğunu belirtmek için) "-da" ekini kullanmaya başladı mı?

    Henüz değil O Bazen O Çoğu zaman O

11. Çocuğunuz bir şeyi ona vermenizi istediği zaman (örneğin birlikte oynadığınız bir nesneyi "bebeği" "kalemi" istemek için) "-i" takısını kullanmaya başladı mı?

    Henüz değil O Bazen O Çoğu zaman O

B. ÇOCUĞUNUZ ŞU ANA KADAR BİRDEN FAZLA SÖZCÜĞÜ AYNI CÜMLE İÇİNDE KULLANMAYA BAŞLADI MI? ÖRNEĞİN; "anne otur", "baba gel", "top at", "su ver" gibi:

Henüz değil O Bazen O Çoğu zaman O

C. ÇOCUĞUNUZ ŞU ANA KADAR SÖZCÜKLERE EK TAKMAYA BAŞLADI MI?

ÖRNEĞİN; "bu-nu/bu-na", "düş-tü/düş-üyor" gibi:

Henüz değil O Bazen O Çoğu zaman O

D. ÖRNEKLER: Çocuğunuzdan bu güne kadar duyduğunuz en uzun üç cümleyi aşağıya yazınız.

1. _____

2. _____

3. _____

Eğer yukarıdaki B ve C sorularının hepsine annenin cevabı "henüz değil" ise, lütfen burada soruları sormayı/ cevaplamayı bırakın. Eğer annenin kimi cevabı "bazen" ya da "çoğu zaman" ise, lütfen soruları cevaplamaya devam edin.

E. İSİMLERE GELEN DURUM EKLERİ

Şimdi size çocukların öğrendikleri isim eklerini bazı sözcüklerle örnekleyerek okuyacağım. Sizden çocuğunuzun kullandığı ekleri belirtmenizi istiyorum. Çocuğunuz bu ekleri örnekte görülen sözcüklerle değil başka sözcüklerle kullanıyor olabilir, siz yanıtınızı eki düşünerek veriniz. Öğrenmek istediğimiz, "baba-dan, masa-dan, ev-den, araba-dan" örneklerinde olduğu gibi "–dan" ekini kullanıyor mu? **(ANKETÖR: diğer ekler için de aynı şekilde örnekleyerek okuyunuz; ek örneklemelerde kullanılabilecek isimler: kaşık, top, anne)**

Baba	Masa	Ev	Araba	
baba-dan	masa-dan	ev-den	araba-dan	O
baba-yla	masa-yla	ev-le	araba-yla	O
baba-nın	masa-nın	ev-in	araba-nın	O
baba-lar	masa-lar	ev-ler	araba-lar	O

F. FİİL EKLERİ

Şimdi size çocukların öğrendikleri fiil eklerini bazı sözcüklerle örnekleyerek okuyacağım. Bunlardan çocuğunuzun kullandığını duyduğunuz ekleri bana söylemenizi istiyorum. Çocuğunuz bu ekleri örnekte verilen sözcüklerle değil başka sözcüklerle kullanıyor olabilir, siz yanıtınızı eki düşünerek veriniz. Öğrenmek istediğimiz, "gel-sene, aç-sana, ver-sene" örneklerinde olduğu gibi "–sana" ekini kullanıyor mu? **(ANKETÖR: diğer ekler için de aynı şekilde örnekleyerek okuyunuz; ek örneklemelerde kullanılabilecek fiiller: öp, koş, ye)**

Gel	Aç	Ver	
gel-sene	aç-sana	ver-sene	O
gel-elim	aç-alım	ver-elim	O
gel-sin	aç-sın	ver-sin	O
gel-miş-ti	aç-mış-tı	ver-miş-ti	O
gel-iyor-muş	aç-ıyor-muş	ver-iyor-muş	O
gel-se	aç-sa	ver-se	O

Şimdi size aynı fiillerle başka örnekler okuyacağım. Çocuğunuzun bu ekleri de kullanıp kullanmadığını değerlendirmenizi istiyorum. Çocuğunuz bu ekleri örnekte görülen sözcüklerle değil başka sözcüklerle kullanıyor olabilir, siz yanıtınızı eki düşünerek veriniz. Öğrenmek istediğimiz, "gel-ebil-ir, aç-abil-ir, ver-ebil-ir" örneklerinde olduğu gibi "–ebil" ekini kullanıyor mu? **(ANKETÖR: diğer ekler için de aynı şekilde örnekleyerek okuyunuz; ek örneklemelerde kullanılabilecek fiiller: öp, koş, ye)**

Gel	Aç	Ver	
gel-ebil-ir	aç-abil-ir	ver-ebil-ir	O
gel-meli	aç-malı	ver-meli	O
gel-me-di	aç-ma-dı	ver-me-di	O
gel-e-me-di	aç-a-ma-dı	ver-e-me-di	O

Şimdi de şu sözcükleri değerlendirmenizi istiyorum. Çocuğunuz bu örneklere benzer sözcükler kullanıyor mu? Siz yanıtınızı eki düşünerek veriniz. Öğrenmek istediğimiz, "iç-il-ir, aç-ıl-ır, ver-il-ir" örneklerinde olduğu gibi

"–ıl" ekini kullanıyor mu? **(ANKETÖR: diğer ekler için de aynı şekilde örnekleyerek okuyunuz; ek örneklemelerde kullanılabilecek fiiller: öp, koş, ye)**

İç	Aç	Yap	
iç-il-ir	aç-ıl-ır	yap-ıl-ır	O
iç-il-mez	aç-ıl-maz	yap-ıl-maz	O
iç-ir	aç-tır	yap-tır	O

G- KARMAŞIK CÜMLE YAPILARI

Aşağıda çeşitli durumlar örneklenmiş ve bu durumlarda çocuğunuzun kullanıyor olabileceği cümleler verilmiştir. Lütfen her bir durum için çocuğunuzun şu andaki konuşma biçimine en yakın olan örneği belirtiniz.

(ANKETÖRE: Anne farklı bir cümle yapısı verirse lütfen yazınız)

1. Annesini ararken aşağıdakilerden hangisini söyler?

Anne	O
Anne nerde?	O
Hiçbirini demiyor	O

2. Bir yere gitmek istediği zaman aşağıdakilerden hangisini söyler?

Eve gidelim/Parka gidelim/Attaya gidelim	O
Eve gitmek istiyorum/Parka gitmek istiyorum/Attaya gitmek istiyorum	O
Hiçbirini demiyor	O

3. İki şeyi bir arada istediğinde (örneğin hem süt hem bisküvi istediğinde) aşağıdakilerden hangisini söyler?

Bisküvi istiyorum, süt istiyorum/Bebek istiyorum, top istiyorum	O
Bisküvi ve süt istiyorum/Bebek ve top istiyorum.	O
Hiçbirini demiyor	O

4. Bir şeyin sebep ve sonucunu (örneğin düştüğü için ağladığını) belirtmek için aşağıdakilerden hangisini söyler?

Düştüm, ağladım/Bastım, çaldı	O
Düşünce ağladım/Basınca çaldı	O
Hiçbirini demiyor	O

5. Bir şeyi ne amaçla yaptığını anlatmak için aşağıdakilerden hangisini söyler?

Aldık, sevinsin/Öptüm, ağlamasın	O
Sevinsin diye aldık/Ağlamasın diye öptüm	O
Hiçbirini demiyor	O

6. Ne yapacağını anlatırken:

Yemek yiycem, uyuycam/Oynuycam, yatıcam	O
Yemekten sonra uyuycam/Oynadıktan sonra yatıcam	O
Hiçbirini demiyor	O

7. Olaylar arasındaki ilişkiyi anlatırken aşağıdakilerden hangisini söyler?

Koştum, düştüm/Oynadım, kırdım	O
Koşarken düştüm/Oynarken kırdım	O
Hiçbirini demiyor	O

8. Olaylar arasındaki ilişkiyi anlatırken aşağıdakilerden hangisini söyler?

Topumu alıyım, geliyim/Açayım bakıyım	O
Topumu alıp geliyim/Açıp bakıyım	O
Hiçbirini demiyor	O

9. Kendi yapmadığı bir olayı anlatırken aşağıdakilerden hangisini söyler?

Kırdı/Açtı	O
Kırıldı/Açıldı	O
Hiçbirini demiyor	O

Appendix C

A comparison between TIGE-*I* and the *MB-CDI-Words and Gesture*:

PART	**SUBPART**	**N of ITEMS** **TIGE I**	**N of ITEMS** **CDI I**	**Example**	**Answer Category**
1.Early Words	**A.First signs of understanding**	3	3	*React when name is called*	"Yes" and "No"
	B.Phrases	28	28	*Are you hungry?*	"Understands"
	C.Starting to talk	2	2	*[…]How often does your child do this?*	"Never", "Sometimes"and "Often"
	D.Vocabulary checklist	20/418 items	19/396 items		"Understands" and"Understands and says"
	1.Sound effects and animal sounds	10	12	*Cıs*	"
	2.Animals	17	36	*Horse*	"
	3.Vehicles	7	9	*Bus*	"
	4.Toys	8	8	*Ball*	"
	5.Food and drink	43	30	*Water*	"
	6.Clothing	18	19	*Shoe*	"
	7.Body parts	17	20	*Eye*	"
	8.Small household items	27	36	*Bottle*	"
	9.Furniture and rooms	22	24	*Bathroom*	"
	10.Outside of home	21	'Outside things' and'Places to go' together comprise	*Garden*	"

			one category”		
	11.Places to go	13	27	*School*	“
	12.People	21	20	*Uncle*	“
	13.Games and routines	31	19	*Birthday*	“
	14.Action words	95	55	*Take*	“
	15. Descriptive words	25	8	*Hot*	“
	16.Words about time	6	37	*Evening*	“
	17.Pronouns	12	11	*We*	“
	18.Question words	7	6	*Who*	“
	19.Locatives	10	11	*Under*	“
	20.Quantifiers	8	8	*None*	“
2. Actions and Gestures	**A.First communicative gestures**	16	12	*Nods head “yes”*	“Not yet”, “Sometimes”and “Often”
	B.Games and routines	8	6	*Sing*	“Yes” and “No”
	C.Actions with objects	17	17	*Put on shoes*	“Yes” and “No”
	D.Pretending to be a parent	13	13	*Talk to the baby*	“Yes” and “No”
	E.Imitating other adult actions	14	15	*Read*	“Yes” and “No”
	F.Pretend objects	1	1		“Yes” and “No”+ examples (text)

A comparison between TIGE-*II* and the *MB-CDI-Words and Sentences*:

PART	**SUBPART**	**N of ITEMS TIGE II**	**N of ITEMS CDI II**	**Example**	**Answer Category**
1.Words children use	**A.Vocabulary checklist**	21/711	22/680 items		
	1.Sound effects and animal sounds	13	12	*Cis*	“Says”

