Dynamic Assessment of the narrative ability in a group of South African preschool children

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Master Thesis in Speech and Language Pathology
Autumn 2011
Nr 048

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ABSTRACT

Standardized tests are generally based on the norms of the majority population who share the same culture, language and above all, similar prior learning experiences. Because of this, it is problematic for clinicians to use standardized tests when assessing children from culturally and linguistically diverse (CLD) backgrounds. Dynamic assessment (DA) is an alternative assessment method that can circumvent the dilemma of biased testing of children from CLD populations. By looking at the child’s modifiability instead of static performance DA aims to target the child’s true language ability. In this study the researchers investigated the difference between narratives produced before and after a dynamic assessment procedure called a test-teach-retest method. 16 South African preschool children were assessed in one session with a wordless picture sequence and then the test-teach-retest format was implemented. Each child was asked to tell the story in the pictures, followed by a dynamic assessment phase (focused questions), and finally a second elicitation of the narrative. No time elapsed between the tests and the teaching phase. Significant differences were found between the narratives elicited before and after the focused questions, but not for all measures. The use of mental state terms (what characters feel and think) increased from the first to the second narrative as well as some of the microstructural elements (linguistic structures) and macrostructural elements (global organization of the story). These results indicate that the use of narrative language in the field of DA has the potential of reducing bias when assessing children’s narrative ability in culturally and linguistically diverse populations.

Keywords: dynamic assessment, culturally and linguistically diverse backgrounds (CLD), biased testing, narratives
SAMMANFATTNING

Standardiserade test är främst baserade på normer som hämtats från studier av majoritetsbefolkningen i ett land. En befolkning delar ofta samma kultur och de är ofta enspråkiga, men framförallt delar de liknande upplevelser. På grund av detta är det mycket svårt för kliniker att använda standardiserade test på barn med flerspråkig bakgrund. Dynamic assessment (DA) är en alternativ och dynamisk bedömningsmetod som kan förhindra att språklig testning av mångkulturella barn blir partisk. DA är ett tillvägagångssätt som fokuserar på barns sätt att ta sig an språk medan traditionella mått främst används för att statiskt kvantifiera prestation.

Den här uppsatsen syftar till att undersöka om det finns en skillnad i barns sätt att berätta en saga före och efter intervention med dynamisk bedömningsmetod. 16 sydafrikanska förskolebarn testades, varje barn fick vid ett tillfälle berätta två historier till samma bildsekvens. Mellan de två berättelserna ställde forskarna riktade frågor om innehållet, dessa riktade frågor motsvarar det dynamiska inslaget i bedömningen. Signifikanta resultat hittades, men inte för alla mätvärden. Signifikant var den ökade användningen av mental state terms (vad karaktärerna i en berättelse känner och tänker), samt ökningen av vissa mått på mikro- (lingvistisk struktur) och makrostruktur (övergripande organisering av berättelsen). Detta resultat tyder på att användningen av en dynamisk bedömningsmetod kan ge kliniker ett instrument som är opartiskt vid bedömning av mångkulturella barns berättarförmåga.

Nyckelord: dynamisk bedömningsmetod, flerspråkighet, partisk testning, berättelser
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1 Introduction

Standardized tests to assess children’s language ability have been developed mainly to suit the norms of the majority population who share the same culture and language, and, above all, similar prior learning experiences. Clinicians who use standardized and norm-referenced tests when assessing children from culturally and linguistically diverse (CLD) backgrounds are therefore faced with the fact that tests and assessment procedures may be culturally and linguistically biased (Laing & Kamhi, 2003). Previous research has indicated that the use of Dynamic Assessment (DA) in narratives is effective in distinguishing typical developing children from children with language impairment. Results also indicated that the use of DA in narratives can help identify language disorders in CLD children (Peña, Gillam, Malek, Ruiz-Felter, Resendiz, Fiestas & Sabel, 2006).

The aim of the current study was to determine the differences between the narratives produced in a group of typically developing South African children before and after a dynamic assessment procedure.