	2.Animals	41	43	*Horse*	“
	3.Vehicles	14	14	*Bus*	“
	4.Toys	20	18	*Ball*	“
	5.Food and drink	66	68	*Water*	“
	6.Clothing	32	28	*Shoe*	“
	7.Body parts	27	27	*Eye*	“
	8.Small household items	33	50	*Bottle*	“
	9.Furniture and rooms	27	33	*Bathroom*	“
	10.Outside of home	37	31	*Garden*	“
	11.Places to go	25	22	*School*	“
	12.People	32	29	*Uncle*	“
	13.Games and routines	40	25	*Birthday*	“
	14.Action words	146	103	*Take*	“
	15. Descriptive words	61	12	*Hot*	“
	16. Words about time	13	63	*Evening*	“
	17.Pronouns	21	25	*We*	“
	18.Question words	12	7	*Who*	“
	19.Locatives	21	26	*Under*	“
	20.Quantifiers	23	17	*None*	“
	21.Helping verbs	-	21	*Is*	“
	22.Connecting words	7	6	*And*	“
	B.How children use words	5	5	*Does your child ever talk about past events […]?*	“Not yet”, “Sometimes”and “Often”
2.Sentences and grammar	**A.Word endings/Part1**	11	4	*To talk about past events , we add an “di” to verbs. Does your child ever say […]?*	“Not yet”, “Sometimes”and “Often”
	B.Word forms		25	*Children*	“Says”
	C.Word endings/Part2		45	*Feets*	“Says”

	D.Three longest sentences		1+Text		"Not yet", "Sometimes"and "Often"
	E.Nominal (case) inflections	4			"Says"
	F.Verbal inflections	13			"Says"
	G.Complexity	9	37	*I want to go home*	"Says"

Appendix D

BÖLÜM 01-ÇOCUK İLE İLGİLİ BİLGİLER	
Çocuğun adı soyadı: _____	C1
Cinsiyet: _____	C2
Çocuğun doğum tarihi: _____/_____/_____ (YIL/AY/GÜN)	
Çocuğun yaşı: _____/_____/_____ (YIL/AY/GÜN)	C3
Anket tarihi: _____/_____/_____ (YIL/AY/GÜN)	

BÖLÜM 02. KİŞİSEL BİLGİLER

Annenin adı - soyadı	: ……
Adres	: ……
Telefon no (Ev/Cep)	: ……
Anketin yapıldığı il ismi	: ……
Anketör adı	: ……
Anket başlangıç saati	: ……
Anket bitiş saati	: ……

Soru	**BÖLÜM 03-DEMOGRAFİK SORULAR**		
1	Doğum tarihinizi öğrenebilir miyim? (Doğum tarihi bilinmiyor ise yaşı) Kaç yaşındasınız?	Gün…….…. Ay……Yıl……. Yaş:_____	*C4*
2	Nerede doğdunuz? Merkez il mi, ilçesi veya köyü mü?	1> Metropol, büyük şehir merkezi (İstanbul, Ankara, İzmir, Bursa, Adana) 2> Şehir (merkez) 3> Kasaba 4> Köy 5> Yurtdışı (**yazınız**) …… ……	*C5*

3	Bugüne kadar en uzun yaşadığınız yer? _____	1> Metropol, büyük şehir merkezi (İstanbul, Ankara, İzmir, Bursa, Adana) 2> Şehir 3> Kasaba 4> Köy 5> Yurtdışı (**yazınız**)	*C6*
4	Şu an oturduğunuz şehirde kaç yıldır yaşıyorsunuz?	.....YIL	*C7*
5	Evde _____ [ÇOCUĞUN İSMİ] ile Türkçeden başka bir dil kullanılıyor mu? Evet ise "hangi dil? "	1> Hayır → 9. soruya geçiniz 5> Almanca 2> Kürtçe 6> Fransızca 3> Arapça 7> Diğer _____ 4> İngilizce	*C8*
6	Siz çocuğunuzla en çok hangi dilde konuşuyorsunuz? **(TEK CEVAP)**	1>Türkçe 5>Almanca 2> Kürtçe 6>Fransızca 3> Arapça 7>Diğer _____ 4> İngilizce	*C9*
7	Kim çocuğunuzla Türkçeden başka dilleri konuşuyor?	1>Baba 2>Kardeş 3>Anneanne, babaanne 4> Diğer _____	*C10*
8	Çocuğunuzun bu dili ne kadar öğreneceğini düşünüyorsunuz? (ANKETÖR: Şıkları okuyun)	1> Türkçeden daha iyi 2> Türkçe kadar 3> Türkçeden daha az	*C11*
9	Anne baba birlikte mi?	1> Evet 2>Hayır Cevap **Evet** ise; Kaç yıldır evlisiniz ? Yıl	*C12* *C13*
10	Şimdi size çocuklarınız hakkında birkaç soru soracağım. Toplam kaç tane çocuğunuz var?	**(Yazınız)**	*C14*

11	(ANKETÖR: Lütfen en büyük çocuktan başlayarak aşağıdaki tabloyu doldurun)						
		İsim	**Doğum tarihi Gün/Ay/Yıl veya Yaş**	**Cinsiyet**	**Okula gidiyor mu?**	**Kaçıncı sınıfa devam ediyor?**	**Şu an sizinle mi yaşıyor?**
	1. çocuk	_____ **Yazınız**	___/___/___ _____ C15a	1> Kız 2> Erkek C15b	1>Evet 2>Hayır C15c	_____ **Yazınız** C15d	1>Evet 2>Hayır C15e
	2. çocuk	_____ **Yazınız**	___/___/___ _____ C16a	1> Kız 2> Erkek	1>Evet 2>Hayır C16c	_____ **Yazınız** C16d	1>Evet 2>Hayır C16e
	3. çocuk	_____ **Yazınız**	___/___/___ _____ C17a	1> Kız 2> Erkek C17b	1>Evet 2>Hayır C17c	_____ **Yazınız** C17d	1>Evet 2>Hayır C17e
	4. çocuk	_____ **Yazınız**	___/___/___ _____ C18a	1> Kız 2> Erkek C18b	1>Evet 2>Hayır C18c	_____ **Yazınız** C18d	1>Evet 2>Hayır C18e
	5. çocuk	_____ **Yazınız**	___/___/___ _____ C19a	1> Kız 2> Erkek C19b	1>Evet 2>Hayır C19c	_____ **Yazınız** C19d	1>Evet 2>Hayır C19e
	6. çocuk	_____ **Yazınız**	___/___/___ _____ C20a	1> Kız 2> Erkek C20b	1>Evet 2>Hayır C20c	_____ **Yazınız** C20d	1>Evet 2>Hayır C20e
	7. çocuk	_____ **Yazınız**	___/___/___ _____ C21a	1> Kız 2> Erkek C21b	1>Evet 2>Hayır C21c	_____ **Yazınız** C21d	1>Evet 2>Hayır C21e
	8. çocuk	_____ **Yazınız**	___/___/___ _____ C22a	1> Kız 2> Erkek C22b	1>Evet 2>Hayır C22c	_____ **Yazınız** C22d	1>Evet 2>Hayır C22e
	9. çocuk	_____ **Yazınız**	___/___/___ _____ C23a	1> Kız 2> Erkek C23b	1>Evet 2>Hayır C23c	_____ **Yazınız** C23d	1>Evet 2>Hayır C23e

	10. çocuk	_____ **Yazınız**	__/__/__ _____ C24a	1> Kız 2> Erkek C24b	1>Evet 2>Hayır C24c	_____ **Yazınız** C24d	1>Evet 2>Hayır C24e
12	Eğitim durumunuz, yani en son bitirdiğiniz sınıf nedir?				(**Yazınız**)		*C25*
13	Eşinizin eğitim durumu, yani en son bitirdiği sınıf nedir?				(**Yazınız**)		*C26*
14	Evinizde tüm çocuklar dahil kaç kişi yaşıyor?				(**Yazınız**)		*C27*
15	Evinizde siz, eşiniz ve çocuklarınız dışında başka bireyler var mı? (Bakıcı dahil)				1>Evet 2>Hayır → **Bölüm 04'e geçiniz.**		*C28*
16	Bu kişinin/kişilerin çocuğa göre akrabalık ilişkisi nedir?				1> Dayı 2> Teyze 3> Amca 4> Hala 5>Anneanne/babaanne 6>Dede 7>Bakıcı 8>Diğer_____		*C29* *C30*

Soru	BÖLÜM 04- ÇOCUĞUN SAĞLIĞI ANKETİ		
	Görüşmemizin bundan sonraki kısmı _____ [ÇOCUĞUN İSMİ] konusunda. Size hem _____ [ÇOCUĞUN İSMİ] hakkında hem de ona annelik yaparken yaşadığınız deneyimler konusunda bazı sorular sormak istiyorum.		
1	Hamileliğiniz süresince, doğumdan önce, kontrol için doktora gittiniz mi?	1> Evet 2> Hayır → **3. soruya geçiniz.**	*C31*
2	Yapılan kontroller sırasında veya doğum anında doktorunuz bebekle ilgili herhangi bir problem olduğunu ya da olabileceğini söyledi mi? Evet ise "Nedir?"	1> Evet _____ _____ **Annenin söylediği gibi aynen yazınız.** 2> Hayır	*C32* *C33*
3	Çocuğunuz hamileliğinizin kaçıncı haftasında doğmuştu? (Anne hafta olarak bilmiyorsa/hatırlamıyorsa doğum zamanı yazılır.)	____ _____ _____ **Ay** **Hafta** **Gün** Bilmiyorum / Hatırlamıyorum **C.** Zamanında **D.** Erken **E.** Geç	*C34*
4	Çocuğunuzun doğum ağırlığı neydi? **(Anne Doğum kilosunu bilmiyorsa / hatırlamıyorsa)** Doğduğunda kilosu normale göre nasıldı?	_____ kg _____ gr Bilmiyorum / Hatırlamıyorum Düşük Yüksek Normal	*C35*
5	Çocuğunuzun soğuk algınlığı gibi geçici hastalıklar hariç, günlük yaşamını etkileyen herhangi bir sağlık problemi var mı?	1> Evet 2> Hayır → **7. soruya geçiniz**	*C36*
6	Bu problemin ne olduğunu bize söyleyebilir ya da tarif edebilir misiniz?	_____ _____ **Annenin söylediği gibi aynen yazınız**	*C37* *C38*

7	Genel olarak çocuğunuzun sağlığını nasıl değerlendirirsiniz? **(ANKETÖR: Anne orta, zayıf, kötü şıklarından birini seçerse ve nedenini daha önce belirtmemişse neden diye sorunuz)** _____	1>Çok İyi 2>İyi 3>Orta 4>Zayıf 5>Kötü	*C39*

BÖLÜM 05. TIGE ENVANTERİ

Soru	BÖLÜM 06- ÇOCUK BAKIMI BÖLÜMÜ					
	Bazı anneler iş, okul, kurs ya da başka sebeplerle çocukları ile sürekli olarak beraber olamazlar. Bu durumda çocuklara anneleri dışında düzenli bir şekilde bakan başka birisi ya da birileri vardır. Bazı çocuklar da düzenli bir şekilde yuvaya ya da kreşe giderler. Şimdi soracağım sorular _____ [ÇOCUĞUN İSMİ] nin siz yokken birlikte vakit geçirdiği kişiler ve yerler hakkında.					
1	Doğduğundan beri çocuğunuza sizden başka bakmış olan kişileri düşünün. Çocuğunuza en az birkaç ay boyunca **<u>düzenli olarak</u>** (yani birkaç ay boyunca en az haftada birkaç gün ve günde 2 saatten fazla) bakan kimse oldu mu?	*1>Evet* *2>Hayır* → **Soru 3 e geçin.**				C40
	Şimdi çocuğunuza düzenli olarak bakmış olan kişiler ya da gittiği yuvalar hakkında birkaç şey öğrenmek istiyorum. Çocuğunuza doğduğundan bugüne kadar bakmış olan kişileri sırası ile düşünüp bu soruyu ona göre cevaplamanızı istiyorum. Eğer çocuğunuza aynı anda birden fazla kişi baktıysa, lütfen çocuğunuz en çok kiminle vakit geçirdiyse onu belirtin.					
2		**Çocuğunuza Bakım Sağlayan Kişi/ Yuva**	**Bu kişinin/ yuvanın bakma süresi**	**Kişi ise**	**Bu kişinin bakma yeri**	
	1	1>Kişi 2>Yuva C41a	Kaç aylıktan kaç aylığa baktı? _____ Toplam süre: Yıl …… Ay …….	1>Akraba (Yakınlık derecesini yazınız) _____ 2>Bakıcı C41c	1>Çocuğun evinde 2>Bakan kişinin evinde 3>Diğer_____ C41d	

			C41b			
	2	1>Kişi 2>Yuva C42a	Kaç aylıktan kaç aylığa baktı? _____ Toplam süre: Yıl ……. Ay……. C42b	1>Akraba (Yakınlık derecesini yazınız) _____ 2>Bakıcı C42c	1>Çocuğun evinde 2>Bakan kişinin evinde 3>Diğer_____ C42d	
	3	1>Kişi 2>Yuva C43a	Kaç aylıktan kaç aylığa baktı? _____ Toplam süre: Yıl ……. Ay……. C43b	1>Akraba (Yakınlık derecesini yazınız) _____ 2>Bakıcı C43c	1>Çocuğun evinde 2>Bakan kişinin evinde 3>Diğer_____ C43d	
	4	1>Kişi 2>Yuva C44a	Kaç aylıktan kaç aylığa baktı? _____ Toplam süre: Yıl ……. Ay……. C44b	1>Akraba (Yakınlık derecesini yazınız) _____ 2>Bakıcı C44c	1>Çocuğun evinde 2>Bakan kişinin evinde 3>Diğer_____ C44d	
	5	1>Kişi 2>Yuva C45a	Kaç aylıktan kaç aylığa baktı? _____ Toplam süre: Yıl ……. Ay……. C45b	1>Akraba (Yakınlık derecesini yazınız) _____ 2>Bakıcı C45c	1>Çocuğun evinde 2>Bakan kişinin evinde 3>Diğer_____ C45d	
3	Çocuğunuz şu anda kreşe veya yuvaya gidiyor mu?			1>Evet 2>Hayır → **Bölüm 07'ye geçin.**		C46
4	Çocuğunuz şu anda kreşe ya da yuvaya haftada kaç gün gidiyor?			_____ GÜN		C47
5	Çocuğunuz kreşte veya yuvada ne kadar süre kalıyor?			1> Tam gün 2> Yarım gün 3> 1-2 Saat 4> Diğer_____		C48

6	Çocuğunuzun sınıfında aşağı yukarı kaç çocuk var?	6. 5 veya daha az 5> 21 veya daha fazla 7. 6-10 6> Emin değilim / bilmiyorum 8. 11-15 9. 16-20	C49

8-16 ay yaş grubuna aşağıdaki sorulardan yalnız ilk 8 tanesi (1-8) sorulacaktır.
16-36 ay yaş grubuna tüm sorular (1-15) sorulacaktır.

Soru	BÖLÜM 07a- HOME MÜLAKATI		
	Sizin _____ [ÇOCUĞUN İSMİ] ile birlikte yaptığınız şeyler ve evde koyduğunuz kurallar anne-çocuk ilişkisini oluşturan önemli şeylerdir. Şimdi bunlar hakkında size birkaç soru sormak istiyorum. **(ANKETÖR: Cevap şıklarından her birisi okunacaktır.)**		
1	**Çocuğunuz günde en az bir öğün yemeği babası, siz ve varsa kardeşleriyle birlikte yiyor mu?**	1>Evet 2>Hayır	*C87*
2	**Evinize en az haftada bir kere gazete ya da dergi alıp siz okuyor musunuz?**	1>Evet alıyoruz ve okuyorum 2>Evet alıyoruz ama ben okumuyorum 3>Hayır almıyoruz 4>Okuma-yazma bilmiyor.	*C88*
3	**Evde siz ya da aileden başka birisi çocuğunuza ne sıklıkta kitap okur?**	1>Her gün mutlaka okunur. 2>Haftada bir kaç kere okunur. 3>Haftada bir kere okunur 4>Nadiren (haftada bir kereden daha az) okunur 5>Hiç okunmaz 6>Okuma-yazma bilinmiyor.	*C89*
4	**Çocuğunuz günde yaklaşık kaç saat televizyon karşısında geçirir?**	_____ saat	*C90*
5	**Geçtiğimiz bir yıl içinde çocuğunuzla birlikte, başka bir yere (köy, kasaba, yayla ya da başka bir şehir) gezmeye gittiniz mi?**	1>Evet, birkaç kere 2>Evet, bir kere 3>Hayır	*C91*
6	**Geçtiğimiz bir yıl içinde çocuğunuzu herhangi bir gösteriye (hayvanat bahçesi, sirk, müze, çocuk tiyatrosu, kukla gösterisi gibi) götürdünüz mü?**	1>Evet, birkaç kere 2>Evet, bir kere 3>Hayır	*C92*
7	**Çocuklar bazen insanın sabrını çok zorlayabilir. Geçtiğimiz hafta içinde böyle bir durum olduğunda kaç kere çocuğunuza vurmak, şaplak atmak, sarsmak veya çimdiklemek gibi fiziksel bir ceza verdiniz?**	1>Böyle bir durum olmadı 2>Böyle durumlar oldu ama fiziksel ceza vermedim 3>Bir kere fiziksel ceza verdim 4>İki veya daha fazla kere fiziksel ceza verdim	*C93*
8	**Çocuğunuz bir şeye kızdığında ya da öfkelendiğinde ne yaparsınız?**	1>Hiçbir şey yapmam, sakinleşmesini beklerim 2> Onu oyalamaya veya dikkatini başka bir şeye çekmeye çalışırım 3>Onu yalnız kalabileceği bir yere yollarım 4>O gün için sevdiği bir şeyi (çikolata, geç yatma, televizyon seyretme v.b.) yasaklarım. 5>Onu fiziksel olarak cezalandırırım (örneğin, vururum, sarsarım, çimdik atarım, kulağını	*C94*

		çekerim). **6>Onunla konuşur, sorunu anlamaya ve çözmeye çalışırım.** **7>Bağırır, kızdığımı sözlerimle ifade ederim.** **8>Diğer (yazınız)** _____ _____	*C95*

9	Çocuğunuz eğer kızgınlıkla ve o anki öfkesiyle size vururs, ne yaparsınız?	1>Hiçbir şey yapmam, sakinleşmesini beklerim 2>Onu oyalamaya veya dikkatini başka bir şeye çekmeye çalışırım 3>Onu odasına veya bir köşeye yollarım 4>O gün için sevdiği bir şeyi (çikolata, geç yatma, televizyon seyretme v.b.) yasaklarım. 5>Onu fiziksel olarak cezalandırırım (örneğin, vururum, sarsarım, çimdik atarım, kulağını çekerim). 6>Onunla konuşur, sorunu anlamaya ve çözmeye çalışırım. 7>Diğer (**yazınız**) _____	*C96* *C97*
10	Çocuğunuza şarkı, şiir veya tekerleme öğrenmesi için yardımcı oluyor musunuz?	1>Evet, her fırsatta 2>Evet, arada sırada 3>Henüz Değil	*C98*
11	Çocuğunuza bir yeri ya da bir şeyi tarif edebilmesi için altında, üstünde, yanında, arkasında, daha büyük, daha küçük gibi terimleri öğretiyor musunuz?	1>Evet, her fırsatta 2>Evet, arada sırada 3>Henüz değil	*C99*
12	Çocuğunuza renkleri öğrenmesi için yardımcı oluyor musunuz?	1>Evet, her fırsatta 2>Evet, arada sırada 3>Henüz değil	*C100*
13	Çocuğunuza sayıları öğrenmesi için yardımcı oluyor musunuz?	1>Evet, her fırsatta 2>Evet, arada sırada 3>Henüz değil	*C101*
14	Harfleri öğrenmesi için çocuğunuza yardımcı oluyor musunuz? (Örneğin, adını nasıl yazacağını göstermek ya da harflerle ilgili bir soru sorduğunda cevaplamak ve göstermek vb.)	1>Evet, her fırsatta 2>Evet, arada sırada 3>Henüz değil	*C102*
15	Çocuğunuza kare, üçgen, yuvarlak vb. gibi basit şekillerin isimlerini öğrenmesi için yardımcı oluyor musunuz?	1>Evet, her fırsatta 2>Evet, arada sırada 3>Henüz değil	*C103*