1.1 Dynamic assessment

1.1.1 The origin of Dynamic Assessment

Dynamic assessment (DA) is currently a promising alternative assessment that can circumvent the dilemma of biased testing of children from CLD backgrounds. DA is described as a process-oriented approach to evaluation that looks at children's responses rather than traditional assessment measures that examine product-oriented and static performance. DA gives the examiner a description of the child-as-learner in terms of how the child approaches a task, the patterns of errors made and the ability to self-correct. These parameters also provide the examiner with information about the child's modifiability; in other words, to which extent the child changes in response to intervention (Ukrainetz, A., Harpell S., Walsh C., Coyle C. 2000).

DA as a concept originates from Vygotsky (1978) and Feuerstein (1979). In Vygotsky’s model of cognitive development, children’s learning takes place in the zone of proximal development (ZPD) during social interaction. The ZPD is based on the premise that a child’s unassisted performance during a task can be enhanced when given guided assistance by an adult. Feuerstein’s theory of mediated learning experiences (MLE) consists of a formal
educational process where an adult tries to enhance the child's performance. According to Feuerstein, the meditational interactions promoted a higher mental functioning in a child, i.e. active learning, self-regulation, representational thinking and strategic problem-solving. Feuerstein’s list of meditational interactions and his conceptualization of MLE was further investigated by Lidz (2002). The investigations of MLE lead Lidz to develop the MLE Rating Scale (MLERS), a rating scale consisting of 12 interactions that seem to promote higher mental functioning. The rating scale was mainly created to evaluate if MLE exists within the learners repertory. Furthermore, Lidz demonstrated that dynamic assessment and MLE can be combined because learning mediation is always embedded within DA, as the method aims to analyze the effect the teaching phase has on the learner.

1.1.2 The test-teach-retest method

The DA method, test-teach-retest, is inspired by both Vygotsky's and Feuerstein's theories. First a baseline score is established with a test. The examiner then introduces a teaching phase or mediated learning experience. Following mediation, the examiner retests the examinee to measure the amount of learning that has occurred. If a child shows high scores at posttest the lower initial score performance is likely a result of bias due to cultural or prior experiential differences or a lack of interest or attention in the task. However, if the child shows low scores at pretest and a small amount of learning progress on post-testing, Peña et al (2006) suggests that the child is likely to have language learning problems. It can also be due to the fact that the child has general learning problems or perhaps attention deficit problems. According to Ukranietz et al (2000), DA seems to be a powerful tool to differentiate between weaker and stronger language-learners. Furthermore, some researchers suggest that the test-teach-retest approach is effective for assessment and identification of language disorders in CLD children (Gillam, Peña, & Miller, 1999). In this study the test-teach-retest is all done in one session, other studies (Peña et al, 2006) let time elapse between pre- and posttest.

1.1.3 The application of DA to narrative language

Children are expected to arrive at school with sufficient practice in narration and explanation (Gillam, Peña and Miller, 1999). However, CLD children may not have had the same learning experience as their fellow classmates. Dynamic assessment of language can help to distinguish children with typical development (TD) from their peers with language impairment (LI) or learning disabilities (Peña et al, 2006; Gillam, Peña, & Miller, 1999). According to Peña et al (2006) “the application of dynamic assessment to narrative language
… provides information about the child’s thought processes, emerging skills and learning potentials”. Dynamic assessment of narrative ability can provide an assessment tool with the potential of being culturally and experientially unbiased.

1.2 Narratives

1.2.1 Children’s narrative language

Attainment of literacy is necessary for participation, independency as well as academic success. Two types of discourse, exposition and narration, are among others crucial for literacy learning (Gillam, Peña and Miller, 1999). Expository and narrative discourse requires the speaker to engage in higher order planning, in other words, to organize, verbalize and structure coherent sequences of events to the listener. According to Hadley and Nippold et al., expository discourse consists of conveying factual or textual information such as descriptions, directions and explanations (Hadley, 1998; Nippold et al., 2005 as cited in Engelbrecht, 2011, p. 9). Narrative discourse forms a natural part of school-age children’s daily communication, for example, telling or retelling stories, reading stories, telling personal experiences and writing fictional stories (Engelbrecht, 2011). As children grow, most of them will develop this skill and they will move from simple non-goal sequences, where the goal is not spelled out explicitly, toward coherent episode structures containing a goal, attempt and an outcome (Soodla & Kikas, 2010). With this in mind it is not surprising that narratives have been found to be a good indicator of language development, that is, in distinguishing typically developed children (TD) from their peers with language impairment (LI) (Engelbrecht, 2011; Botting, 2002). Furthermore, these studies by Engelbrecht (2011) and Botting (2002) have concluded that children with LI produce poorer narratives compared to TD children during story retelling and story generation tasks. The narratives of the children with LI where shorter in length, contained fewer story grammar components and episodes, reduced sentence complexity as well as fewer complete cohesive ties. In fact, most standardized language tests only assess children’s knowledge of isolated language rules, rather than integrated communicative functioning that are often seen in narratives (Engelbrecht, 2011). Narratives can for instance tell if the child takes the listener into account, i.e. shows theory of mind.

1.2.2 Cultural and Socio-Economics aspects of narratives

Children from diverse backgrounds may perform lower on formal language tests because they are not familiar with the content or expectations of the test (Laing & Kamhi, 2003). Also, the tests may be standardized on another population which makes it difficult for the child to make
use of his or her own experiences. Children from diverse cultures or low socio-economic backgrounds might have different previous knowledge or experiences. Some may for instance not be familiar to a story task of “going to a restaurant”; therefore they will struggle when asked to tell a story about this specific activity. Similarly, narratives that are elicited with pictures or books will be affected by the child’s previous literacy experiences. Consequently, it can be very difficult to distinguish if a child’s narrative deficit is a result of cultural differences, lack of experience or language impairment, especially if the child comes from non-mainstream cultures or lower socio-economic backgrounds (Gutierrez-Clellen & Quinn, 1993).

Hart & Risley’s study (1995) became one of the most significant studies of how the home environment affects a child’s language and literacy development. Children from three different socioeconomic status (SES) levels were observed from infancy to age 3. A higher expressive language and literacy skill was found to be strongly associated with higher SES. When entering kindergarten the children from low SES had a receptive vocabulary of 3000 words compared to 20 000 words for the children from middle-income families. Children with high SES received more direct language input which resulted in this substantial difference of vocabulary. Hart & Risley also found that the quality of parent’s verbal interactions with their children was a significant predictor of language skills in all the three different SES groups (Hart & Risley, 1995, as cited in Stone, Silliman, Ehren & Appel, 2004, pp. 160).

1.2.3 Narratives in a multilingual setting

The language patterns of children living in a multilingual context can be quite complex. A multicultural society may use a variety of language codes that are distinct from the ones used in the majority language (Strömqvist & Verhoeven, 2001). However, in the process of narrative development, both monolingual and multilingual children must learn that linguistic forms are multifunctional. To better understand what is involved in the concept of “narrative development”, research suggests to distinguish between the general cognitive foundations of narrative text production and the ability to make appropriate use of linguistic devices in the verbal expression of this ability (according to Berman, 2001 as cited in Strömqvist & Verhoeven, 2001). The general cognitive foundation refers to the internalized narrative schema that underlies the ability to understand, to recall, and to produce different types of stories such as personal anecdotes, past experiences, imaginary tales, fairy stories, adventure stories, and so on. The second type of knowledge involves the ability to make use of linguistic devices like
bound morphology, closed class grammatical items, lexical expressions, and syntactic constructions (according to Berman, 2001, as cited in Strömqvist & Verhoeven, 2001). Furthermore, studies have shown that children of bilingual and monolingual backgrounds rely on similar strategies for global discourse production in terms of conceptualization, planning, and organization of their narrations. By the age of five, most children are proficient in combining clauses and they can also master a great deal of complex syntax, and construct a sequentially well-organized narrative as well as express different perspectives on events (according to Berman, 2001, as cited in Strömqvist & Verhoeven, 2001).