Soru	BÖLÜM 07b- HOME GÖZLEME DAYANAN MADDELER		
	Çocuğa yönelik materyaller		
1	Çocuğun değişik renkleri (renk kontrastları) olan, farklı büyüklükleri ve şekilleri ayrıştıran oyuncakları var.	1>Evet 2>Hayır	*C50*
2	Çocuğun en az bir tane yapbozu var.	1>Evet 2>Hayır	*C51*
3	Evde çocuğun yaşına uygun müzik çalabilmek için en az iki tane kaset ya da CD si (SİDİ si) var.	1>Evet 2>Hayır	*C52*
4	Çocuğun yaratıcılığını destekleyecek (bloklar, legolar, oyun hamuru gibi) oyuncakları var.	1>Evet 2>Hayır	*C53*
5	Çocuğun el becerilerini destekleyen oyunları veya oyuncakları var (ipe dizmek için boncuk, küçük bloklar, oyuncak bebeğe giydirmek için giysiler, vb.).	1>Evet 2>Hayır	*C54*
6	Çocuğun, sayıları öğrenmesine yardımcı olan oyuncakları veya oyunları var.	1>Evet 2>Hayır	*C55*
7	Çocuğun en az üç tane çocuk kitabı var.	1>Evet 2>Hayır	*C56*
8	Evdeki herkesin okuyabileceği en az on kitap görünür şekilde duruyor.	1>Evet 2>Hayır	*C57*
9	Çocuğun kullanabileceği boya, tebeşir veya kalem gibi malzemeleri var.	1>Evet 2>Hayır	*C58*
	Dil için uyarma		
10	Çocuğun, hayvanların isimlerini öğrenmesine yardımcı olan oyuncakları var.	1>Evet 2>Hayır	*C59*
11	Anne çocuğa lütfen, teşekkür ederim, özür dilerim gibi basit nezaket cümlelerini öğretiyor/öğretmiş.	1>Evet 2>Hayır	*C60*
12	Anne, çocuğun anlattıklarını dinliyor ve onu konuşması için teşvik ediyor.	1>Evet	*C61*

		2>Hayır	
13	Çocuk kendi isteklerini (örneğin kahvaltıda reçel-ekmek yemek istiyorum gibi) ifade ediyor.	1>Evet 2>Hayır	*C62*
14	Anne çocukla konuşurken doğru bir dilbilgisi ve telaffuz kullanıyor.	1>Evet 2>Hayır	*C63*
15	Annenin ses tonu, çocuğa olumlu duygular (sıcaklık, şefkat, sevgi vb) taşıyor.	1>Evet 2>Hayır	*C64*
16	Anne (içerik açısından) çocukla yetişkinle konuşur gibi konuşuyor.	1>Evet 2>Hayır	*C65*
17	Anne çocuğun ifadesinde eksik kalan yerleri tamamlıyor .	1>Evet 2>Hayır	*C66*
	Fiziksel Çevre		
18	Yaşanan ev güvenli görünüyor.	1>Evet 2>Hayır	*C67*
19	Dışarıdaki oyun alanı güvenli görünüyor.	1>Evet 2>Hayır	*C68*
20	Dairenin içi karanlık ya da boğucu (sıkıcı).	1>Evet 2>Hayır	*C69*
21	Çevre estetik olarak güzel gözüküyor.	1>Evet 2>Hayır	*C70*
22	Evde, kişi başına en az 10 m^2 alan düşüyor. (3 metre x 3 metre veya daha fazla)	1>Evet 2>Hayır	*C71*
23	Odalar, mobilyalarla aşırı derecede dolu.	1>Evet 2>Hayır	*C72*
24	Ev, makul düzeyde temiz.	1>Evet 2>Hayır	*C73*
25	Ev, asgari düzeyde dağınık (bulaşık, kalmış yiyecek, kaldırılmamış kıyafet yığınları yok).	1>Evet 2>Hayır	*C74*
	Sıcaklık ve kabul		

26	Anne, çocuğu ziyaret sırasında en az 5 dakika kadar kendine yakın olacak şekilde tuttu.	1>Evet 2>Hayır	*C75*
27	Anne, çocukla ziyaret sırasında en az iki kere sohbet etti.	1>Evet 2>Hayır	*C76*
28	Anne, çocuğun sorularını ve isteklerini sözel olarak cevaplandırdı.	1>Evet 2>Hayır	*C77*
29	Anne, genellikle çocuğun konuşmalarına sözel olarak cevap verdi.	1>Evet 2>Hayır	*C78*
30	Anne, çocuğu ziyaret sırasında en az iki kere kendiliğinden övdü (“aferin,” “güzel yaptın,” vb.).	1>Evet 2>Hayır	*C79*
31	Anne, ziyaret sırasında çocuğu en az bir kere okşadı, öptü, sevdi veya kucakladı.	1>Evet 2>Hayır	*C80*
32	Anne, ziyaret sırasında çocuğun bir becerisini (örneğin, yemeğini kendi yiyebilmesi) ya da sevdiği bir şeyi gösterebilmesi için çocuğa destek oldu.	1>Evet 2>Hayır	*C81*
33	Anne, ziyaretçiyi çocuğa tanıttı.	1>Evet 2>Hayır	*C82*
34	Çocuğun yaptığı resim, boyama, yapıştırma ya da proje gibi faaliyetler evde bir yerde sergilenmiş.	1>Evet 2>Hayır	*C83*

	Çocuğa katı disiplin uygulamak		
35	Anne, çocuğa karşı ziyaret sırasında bir kereden fazla sert konuştu, onu azarladı veya aşağıladı.	1>Evet 2>Hayır	*C84*
36	Anne, ziyaret sırasında çocuğu fiziksel olarak kısıtladı (kollarını tutarak hareketini engellemek, istemediği halde kucağa alarak uzaklaştırmak, kolundan çekmek, vb.)	1>Evet 2>Hayır	*C85*
37	Anne, ziyaret sırasında çocuğu fiziksel olarak cezalandırdı (vurmak, kulak çekmek, çimdiklemek, vb.).	1>Evet 2>Hayır	C86

Soru	**BÖLÜM 08 – HANE GELİR-GİDER ANKETİ**	

	Son olarak size evinizin geçimi ile ilgili birkaç sorum olacak.		
1	Şu anda para kazanmak amacıyla herhangi bir şey yapıyor musunuz?	1>Evet 2>Hayır → **soru 3'e geçin**	*C104*
2	Ne iş yapıyorsunuz?	**(Yazınız)** .... **Soru 4'e geçin**	*C105*
3	Şimdi sayacaklarımdan hangisi size en uygun olandır?	1>Emekli 2>Ev kadını 3>Öğrenci veya kursa gidiyor 4>İş arıyor, bulsa çalışmak istiyor 5>Gönüllü çalışıyor	*C106*
4	Şu anda eşiniz çalışıyor mu?	1>Evet 2>Hayır → **soru 6'ya geçin**	*C107*
5	Ne iş yapıyor?	**(Yazınız)**	*C108*
6	Evinizde para kazanmak için çalışan kişi sayısı (siz dahil) nedir?	**(Yazınız)** _____	*C109*
7	Oturduğunuz ev size mi ait?	1>Evet → **soru 10'a geçin** 2>Hayır	*C110*
8	Oturduğunuz eve kira ödüyor musunuz?	1>Evet 2>Hayır	*C111*
9	Oturduğunuz ev lojman mı?	1>Evet 2>Hayır	*C112*

	Şimdi size bazı şeyler sayacağım. Bunlara evde sizinle yaşayan kişilerden kimin sahip olduğu önemli değildir. Evinizde bu gerecin olup olmadığı önemli bizim için. Her biri için "sahibiz", "sahip değiliz" seçeneklerinden birini söyleyiniz.			
10		Sahibiz	Sahip Değiliz	

	1. Televizyon	1	2	*C113*
	2. Video/VCD Oynatıcı	1	2	*C114*
	3. Kredi Kartı	1	2	*C115*
	4. Bilgisayar	1	2	*C116*
	5. İnternet bağlantısı	1	2	*C117*
	6. Araba	1	2	*C118*
	7. Buzdolabı	1	2	*C119*
	8. Çamaşır makinesi	1	2	*C120*
	9. Bulaşık makinesi	1	2	*C121*
	10. LCD/Plazma televizyon	1	2	*C122*
	11. Mikro dalga fırın	1	2	*C123*
	12. Yurt içi ve/veya yurtdışında tatil imkanı	1	2	*C124*
	13. Yazlık ev	1	2	*C125*
11	Evinizde yaşayan tüm kişilerin, yiyecek-içecek, kira, gaz, elektrik, ulaşım, okul, taksitler, doktor veya ilaç gibi pek çok masrafları olabilir. Bunların hepsini toplayacak olursak, evinizde yaşayan kişilerin aylık toplam masrafları ne kadardır? (ANKETÖRE: Eğer kendisi söylemezse şıkları okuyun.) 1> 650 TL'den az 2> 650 TL-1200 TL arası 3> 200-3000 TL arası 4> 3000-5000 TL arası 5> 5000 TL'den fazla	…… YTL		C126

Sizin tanıdığınız ve 8-36 aylar arasında doğmuş bir çocuğu olan anne biliyorsanız bizi yönlendirir misiniz?

……

ANKETÖRE:

BÖLÜM 09-ANKETÖRÜN ANNEYE DAİR GÖZLEMLERİ

	Lütfen bu soruları annenin görüşme sırasındaki tutum ve davranışlarını göz önüne alarak doldurunuz..		
1	Katılımcının görüşmeye olan ilgisini nasıl değerlendirirsiniz?	5> Çok ilgiliydi 4> İlgiliydi 3> Biraz ilgiliydi 2> İlgili değildi 1> Çok ilgisizdi	*C127*
2	Katılımcı soruları ne derece anladı?	5> Tümünü anladı 4> Çoğunu anladı 3>Bazı soruları anlamadı 2> Çoğunu anlamadı 1> Hiçbirini anlamadı	*C128*
3	Katılımcı soruları cevaplarken ne derece dikkat gösterdi?	5> Çok dikkatliydi 4> Dikkatliydi 3>Bazen dikkatli değildi 2> Dikkatsizdi 1> Çok dikkatsizdi	*C129*
4	Katılımcı soruları cevaplarken ne kadar içten (samimi) cevaplar verdi?	3> Çoğunlukla içten (samimi) cevaplar verdi 2> Ara sıra içten (samimi) cevaplar verdi 1> İçten (samimi) cevaplar vermedi	*C130*
5	Katılımcı görüşme sırasında herhangi bir soruya/bölüme kayda değer bir tepkide bulundu mu?	1>Evet 2> Hayır → **8'e geçiniz**	*C131*
6	Hangi soruya / sorulara?	.....	*C132*
7	Ne gibi tepkiler? (kısaca yazınız)	.....	*C133*
8	Anketteki herhangi bir bölümü yarıda kesmek zorunda	1>Evet	*C134*

	kaldınız mı?	2> Hayır → **Anket bitti**	
9	Hangi bölümü/ bölümleri?	.....	*C135*
10	*Neden?*	.....	*C136*

Appendix E

TIGE Geçerlilik Çalışması Serbest Etkileşim Yönergesi (20 dakika çekim):

Araştırmacı: "Çocuğunuzla (ismini söyleyin) bir 15-20 dakika kadar istediğinizi yapmanızı rica ediyoruz. Siz normalde neler yapıyorsanız yine aynı şeyleri yapabilirsiniz." Anne ne yapalım vs. diye düşünürse, "Burada amaç birlikte vakit geçirmeniz, normalde yemek yediriyorsanız yemek yedirebilirsiniz, oynayabilirsiniz… ne isterseniz yapabilirsiniz."