Furthermore, Berman (as cited in Strömqvist & Verhoeven, 2001) summarizes the conclusions that can be drawn from studies of narrative construction in a multilingual context. The main finding is that children from different linguistic and socio-cultural backgrounds share similar cognitive, conceptual, and developmental abilities regarding narrative competence. However, these children differ in the understanding of linguistic expression required for storytelling performance. Multilingual children may experience a higher cognitive load as well as a linguistic difficulty caused by the different contexts and types of discourse which may differ between the majority language and the child’s native language and culture.

1.2.4 Establishing norms and clinical use of narratives

Narrative assessment enables analysis of a number of language aspects, such as grammatical measurements, fluency, story structure and pragmatics (Botting, 2002). Regarding narrative norms the main problem for clinicians and researchers is the difficulty to rely on existing normative data (Engelbrecht, 2011). The norms may have been influenced by several methodological factors, such as age, geographic location as well as the socio-economic status, cultural or language skill of the selected population. Norms may also be influenced by the different methods used to elicit the narrative (e.g. wordless picture books, single pictures or videos). Consequently, there is a need for the development of narrative protocols and norms that can be used in a multi-cultural and multi-lingual context.

1.3 Analyses of narrative data

There are many ways to analyse narrative data. In the present study the narrative data has been analysed and scored in terms of microstructure, macrostructure and mental state language. When analyzing narratives, the use of microstructure provides the opportunity to investigate the linguistic structures of narratives, in contrast, the macrostructure analyses the
global organization of the story (Justice, Bowles, Kaderavek, Ukrainetz, Eisenberg & Gillam., 2006). Furthermore, mental state language has been found to be a good indicator of children’s theory of mind as it shows how children make use of abstract and cognitively demanding information of the characters in a story (Engelbrecht, 2011).

1.3.1 Microstructural analysis
Microstructure analyses and focuses on children’s internal linguistic structures of narratives (Justice et al., 2006). The present study focuses on language productivity, syntactic complexity and lexical diversity measures (Microstructural analyses, see Appendix 8).

Productivity refers to the length or amount of language output in a communication sample (Justice et al., 2006). Productivity often includes measures of total number of words (TNW) and total number of terminal units (T-units). A T-unit comprises a main clause with all its associated subordinate clauses and phrases (Owens, 2004). Simple sentences, e.g. The children played outside comprise one T-unit. A compound sentence comprises two or more clauses that are conjoined, e.g. The children played outside while their mother made supper. Regarding syntactic complexity, the measurement of mean length of T-units illustrates how the child manages sensitive language structures. Finally, lexical diversity is often measured by the number of different words (NDW). The NDW is a good language indicator that reflects the child’s differences in vocabulary use (Engelbrecht, 2011).

1.3.2 Macrostructural analysis
As mentioned above, macrostructure mainly focuses on story grammar and story conventions, i.e. the global organization of narratives. Macrostructural analysis of narrative ability has proved to be a sensitive measure in classifying traditionally developing children from those with language impairment (Peña et al, 2006). The main focus is on story grammar components and the complexity of episode structure. Several types of story grammar analysis systems are available; the problem is that they tend to be considerably more time-consuming than standardized tests. Consequently, a more holistic approach has been used for clinical purposes, Applebee (1978), Botvin and Sutton-Smith (1977) and Stein and Glenn (1979) proposed hierarchies of story structures that are logically organized from the least to the most complex (Westby, 2005). In 1984 and 1986 Westby and her colleagues decided to modify the Glenn and Stein system by including the information from Applebee and Botvin and Stutton-Smith (Westby, 2005). This resulted in a modified structural hierarchy called a Binary Decision
Tree, or often referred to as the Story Grammar Decision Tree (Macrostructural analyses and the Westby Decision Tree, see Appendix 9).