Appendix F

Kitapla Etkileşim Yönergesi (5-10 dakika):

"Size bir resimli çocuk kitabı getirdik. Bununla beraberce oynayabilirsiniz. Birlikte resimlerine bakıp, çocuğunuzla birlikte hikaye oluşturabilirsiniz. Biz burada X (çocuğun ismini söyleyin)'in nasıl iletişim kurduğunu, onun konuşmalarını duymak istiyoruz. Onu da katarak kitaba bakabilirsiniz."

Appendix G

Hayvan Figürleri ile Oyun Yönergesi (10 dakika)

“Size şimdi bazı oyuncaklar vereceğiz. Bunlarla ikiniz beraber istediğiniz şekilde oynayabilirsiniz.”

Doktor, Mutfak ve Tamir Aletleri ile Oyun Yönergesi (10 dakika)

“Son olarak da size başka oyuncaklar vereceğiz. Bunlarla ikiniz beraber istediğiniz şekilde oynayabilirsiniz.”

Appendix H

@Begin
@Languages: tr
@Participants: CHI Esma_Nisa_Peker Target_Child, MOT Mother, BUR Burçak Recorder
@ID: tr|macwhinney|CHI|2;3.25|female|Koç|low|Target_Child|middle|
@Age of CHI: 2;3,25
@Sex of CHI: female
@Education of MOT: middle
@SES of MOT: low
@Date: 9-MAR-2010
@Transcriber1: Ayça_Alaylı
@Transcriber2: Burçak_Aktürk
@Coder: Burçak_Aktürk
@Recorder: Burçak_Aktürk
@Media: esmapeker1.mov
@Situation: an unstructured free play activity setting .
*REC: şimdi esma ile bi(r) on beş yirmi dakka [: dakika] kadar
istediğinizi yapmanızı rica ediyoruz sizden .
*REC: normalde neler yapıyo(r)sanız yine aynı şeyleri yapabilirsiniz .
*CHI: Esmamı [: Esma mı] dedi ?
%mor: N:PROP|Esma-QUE V|de-PAST-3S ?
*REC: evet Esma <dedim> [>].
*MOT-CHI: <ne yapalım> [<] anneci(ği)m # hım@i ?
%mor: WH|ne V|yap-OPT&1P VOC|anne-DIM-POSS&1S INTERJ|hım ?
*REC: burda amaç beraber vakit geçirmeniz.
*MOT: hıı@i .
%mor: INTERJ|hıı .
*MOT-CHI: ne oynıyalım [: oynayalım] fış_fış_kayıkçı oynıyalımmı
[: oynayalım mı] he@i ?
%mor: WH|ne V|oyna-OPT&1P N|fış_fış+kayıkçı V|oyna-OPT-1P-QUE
INTERJ|he ?
*MOT-CHI: gel [=!laughs]
%mor: V|gel !
*MOT-CHI: şöyle oturalım otur bakalım .
%mor: ADV:PRO|şöyle V|otur-OPT-1P V|otur-2S V|bak-OPT-1P .
%act: MOT carries the CHI to the couch .
*MOT-CHI: hadi # sen de söyle ama tamammı [: tamam mı] hadi ?
%mor: CO|hadi PRO|sen CONJ|de V|söyle-2S CONJ|ama CO|tamam-QUE CO|hadi ?
%act: MOT sings fış_fış_kayıkçı song .
*MOT-CHI: başka # ayıcığı [/] # ayıcığı uyutalımmı [: uyutalım mı]?

%mor: ADV|başka N|ayı-DIM-ACC V|uyu-CAUS:T-OPT-1P-QUE ?
*MOT-CHI: hadi ayağını +/
%mor: CO|hadi N|ayak-POSS&2S .
*CHI-MOT: fış@c yap(a)lım .
%mor: N:PROP|fış@c V|yap-OPT-1P .
*MOT-CHI: +^ fışmı [:fiş mı] yapalım ayıcıkla hadi sen yap bi(r) de # yap hadi sen yap .
%mor: fış@c-QUE V|yap-OPT-1P N|ayı-DIM-COM CO|hadi PRO|sen V|yap-2S ART:INDEF|bir CONJ|de V|yap CO|hadi PRO|sen V|yap-2S .
*MOT: &=laugh .
*MOT-CHI: hadi # ayıcıkla fış_fış yap # hadi .
%mor: CO|hadi N|ayı-DIM-COM N|fış_fış@c V|yap-2S CO|hadi .
*CHI-MOT: ıh@i [/] ıh@i .
%mor: CO|ıh
*MOT-CHI: gel oyuncaklarını getireyim ben senin # şur(a)dan.
%mor: V|gel-2S N|oyuncak-PL-POSS&2S-ACC V|getir-OPT-1S PRO|ben PRO|sen-GEN PRO|şura-ABL .
%act: MOT brings toys
@Activities: CHI and MOT are playing with the toys at the sofa .
*MOT-CHI: bakalım # şöyle.
%mor: V|bak-OPT-1P ADV:PRO|şöyle .
*MOT-CHI: napalım? [: ne yapalım] al sen bana yemek yap hadi .
%mor: WH|ne V|yap-OPT-1P V|al-2S PRO|sen PRO|ben-DAT N|yemek V|yap-2S CO|hadi .
*CHI-MOT: hıı:@i ?
%mor: INTERJ|hıı .
*MOT-CHI: hadi bana yemek ver .
%mor: CO|hadi PRO|ben-DAT N|yemek V|ver-2S .
*CHI-MOT: hıı:@i ?
%mor: INTERJ|hıı .
*MOT-CHI: hadi .
%mor: CO|hadi .
*CHI-MOT: anne istemi(y)o(ru)m.
%mor: VOC|anne V|iste-NEG-IPFV-1S.
*MOT-CHI: hadi bana şur(a)dan çilek koy bi(r) tane ver ben yiyim [: yiyeyim] hadi .
%mor: CO|hadi PRO|ben-DAT PRO|şura-ABL N|çilek V|koy-2S CARD|bir N|tane V|ver-2S PRO|ben V|ye-OPT-1S CO|hadi .
*CHI-MOT: hıı:@i ?
%mor: INTERJ|hıı.
*MOT-CHI: hadi bi(r) tane çilek koy bana # hadi # evet
%mor: CO|hadi CARD|bir N|tane N|çilek V|koy-2S PRO|ben-DAT CO|hadi CO|evet .
*CHI: 0 [=! gives the toy]
*MOT: 0 [=! pretends to eat]
*MOT-CHI: çok güzel olmuş !
%mor: ADV|çok+güzel V|ol-PFV .

*MOT-CHI: başka ?
%mor: ADJ|başka ?
*CHI-MOT: bakşa [: başka] da va(r) .
%mor: ADJ|başka CONJ|de EXIST|var .
*MOT-CHI: başka da ver doymadım ben .
%mor: ADJ|başka CONJ|de V|ver-2S V|doy-NEG-PAST-1S PRO-ben.
*MOT-CHI: ben de sana koyiyim [: koyayım] dur # ben de sana bundan
veriyim [:vereyim] hadi sen de ye # hadi .
%mor: PRO|ben CONJ|de PRO|sen-DAT V|koy-OPT-1S V|dur-2S PRO|ben CONJ|de PRO|sen-DAT
PRO:DEM|bu-ABL V|ver-OPT-1S CO|hadi PRO|sen CONJ|de V|ye CO|hadi .
*CHI-MOT: hɪ:@i
%mor: INTERJ|hɪ.
*MOT-CHI: ye bakalım beyenicekmisin [: beğenecek misin] ?
%mor: V|ye-2S V|bak-OPT-1P V|beğen-FUT-QUE-2S ?

Appendix I

freq +t*CHI -sxx -syy -syyy -s*@i -s*@b +f

Sat Aug 18 00:22:27 2012

freq (27-Feb-2012) is conducting analyses on:

ONLY speaker main tiers matching: *CHI;

****

From file <c:\Documents and Settings\generic\Desktop\MORFOLOİK KODLAMALARANKARA-ESKISEHIR\9.8.2012 yeni morf kodlama\Deniz Turan.>

2 Ada

1 Haluk

3 Merve

1 ablayla

1 ablaylan

3 anne

1 at

2 atın

1 ben

1 bindiler

4 bir

2 bitti

15 bu

1 burası

1 buraya

1 büyük

3 da

4 daha

1 de

1 değil

1 dönüyor

2 dün

3 dıgıdık@o

1 et

1 evini

1 gelecekmiş

1 gelmiyor

1 gelmiş

1 gelmişti

1 gitsinler

3 gördüm

1 görmüştüm

1 hadi

1 hop@f

2 içsinler

1 kar

3 kaydım

1 kim

3 konuşmam

1 konuşmuyorum

1 korkuyorum

1 koy

1 koyalım

1 koymayalım

1 koyun

1 koşmam

1 kırdık

1 me@o

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14 ne

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1 sevdim

1 sincap

1 su

1 tak

4 tane

1 vardı

1 ver

2 yap

1 yapcam

5 yapma

1 yapıyormuş

1 yağıyormuş

1 yoktu

1 yuvarlak

1 yüksek

1 çoçuk

1 çıktı

2 öp

2 üst

1 üstüne

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80 Total number of different item types used

147 Total number of items (tokens) 0.544 Type/Token ratio

mlu +t*CHI -s"INTERJ|*" +f

Sat Aug 18 00:22:29 2012

mlu (27-Feb-2012) is conducting analyses on:

ONLY dependent tiers matching: %MOR;

****

From file <c:\Documents and Settings\generic\Desktop\MORFOLOİK KODLAMALARANKARA-ESKISEHIR\9.8.2012 yeni morf kodlama\Deniz Turan.>

MLU for Speaker: *CHI

MLU (xxx, yyy and www are EXCLUDED from the utterance and morpheme counts):

Number of: utterances = 1, morphemes = 267

Ratio of morphemes over utterances = 267.000

Standard deviation = 0.000

References

Acarlar, F., Aksu-Koç, A., Aktürk, B., Ates, B., Küntay, A.C., Maviş, İ., Sofu, H., Topbaş, S., & Turan, F. (2011). "Early lexical and morphological development assessed by using the Turkish Communicative Development Inventory: A large sample study". Poster presented at the 12th Congress of the International Association for the Study of Child Language, Montreal, CANADA.

Aksu-Koç, A. ,Küntay, A.C.,Acarlar, F., F., Maviş, İ., Sofu, H., Topbaş, S., Turan, F. (2011). Türkçe'de Erken Sözcük ve Dilbilgisi Gelişimini Ölçme ve Değerlendirme Çalışması. Türkçe İletişim Gelişimi Envanterleri: TIGE-I ve TIGE-II, TUBITAK, Proje No: 107K058

Arriaga, R. I., Fenson, L., Cronan, T., & Pethick, S. J. (1998). Scores on the MacArthur Communicative Development Inventory of children from low- and middle-income families. *Applied Psycholinguistics*, 19, 209–223.

Au, T. K., Dapretto, M. & Song, Y. K. (1994). Input versus constraints: Early word acquisition in Korean and English. *Journal of Memory and Languages, 33*, 567–582.

Bauer, D.J., Goldfield, B.A., & Reznick, J.S. (2002). Alternative approaches to analyzing individual differences in the rate of early vocabulary development. *Applied Psycholinguistics*, 23, 313–335.

Bates, E., Bretherton, I., & Snyder, L. (1988). *From first words to grammar: Individual differences and dissociable mechanisms*. Cambridge: Cambridge University Press.

Bates, E., Thal, D., & Janowsky, J. S. (1992). Early language development and its neural correlates. In S. J. Segalowitz & I. Rapin (Vol. Eds.), *Handbook of neuropsychology: Vol. 7. Child neuropsychology*. Amsterdam: Elsevier Science Publishers.

Bates, E., Marchman, V., Thal, D., Fenson, L., Dale, P., Reznick, S., Reilly, J. & Hartung, J. (1994). Developmental and stylistic variation in the composition of early vocabulary. *Journal of Child Language, 21*, 85–124.

Bates, E., Dale, P.S., & Thal, D. (1995). Individual differences and their implications for theories of language development. In P. Fletcher & B. MacWhinney (Eds.), Handbook of child language. Oxford: Basil Blackwell.

Bates, E., Thal, D., Trauner, D., Fenson, J., Aram, D., Eisele, J., & Nass, R. (1997). From first words to grammar in children with focal brain injury. *Developmental Neuropsychology, 13*, 447–476.

Baydar, N., & Bekar, O. (2007). HOME-TR observation and interview scales, Unpublished Manuscript. Retrieved May 25, 2009, from http://portal.ku.edu.tr/~ECDET/index.htm.

Baydar, N., Kuntay, A., Goksen, F., Yagmurlu, B. & Cemalcilar, Z. (2008). [The Study of Early Childhood Developmental Ecologies in Turkey-Wave- 1 Results]. Retrieved May 25, 2009, from http://portal.ku.edu.tr/~ECDET/index.htm.

Berglund, E. & Eriksson, M. (2000). ”Communicative development in Swedish Children 16-28 months old: The Swedish Early Communicative Development Inventory -words and sentences”. *Scandinavian Journal of Psychology*. 41, 133-144.

Berglund, E. & Eriksson, M. (2000). ”Reliability and content validity of a new instrument for assessment of communicative skills and language abilities in young Swedish children”. *Log Phon Vocol*. 25, 176-185.

Berglund, E. & Eriksson, M., Westerlund, M., (2005). Communicative skills in relation to gender, birth order, childcare and socioeconomic status in 18-month-old children. *Scandinavian Journal of Psychology*, 46, 485-491.

Berman, R. A. & Slobin, D. I. (1994). *Relating events in narrative : a crosslinguistic developmental study.* Hillsdale, NJ: Erlbaum.

Bishop, D. V. M., Price, T. S., Dale, P. S., & Plomin, R. (2003). Outcomes of early language delay: II. Etiology of transient and persistent language difficulties. *Journal of Speech, Language, and Hearing Research*, 46, 561–575.

Bleses, D. & Basbell, H. (2004). “The Danish sound structure - Implications for language acquisition in normal and hearing impaired populations”. E. Schmidt, U. Mikkelsens, I. Post, J. B. Simonsen & K. Fruensgaard (Eds.) *Brain, Hearing and Learning. 20th Danavox Symposium 2003*, 165-190.

Bleses, D., Vach, W., Slott, M., Wehberg, S., Thomsen, P., Madsen, T. O. & Basbell, H. (2008). Early vocabulary development in Danish and other languages: A CDI-based comparison. Journal of Child Language 35, 619–50.

Bleses, D., Vach, W., Slott, M., Wehberg, S., Thomsen, P., Madsen, T. O. & Basbell, H. (2008). The Danish Communicative Developmental Inventories : Validity and main 0developmental trends. Journal of Child Language 35, 651–69.

Bloom, L., Tinker, E. & Margulis, C. (1993). The words children learn: Evidence against a noun bias in early vocabularies. *Cognitive Development, 8*, 431–450.

Bloom, P. (2000). *How children learn the meanings of words.* Cambridge, MA. MIT Press.

Bornstein, M. H. & Haynes, O. M. (1998). Vocabulary competence in early childhood: measurement, latent construct, and predictive validity. *Child Development 69,* 654–71.

Bornstein, M. H., Hahn, C.-S. & Haynes, O. M. (2004). Specific and general language performance across early childhood: stability and gender considerations. *First Language 24,* 267–304.

Bornstein, M. H., Cote, L. R., Maital, S., Painter, K., Park, S. Y., Pascual, L., Pecheux, M. G., Ruel, J., Venuti, P. & Vyt, A. (2004). Cross-linguistic analysis of vocabulary in young children: Spanish, Dutch, French, Hebrew, Italian, Korean, and American English. *Child Development 75(4),* 1115–39.

Bornstein, M. H. & Cote, L. R. (2005). Expressive vocabulary in language learners from two ecological settings in three language communities. *Infancy*, *7*(3), 299–316.

Bradley, R.H., & Caldwell, B, M. (1984). The relations of infants' home environments to achievement test performance in first grade: A follow-up study. Child Development, 55, 803-809.

Camaioni, L., Castelli, M.C., Longobardi E., & Volterra, V. (1991). A parent report instrument for early language assessment. *First Language*, 11, 345-359.

Caselli, M. C., Leonard, L., Volterra, V. & Campagnoli, M. G. (1993). Toward mastery of Italian morphology: a cross-sectional study. *Journal of Child Language 20,* 377–93.

Caselli, M. C., Bates, C., Casadio, P., Fenson, L., Fenson, J., Sanderl, L. & Weir, J. (1995). A crosslinguistic study of early lexical development. *Cognitive Development 10*, 159–99.

Caselli, M. C., Vicari, S., Longobardi, E., Lami, L., Pizzoli, C., & Stella, G. (1998). Gestures and words in early development of children with Down syndrome. *Journal of Speech, Language, and Hearing Research, 41,* 1125–1135.

Caselli, M. C., Casadio, P. & Bates, E. (1999). A comparison of the transition from first words to grammar in English and Italian. *Journal of Child Language 26*, 69–111.

Caselli, M.C., Rinaldi, P., Sitefanini, S., Volterra, V. (2012). Early Action and Gesture ''Vocabulary'' and Its Relation With Word Comprehension and Production. *Child Development*, Vol. 83, 2, 526–542.

Choi, S. & Gopnik, A. (1995). Early acquisition of verbs in Korean: A cross-linguistic study. *Journal of Child Language, 22,* 497–529.

Conboy, B.T., & Thal, D.J. (2006). Ties between the lexicon and grammar: Cross-sectional and longitudinal studies of bilingual toddlers. *Child Development*, 77, 712–735.

Corkum, V. & Dunham, P. (1996). The Communicative Development Inventory–words short form as an index of language production. *Journal of Child Language* 23, 515–28.

Crowson, M., Lee, J., Neal, A.R., & Stella, J. 1997. *Correlates of nonverbal communication with language development and parental report in young children with autism. Poster presented at the Society for Research in Child Development.* Washington, D.C., April 2-6.

Dale, P. S., Bates, E., Reznick, J. S., & Morisset, C. (1989). The validity of a parent report instrument of child language at 20 months. *Journal of Child Language, 16,* 239–249.

Dale, P. S. (1991). The validity of a parent report measure of vocabulary and syntax at 24 months. *Journal of Speech and Hearing Research, 34,* 565–571.

Dale, P. S. (1996). Parent report assessment of language and communication. In K. N. Cole, P. S. Dale, & D. J. Thal (Eds.), *Assessment of communication and language* (pp. 161–182). Baltimore: Paul H. Brookes.

Dale, P. S. & Fenson, L. (1996). Lexical development norms for young children. *Behavior Research Methods, Instruments & Computers 28,* 125–27.

Dale, P. S., Dionne, G., Eley, T. C., & Plomin, R. (2000). Lexical and grammatical development: A behavioural genetic perspective. *Journal of Child Language, 27,* 619–642.

Dale, P. S., Price, T. S., Bishop, D. V. M., & Plomin, R. (2003). Outcomes of early language delay: II. Predicting transient and persistent language difficulties at 3 and 4 years. *Journal of Speech, Language, and Hearing Research, 46*, 544–560.

Dale, P. & Goodman, J. (2005). Commonality and individual differences in vocabulary growth. In M. Tomasello & D. I. Slobin (eds), Beyond nature–nurture. Essays in honor of Elizabeth Bates, 41–80. London: Lawrence Erlbaum Associates.

De Houwer, A., Bornstein, M. H. & Leach, D. B. (2005). Assessing early communicative ability : A cross-reporter cumulative score for the MacArthur CDI. *Journal of Child Language 32*, 735–58.

Devescovi, A., Caselli, M. C., Marchione, D., Pasqualetti, P., Reilly, J. & Bates, E. (2005). A crosslinguistic study of the relationship between grammar and lexical development. *Journal of Child Language* 32, 759–86.

Dollaghan, C. A., Campbell, T. F., Paradise, J. L., Feldman, H. M., Janosky, J. E., Pitcairn, D. N., & Kurs-Lasky, M. (1999). Maternal education and measures of early speech and language. *Journal of Speech, Language, and Hearing Research, 42*, 1432–1443.

Dunham, P. & Dunham, F. (1992). Lexical development during middle infancy: a mutually driven infant–caregiver process. *Developmental Psychology* 28, 414–20.

Ellis Weismer, S., & Evans, J. (2002). The role of processing limitations in early identification of specific language impairment. *Topics in Language Disorders, 22*, 15–29.

Ellis Weismer, S., Murray-Branch, J., & Miller, J. (1994). A prospective longitudinal study of language development in late talkers. *Journal of Speech and Hearing Research, 37,* 852 867.

Ellis Weismer, S., Tomblin, J. B., Zhang, X., Buckwalter, P., Chynoweth, J. G., & Jones, M. (2000). Nonword repetition performance in school-age children with and without language impairment. *Journal of Speech, Language, and Hearing Research, 43,* 865–878.

Eriksson, M., & Berglund, E. (1999). Swedish early communicative development inventories: Words and gestures. *First Language,* 19, 55–90.

Eriksson, M. (2001). Narratives validate communicative development inventories. *Applied Psycholinguistics* 22, 45–60.