A narrative can consist of several episodes. In the present study the elicited narrative contained three characters that each had a goal, attempt and outcome (three complete GAO), i.e. potential for three full episodes in one narrative. According to Westby (2005), the analysis of narrative level is done by first reading the child’s story and then the examiner follows the binary decision tree by asking oneself questions about the story components. The first three questions are used to identify whether the child’s narrative is on a sequence level or at a higher story grammar level. A sequence is various events that are simply strung together, there is no clear expression of the goal of an action; it may only contain an attempt or a character’s outcome. However, if the child’s narrative includes planning or intentional behavior the narrative is an abbreviated episode. This means that the goal is clear but the attempt or the outcome, sometimes both, are missing. Finally, if the child manages to produce an elaborated story the narrative will be a complete episode in which the goal, attempt and outcome are clearly uttered.

Finally, the work of Berman and Slobin (1994) suggests that linguistic differences influence the narratives microstructure (productivity, syntactic complexity and lexical diversity), while cultural differences mainly influence the narratives macrostructure (global organization of the story) (Engelbrecht, 2011). In conclusion, narrative analyses of both macrostructure and microstructure levels are needed to obtain holistic and valid descriptions of the child’s narrative production (Justice et al., 2006).

1.3.3 Mental states

There are several aspects of mental state terms; there are for instance depicted emotions (the picture reveals the feeling) versus inferred non-depicted emotions and thoughts (the feeling is not visible but inferred from an understanding of the story). According to Benson (1997), mental states is a term often used to refer to that which is not observable about a character (real or imaginary), and it generally refers to a feeling. It has been suggested that the capacity to assign mental states to self and to others emerges with the onset of communicative intentions. Narrative research has been done to investigate when children actually begin to describe characters as having thoughts, beliefs, feelings, hopes, goals, intentions, and plans that frame and motivate their goal-directed activity. Researchers broadly agree that children do not tend to describe characters with mental state language until 8 or 9 years of age (Bamberg &
Narratives can exist on two levels, first is the landscape of action which refers to what characters in a narrative do, secondly there is the landscape of consciousness which refers to what characters feel and think. It is when combining these two levels that the narrator gets a well-made narrative (Nicolopoulou, & Richner, 2007). One of the reasons mental states have received intensive empirical examination is because of their relevance to investigations of children's 'theory of mind'. Terms such as know, think and remember make direct reference to cognitive states and, as such, can provide empirical evidence of a child's awareness of internal states as distinct from physical objects (Furrow, D., Moore, C., Davidge, J., & Chiasson, L. 1992). When the narrator reflects on the protagonist’s internal responses to events and actions, the use of mental state language can provide a deeper 'meaning' to the story. In order to do this, the narrator has to have sufficient theory of mind to be able to reflect and understand that the actions of the characters in the story are motivated by internal states which are typically not observable (Frazier-Norbury and Bishop, 2003).

Some may argue that perceptions such as see and hungry or metalinguistic acts like whisper or shout can be observable from the pictures, whereas emotional states like happy or metacognitive acts like desire require more inference of the characters mental state. According to Frazier-Norbury and Bishop (2003) these later types of activities are therefore more indicative of true theory of mind understanding.

Mental state language can be divided into several categories. In this study the following categories where used: perception physiology, emotional states, metalinguistic, metacognitive and other abstractions and evaluations (Mental state language, see Appendix 6).

1.4 The global increase of bilingualism

The growth in bilingualism internationally, due to continued globalization and population movement, as well as increased official recognition of indigenous languages, has resulted in a corresponding increase in the number of bilingual and multilingual children in the caseloads of speech-language therapists (Jordaan, 2008, p 97).

This is problematic as clinicians only have limited diagnostic instruments to distinguish bilingual children with language impairment (biSLI) from those who will eventually catch up with their monolingual peers. An international survey investigated the speech language therapists (SLT) intervention methods for assessment of bilingual children (Jordaan, 2008). Through a questionnaire information was gathered from 99 SLT's from 13 countries concerning 157 bi-
lingual children. The results showed that few SLT’s provided bilingual therapy, only 13% of the children were given bilingual therapy. One of the reasons is that high percentages, about 74%, of the SLT’s are monolingual. Questions have been raised regarding the requirements of entering the SLT training programs. As a result, it has been suggested that the SLT’s should be proficient in more than one language. Lack of assessment material for bilingual children also makes it hard to showcase reliable intervention results.