Eriksson, M. & Berglund, E. (2002). *Instruments, scoring manual and percentile levels of the Swedish Early Communicative Development Inventories*, SECDI. FoU-rapport Nr. 17.

Eriksson, M., Westerlund, M., & Berglund, E. (2002). A screening version of the Swedish Communicative Development Inventories designed for use with 18-monthold children. *Journal of Speech, Language, and Hearing Research*, 45, 948–960.

Feldman, H. M., Holland, A. L., & Brown, R. E. (1992). A fluent language disorder following antepartum lefthemisphere brain injury. *Journal of Communication Disorders, 25*, 125–142.

Feldman, H. M., Dollaghan, C. A., Campbell, T. F., Colborn, D. K., Kurs-Lasky, M., Janosky, J. E., & Paradise, J. L. (1999). Parent-reported language and communication skills at ages 1 and 2 years in relation to otitis media in the first two years of life. *Pediatrics, 104*, e52.

Feldman, H. M., Dollaghan, C. A., Campbell, T. F., Kurs-Lasky, M., Janosky, J. E., & Paradise, J. L. (2000). Measurement properties of the MacArthur Communicative Development Inventories at ages 1 and 2 years. *Child Development, 71*, 310–322.

Feldman, H. M., Dollaghan, C. A., Campbell, T. F., Colborn, D. K., Kurs-Lasky, M., Paradise, J. L. & Dale, F. S. (2003). Parent-reported language skills in relation to otitis media during the first 3 years of life. *Journal of Speech, Language, and Hearing Research*, 46, 273-287.

Feldman, H. M., Dale, P. S., Campbell, T. F., Colborn, D. K., Kurs-Lasky, M., Rockette, H. E., et al. (2005). Concurrent and predictive validity of parent reports of child language at ages 2 and 3 years. *Child Development*, 76, 856–868.

Fenson, L., Thal, D. & Bates, E. (1990). *Normed values for the "Early Language Inventory" and three associated parent report forms for language assessment.* (Tech. Rep.). San Diego, San Diego State University.

Fenson, L. et al. (1992). *The MacArthur Communicative Development Inventory*: *Words and Gestures.* San Diego State University, California.

Fenson, L., Dale, P., Reznick, S., Thal, D., Bates, E., Hartung, J., Pethick, S. & Reilly, J. (1993). *MacArthur Communicative Development Inventories : user's guide and technical manual*. San Diego, Singular Publishing Group.

Fenson, L., Dale, P. S., Reznick, J. S., Bates, E., Thal, D. J. & Pethick, S. J. (1994). *Variability in early communicative development*. Monographs of the Society for Research in Child Development 59, 1–173.

Fenson, L., Bates, E., Dale, P., Goodman, J., Reznick, S., & Thal, D. (2000). Measuring variability in early child language: Don't shoot the messenger. *Child Development*, 71, 323–328.

Fenson, L., Pethick, S., Renda, C., Cox, J. L., Dale, P. S., & Reznick, J. S. (2000). Short-form versions of the MacArthur Communicative Development Inventories. *Applied Psycholinguistics*, 21, 95–115.

Fenson, L., Marchman, V. A., Thal, D. J., Dale, P. S., Reznick, J. S., & Bates, E. (2007). *MacArthur-Bates Communicative Development Inventories: User guide and technical manual* (2nd ed.). Baltimore: Brookes.

Foster-Cohen, S., Edgin, J. O., Champion, P. O., & Woodward, L. J., (2007). Early delayed language development in very preterm infants: Evidence from the MacArthur-Bates CDI. *Journal of Child Language*, Vol. 34-03; 655-675.

Furey . (2011). Production and Maternal Report of 16- and 18-Month-Olds' Vocabulary in Low- and Middle-Income Families. *American Journal of Speech-Language Pathology* Vol. 20; 38-46.

Galsworthy, M.J., Dionne, G., Dale, P.S., & Plomin, R. (2000). Sex differences in early verbal and non-verbal cognitive development. *Developmental Science*, 3, 206-215.

Gardner, M. (1981). *Expressive One Word Picture Vocabulary Test*. Novato, CA: Academic Therapy Publications.

Gelman, S.A. & Tardif. 1998. "Acquisition of nouns and verbs in Mandarin and English". In: E.V. Clark (Ed.), *Proceedings of the 29th Annual Stanford Child Language Research Forum* (27-36). Stanford, CA.

Goldfield, B. A. (1993). Noun bias in maternal speech to one-year-olds. *Journal of Child Language, 20*, 85–99.

Gopnik, A. & Choi, S. (1990). Do linguistic differences lead to cognitive differences? A cross linguistic study of semantic and cognitive development. *First Language, 10,* 199–215.

Gopnik, A. & Choi, S. (1995). Names, relational words, and cognitive development in English and Korean speakers: Nouns are not always learned before verbs. In M. Tomasello & W. E. Merriman (Eds), *Beyond names for things: Young children's acquisition of verbs*. Hillsdale, NJ: Erlbaum.

Grimm, H., Doil, H. (2000). Elternfragebogen fur die Frueherkennung von Risikokindern. ELFRA-1: Elternfragebogen fur einjaehrige Kinder: Sprache, Gesten, Feinmotorik. ELFRA-2: Elternfragebogen fur zweijaehrige Kinder: Sprache und Kommunikation. Goettinngen: Hogrefe Verlag

Hamilton, A., Plunkett, K., & Schafer, G. (2000). Infant vocabulary development assessed with a British communicative development inventory. *Journal of Child Language*, 27, 689–705.

Hart, B. (2004). What toddlers talk about. *First Language*, 24, 91–106.

Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children*. Baltimore: Paul H. Brookes.

Heilman, J., Ellis Weismer, S., Evans, J., & Hollar, C. (2005). Utility of the Macarthur–Bates Communicative Development Inventory in identifying language abilities of late-talking and typically developing toddlers. *American Journal of Speech- Language Pathology*, 14, 40–51.

Hoff-Ginsberg, E. (1991). Mother-child conversation in different social classes and communicative settings. *Child Development, 62,* 782-796.

Hoff-Ginsberg, E. (1992). How should frequency input be measured? *First Language, 12,* 233-244.

Hoff-Ginsberg, E. (1998). The relation of birth order and socioeconomic status to children's language experience and language development. *Applied Psycholinguistics* 19, 603–629.

Huttenlocher, J., Haight, W., Bryk, A., Seltzer, M., & Lyons, T. (1991). Early vocabulary growth: Relation to language input and gender. *Developmental Psychology, 27,* 236-244.

Huttenlocher, J. (1998). Language input and language growth. *Preventive Medicine, 27,* 195–199.

Huttenlocher, J., Levine, S. C., & Vevea, J. (1998). Environmental input and cognitive growth: A study using time period comparisons. *Child Development*, 69, 1012–1029.

Huttenlocher, J., Vasilyeva, M., Cymerman, E., & Levine, S. (2002). Language input at home and at school: Relation to child syntax. *Cognitive Psychology*, 45, 337–374.

Jackson-Maldonado, D., Thal, D., Marchman, V., Bates, E. & Gutierrez-Clennen, V. (1993). ”Early lexical development in Spanish-speaking infants and toddlers”. *Journal of Child Language*. 20, 523-549.

Jahn-Samilo, J., Goodman, J., Bates, E., & Sweet, M. (2000). Vocabulary learning in children from 8 to 30 months of age: A comparison of parental reports and laboratory measures. La Jolla: University of California, San Diego, Project in Cognitive Neurodevelopment, Center for Research in Language.

Kern, S. (2007). Lexicon development in French-speaking infants. First Language, 27(2), 191–212.

Kim, M., McGregor, K. K. & Thompson, C. K. (2000). Early lexical development in English- and Korean-speaking children : language-general and language-specific patterns. *Journal of Child Language*, 27, 225–54.

Klee, T., Carson, D. K., Gavin, W. J., Hall, L., Kent, A., & Reece, S. (1998). Concurrent and predictive validity of an early language screening program. *Journal of Speech, Language, and Hearing Research*, 41, 627–641.

Kovacevic, M., Jelaska, Z. & Brozovic, B. (1998). Comparing lexical and grammatical development in morphologically different languages. In A. Aksu-Koc, E. Erguvanli-

Taylan, A. Sumru Ozsoy & A. Kuntay (eds), *Perspectives on language acquisition*, 368–83. İstanbul: Bogaziçi University Printhouse.

Leaper, C. (2002). Parenting girls and boys. In M. H. Bornstein (Ed.), *Handbook of parenting*: *Vol. 1. Children and parenting* (2nd ed., pp.127–152). Mahwah, NJ: Erlbaum.

Lieven, E.V.M., Pine, J.M., & Baldwin, G. (1997). Lexicallybased learning and early grammatical development. *Journal of Child Language*, 24, 187–219.

Lyytinen, P. (1999) Varhaisen kommunikaation ja kielen kehityksen arviointimenetelmä (Finnish Manual for Communicative Development Inventories, MCDI). Jyväskylän yliopiston Lapsitutkimuskeskus ja Niilo Mäki Instituutti: Jyväskylä: Yliopistopaino.

Lyytinen, P., & Lyytinen, H. (2004). Growth and predictive relations of vocabulary and inflectional morphology in children with and without familial risk for dyslexia. *Applied Psycholinguistics,* 25, 397–411.

Lyytinen, P., Eklund, K., & Lyytinen, H. (2003). The play and language behavior of mothers with and without dyslexia and its association to their toddlers' language development. *Journal of Learning Disabilities, 36,* 74–86.

Maital, S. L., Dromi, E., Sagi, A. & Bornstein, M. H. (2000). The Hebrew Communicative Developmental Inventory: language specific properties and cross-linguistic generalizations. *Journal of Child Language* 27, 43–67.

MacWhinney, B. (1995). *The CHILDES project: Tools for analyzing talk* Hillsdale, NJ: Earlbaum.

MacWhinney, B. (2000). *The CHILDES project : Tools for analyzing talk*, 3rd Edition. Mahwah, NJ : Lawrence Erlbaum Associates.

Maital, S.L., Dromi, E., Sagi, A. & Bornstein, M.H. (1998). *The Hebrew CDI*: *Language Specific properties and cross-linguistic generalizations.*

Maital, S., Dromi, E., Sagi, A. & Bornstein, M. (2000). The Hebrew Communicative Development Inventory: Language-specific properties and cross-lingusitic generalisations. *Journal of Child Language*, 27, 43–68.

Mancilla-Martinez, J., Pan, B. A., Vagh, S.B. (2011). Assessing the productive vocabulary of Spanish-English bilingual toddlers from low-income families. *Applied Psycholinguistics* 32, 333-357.

Marchman, V. A., & Bates, E. (1994). Continuity in lexical and morphological development: A test of the critical mass hypothesis. *Journal of Child Language, 21,* 339–366.