1.5 COST Action IS0804
The assessment material that was used in this study was developed by COST, the European Cooperation in Science and Technology. COST is an intergovernmental framework that allows the coordination of international research regarding bilingual children’s linguistic and cognitive abilities. COST consists of European countries as well as some non-European countries, such as South Africa. One part of the organization is the Action IS0804; Language Impairment in a Multilingual Society: Linguistic Patterns and the Road to Assessment. Second language learners often produce language patterns resembling those of children with Specific Language Impairment (SLI). This leads to methodological and clinical confusion, which Action IS0804 aims to resolve, in order to improve language assessment of minority language children.

The working group 2 (WG2) of this specific action focuses on narrative and discourse (Gagarina, Klop, Kunnari, Tantele & Balciuniene; 2011). Since children with SLI often struggle with telling a story, WG2 has developed story-telling and retelling tasks elicited with picture sequences that are especially suited for the assessment of these children from linguistically and diverse backgrounds. The picture sequences have been designed to be appropriate cross-culturally and include both story grammar components (goal, attempt, outcome) and linguistic features (productivity, lexical diversity, syntactic complexity measures). The assessment material used in this study, developed by WG2, consisted of one protocol (Assessment protocol, see Appendix 4) and a wordless picture sequence (Wordless picture sequence, see Appendix 5).

1.6 Earlier studies
In this chapter four studies are discussed. The first ones by Vernon-Feagan (1996) and Feagan & Huskin (1986) present the cultural aspect of narratives. Then the study by Berman & Slobin (1994) presents a more linguistic point of view. Finally, the study by Peña et al. (2006) has a more holistic point of view of narratives.
A study by Vernon-Feagan (1996) and Feagan & Huskin (1986) in urban Kansas City and the rural Piedemont area in North Carolina, USA, showed that African American children from this area with low socio-economic status (LOW-SES) had better oral narrative skills and vocabulary, compared to middle class Caucasian children. The data was collected in a naturalistic manner, at the children’s kindergarten. The results showed that the boys from LOW-SES produced both greater number of narratives and greater number of words in the narratives, compared to the African American girls from LOW-SES and the middle-class Caucasian children. A fascinating fact related to this study is that the African American children produced more complex and imaginative narratives. When narratives were produced older children intervened and helped to create more complex elements. i.e. in a context of joint storytelling. The Caucasian children were more likely to tell a story without this cooperation and focus on a story they been told or talk about a personal event (Vernon-Feagan, 1996; Feagan & Huskin, 1986 as cited in Vernon-Feagans, L., Scheffner Hammer, C., Miccio, A. & Manlove, E., 2002, pp.195).

For a linguistic point of view on narratives, Relating events to narratives by Berman and Slobin (1994) was a ground-breaking volume. The study showed different linguistic ways of relating events and ways to include various means of narrative encoding. The basis for this research was the re-telling of the so called Frog story (Mayer, 1969); a series of pictures representing a number of dynamic interactions between animate beings over time and in different physical settings. The study assessed children of different ages and who spoke various languages. In this cross-linguistic study of narrative development, filtering and packaging were taken to be the guiding principles. The filtering principle holds that experiences are filtered into verbalized events via the choice of perspective taken on the experience and the set of linguistic operations. The packaging principle holds that a narrative does not involve a linear chain of successive events but a hierarchical set of events located in time and space.

One of the most recent studies about dynamic assessment and narrative ability was conducted by Peña, Gillam, Malek, Ruiz-Felter, Resendiz, Fiestas and Sabel in 2006. They carried out two experiments where narrative ability was assessed at a micro- and macrostructural level. The first experiment aimed to find out if two different wordless picture books used to elicit oral narratives from typically developed (TD) children were reliable, i.e. gave equivalent
measures. The participants were 58 (TD) 1st and 2nd grade children from schools in central Texas. The experiment consisted of eliciting two stories from each participant. The stories were analyzed and rated according to the content as well as the linguistic form, i.e. the macro- and microstructural level of the story. Then, each narrative received a total story score. Reliability analyses of the ratings indicated equivalent total story scores for the different narratives. Consequently, the experiment supported the use of the two wordless picture books when eliciting narratives from children in a pre- and posttest design.