Marchman, V. & Martınez-Sussmann, C. (2002). Concurrent validity of caregiver/parent report measures of language for children who are learning both English and Spanish. *Journal of Speech, Language, and Hearing Research*, 45, 983–97.

Marchman, V. A., Martinez-Sussman, C., & Dale, P. S. (2004). The language-specific nature of grammatical development: Evidence from bilingual language learners. *Developmental Science, 7,* 212.

Marchman, V.A., & Fernald, A. (2008). Speed of word recognition and vocabulary knowledge in infancy predict cognitive and language outcomes in later childhood. *Developmental Science, 11,* F9–F16.

Mayne, A.M. (1998). Expressive vocabulary development of infants and toddlers who are deaf or hard of hearing. *Volta Review,* 100, 1-12.

Mayne, A.M. (1998). Receptive vocabulary development of infants and toddlers who are deaf or hard of hearing. *Volta Review,* 100, 29-62.

MacWhinney, B. (2000). *The CHILDES project: tools for analyzing talk*. Mahwah, NJ: Erlbaum.

Miller, J. F., Sedey, A. L., & Miolo, G. (1995). Validity of parent report measures of vocabulary development for children with Down syndrome. *Journal of Speech and Hearing Research, 38,* 1037–1044.

Naigles, L. (1996). The use of multiple frames in verb learning via syntactic bootstrapping. *Cognition,* 58, 221–251.

Naigles, L., & Hoff-Ginsberg, E. (1998). Why are some verbs learned before other verbs? Effects of input frequency and structure on children's early verb use. *Journal of Child Language, 25,* 95–120.

Naigles, L., & Mayeux, L. (2000). Television as incidental language teacher. In *D. Singer & J. Singer (Eds.), Handbook of children and the media* (pp. 135–152). Thousand Oaks, CA: Sage.

Naigles, L., Singer, D., Singer, J., Jean-Louis, B., Sells, D., & Rosen, C. (1995). *Barney says, ‘‘come, go, think, know’’: Television reveals a role for input in later language acquisition.* Hartford: Connecticut Public Broadcasting.

Oliver, B., Dale, P. S., Saudino, K. J., Petrill, S. A., Pike, A., & Plomin, R. (2002). The validity of a parentbased assessment of the nonverbal cognitive abilities of three-year-olds. *Early Child Development and Care, 172,* 337–348.

Oliver, B., Dale, P. S., & Plomin, R. (2004). Verbal and nonverbal predictors of early language problems: An analysis of twins in early childhood back to infancy. *Journal of Child Language,* 31, 609–631.

Ogura, T., Yamashita, Y., Murase, T. & Dale, P.S. (1993). Some findings from the Japanese Early Communicative Development Inventories. *Memoirs of the Faculty of Education*, Shimane University, 27, 26-38. (In English).

O’Neill, D. K. (2007). The language use inventory for young children: A parent-report measure of pragmatic language development for 18- to 47-month-old children. *Journal of Speech, Language, and Hearing Research,* 50, 214–228.

Pae, S. (2003). Validity and reliability of the Korean adaptation of MCDI. *Korean Journal of Communication Disorders*, 8 (2), 1-14.

Pan, B. A., Rowe, M. L., Spier, E., & Tamis-Lemonda, C. (2004). Measuring productive vocabulary of toddlers in low income families: Concurrent and predictive validity of three sources of data. *Journal of Child Language*, 31, 587–608.

Pan, B. A., (2010). Assessing Vocabulary Skills. In *Erika Hoff (Ed.), Guide to Research Methods in Child Language,* Wiley-Blackwell Publishers.

Perez-Pereira, M., Resches, M., (2011). Concurrent and predictive validity of the Galician CDI. *Journal of Child Language*. 38, 121-140.

Pine, J. M. (1992). How referential are "referential" children? Relationships between maternalreport and observational measures of vocabulary composition and usage. *Journal of Child Language, 19*, 75–86.

Pine, J. M., Lieven, E. V. M. & Rowland, C. (1996). Observational and checklist measures of vocabulary composition: What do they mean? *Journal of Child Language, 23*, 573–589.

Reese, E. & Read, S. (2000). "Predictive validity of the New Zealand MacArtur Communicative Development Inventory: Words and sentences". *Journal of Child Language,* 27(2), 255-266.

Rescorla, L., Hadicke-Wiley, M., & Escarce, E. (1993). Epidemiological investigation of expressive language delay at age two. *First Language*, 13, 5–23.

Rescorla, L., Dahlsgaard, K., & Roberts, J. (2000). Late-talking toddlers: MLU and IPSyn outcomes at 3;0 and 4;0. *Journal of Child Language*, 27, 643–664.

Rescorla, L., & Lee, E. C. (2000). Language impairments in young children. In *T. Layton & L. Watson (Eds.), Handbook of early language impairment in children:* Vol. 1. Nature (pp. 1–38). New York: Delmar.

Rescorla, L., & Alley, A. (2001). Validation of the Language Development Survey (LDS): A parent report tool for identifying language delay in toddlers. *Journal of Speech, Language, and Hearing Research*, 44, 434–445.

Rescorla, L., Alley, A., & Christine, J. B. (2001). Word frequencies in toddlers' lexicons. *Journal of Speech, Language, and Hearing Research*, 44, 598–609.

Rescorla, L., & Achenbach, T. M. (2002). Use of the Language Development Survey (LDS) in a national probability sample of children 18 to 35 months old. *Journal of Speech, Language, and Hearing Research,* 45, 733–743.

Rescorla, L., Bernstein Ratner, N., Jusczyk, P.,& Jusczyk, A. M. (2005). Concurrent validity of the language development survey: Associations with the MacArthur-Bates Communicative Development Inventories: Words and sentences. *American Journal of Speech-Language Pathology,* 14, 156–163.

Ring, E.D. & Fenson, L. (2000). Assessment of language comprehension and production: Child performance versus parent judgment. *First Language, 20,* 141-159.

Robinson, B. F. & Mervis, C. B. (1999). Comparing productive vocabulary measures from the CDI and a systematic diary study. *Journal of Child Language, 26*, 177–185.

Roberts, J.E., Burchinal, M., & Durham, M. (1999). Parents report of vocabulary and grammatical development of African American preschoolers: Child and environmental associations. *Child Development,* 70, 92–106.

Saudino, K. J., Dale, P. S., Oliver, B., Petrill, S. A., Richardson, V., Rutter, M., Simonoff, E., Stevenson, J. & Plomin, R. (1998). The validity of parent-based assessment of the cognitive abilities of 2-year-olds. *British Journal of Developmental Psychology* 16, 349-363.

Scarborough, H. S. (1990). Index of productive syntax. *Applied Psycholinguistics*, 11, 1-22.

Silva, P. A.,Williams, S. M., & McGee, R. (1987). A longitudinal study of children with developmental language delays at age three: Later intelligence, reading and behavior problems. *Developmental Medicine and Child Neurology,* 29, 630–640.

Snow, C. E. (1999). Social perspectives on the emergence of language. In *B. MacWhinney (Ed.), The emergence of language* (pp. 257–276). Mahway, NJ: Erlbaum.

Stromswold, K. (2001). The heritability of language: A review and metaanalysis of twin, adoption and linkage studies. *Language,* 77, 647–723.

Tardif, T. (1996). Nouns are not always learned before verbs : Evidence from Mandarin speakers' early vocabularies. *Developmental Psychology* 32, 492–504.

Tardif, T., Shatz, M. & Naigles, L. (1997). Caregiver speech and children's use of nouns versus verbs : A comparison of English, Italian, and Mandarin. *Journal of Child Language 24,* 535–65.

Tardif, T., Gelman, S. A. & Xu, F. (1999). Putting the 'noun bias' in context : A comparison of Mandarin and English. *Child Development 70,* 620–35.

Tardif, T., Fletcher, P., & Liang, W. (2004). First words in English and Chinese: Results from norming studies of the MacArthur Communicative Development Inventories. *International Journal of Psychology*, 39, 515–515.

Tardif, T. (2006). But are they really verbs? Chinese words for action. In *K. Hirsh-Pasek & R. M. Golinkoff (eds), Action meets word: How children learn verbs,* 477–98. New York: Oxford University Press.

Tardif, T., Fletcher, P., & Liang, W. & Kaciroti, N. (2009). Early vocabulary development in Mandarin (Putonghua) and Cantonese. *Journal of Child Language*. Vol 36-05; 1115-1144.

Thal, D., Tobias, S., & Morrison, D. (1991). Language and gesture in late talkers: A 1-year follow-up. *Journal of Speech and Hearing Research, 34,* 604–612.

Thal, D., Bates, E., Goodman, J., & Jahn-Samilo, J. (1997). Continuity of language abilities: An exploratory study of late- and early-talking toddlers. *Developmental Neuropsychology, 13,* 239–273.

Thal, D. J., O'Hanlon, L., Clemmons, M., & Fralin, L. (1999). Validity of a parent report measure of vocabulary and syntax for preschool children with language impairment. *Journal of Speech, Language, and Hearing Research, 42,* 482–496.

Thal, D., Jackson-Maldonado, D., & Acosta, D. (2000). Validity of a parent-report measure of vocabulary and grammar for Spanish-speaking toddlers. *Journal of Speech, Language, & Hearing Research, 43,* 1087 -1100.

Thordardottir, E. T. & Ellis Weismer, S. (1996). Language assessment via parent report: development of a screening instrument for Icelandic children. *First Language 16,* 265–85.

Tomasello, M. (1992). *First verbs: A case study of early grammatical development.* Cambridge, England: Cambridge University Press.

Toole, C. O., and Fletcher, P. (2010). Validity of a Parent Report Instrument for Irish-speaking Toddlers. *First Language* 30:2 199-217.

Weizman, Z.O., & Snow, C.E. (2001). Lexical input as related to children's vocabulary acquisition: Effects of sophisticated exposure and support for meaning. *Developmental Psychology,* 37, 265-279.

Whitehurst, G. J., & Fischel, J. E. (1994). Early developmental language delay: What, if anything, should the clinician do about it? *Journal of Child Psychology and Psychiatry, 35,* 613–648.

Whitehurst, G. J., Fischel, J. E., Lonigan, C. J., Valdez-Menchaca, M. C., Arnold, D. S., & Smith, M. (1991). Treatment of early expressive language delay: If, when, and how. *Topics in Language Disorders, 11,* 55–68.

Wu, Jiang (1997). Language, play and general development for Chinese infant-toddlers: Using adapted assessments. Unpublished doctoral dissertation, University of Colorado, Boulder.

Yoder, P. J., Warren, S. F., & Biggar, H. A. (1997). Stability of maternal reports of lexical comprehension in very young children with developmental delays. *American Journal of Speech-Language Pathology,* 6(1), 59–64.