The second experiment had two aims: First, the accurateness of using a dynamic assessment method to assess children’s narratives. Second, to evaluate the responses to the mediated learning experience (MLE), i.e. changes in story scores after mediation, by children with and without language impairment (LI), compared to a control group. The participants were 71 children from 1st and 2nd grade from schools in central Texas or southern California. The two treatment groups were composed of children with LI and TD. The control group was a non-treatment group made up of children from experiment one. The children in the treatment groups received two MLE sessions which aimed to increase the length and complexity of the children’s narratives by teaching them e.g. about story grammar. These sessions were the dynamic assessment of the study. The examiner rated the participant’s modifiability. Next, the study compared the amount of change between pretest and posttest narratives of the two treatment groups and the control group. The results showed that the treatment group with TD children had the greatest amount of change at post-testing. In addition, the examiners ratings of modifiability turned out to be the single best predictor of language impairment and together with posttest measures no misclassification of language impairment was yielded.

1.7 The South African context
The present study has been carried out in South Africa, through an exchange programme between Stellenbosch University, South Africa and Uppsala University, Sweden. The researchers of this study were two Swedish undergraduate speech therapy students. The assessment material used in this study, a protocol and a wordless picture sequence, was developed by Working Group 2 of COST Action IS0804. Below follows an introduction of factors that the researchers believe are important to consider for a better understanding of the South African context.
1.7.1 *Literacy in South Africa*

That fact that South Africa still has much poverty and inequality affects the educational system. Because of this many South African children are deprived of opportunities that would enhance their performance on academic level. The majority of these children come from disadvantaged homes. According to a study by Du Plessis (2001) educational deprivation highly affects children’s learning and literacy acquisition and can lead to academic delay. Further, Du Plessis concluded that the level of literacy that a child will achieve depends on the availability, resources as well as the cultural use of literacy in a specific community. Some African cultures value speech over reading and because of the low levels of adult literacy in many African communities, books may not be available at home. Results from the Progress in International Reading Literacy Study (PIRLS) from 2006, which was conducted on behalf of the IEA (International Association for the Evaluation of Educational Achievement), showed that South African pupils in grade five achieved the lowest score on literacy when compared to children in the other 39 countries. South Africa was also among the countries with fewer literary resources, e.g. children’s books, at home. Because literacy resources are dependent to a large extent on economic factors, the PIRLS study also measured parental education which showed that a high percentage of South African parents had not completed lower secondary education. Finally, of the participating countries, South Africa was the one with the highest primary pupil-teacher ratio (35-1).

1.7.2 *Languages in South Africa*

According to Ethnologue, an encyclopedic reference work cataloging all of the world’s living languages (Lewis, 2009); there are 31 languages in South Africa. Out of these 24 are considered to be alive, i.e. have known first language speakers and are not only being used by second language learners as pidgin language or lingua franca. During the apartheid-era, English and Afrikaans were the only official languages in South Africa. After the first democratic elections in 1994, the South African constitution added 9 Bantu languages: Zulu, Xhosa, Pedi, Tswana, Sotho, Tsonga, Swati, Venda and Ndebele. Subsequently, South Africa today has 11 official languages. The majority languages are Zulu, spoken by 23.8 %, Xhosa, spoken by 17.6 % and Afrikaans which is spoken by 13.3 % of the population (Lewis, 2009). In South Africa the recognition of indigenous languages resulted in a higher demand for multilingual intervention in speech and language therapy. According to Jordaan (2008), the language used for speech language intervention is chosen with regards to three major determinants; the language of the community, the parental insistence and the language of
education (i.e. at school). This suggests that speech language therapists often are under pressure of working with the child in the language of education, i.e. use the higher status language and not the language of the home. The lack of bilingual therapy as well as the low support for developing the child’s native (often stronger) language in therapy, are important issues to address.

According to Mncwango (2009) post-apartheid South Africa lacks a clearly defined language policy. This is problematic because it may lead to poor linguistic diversity among the population. For instance, English and Afrikaans are still the most dominant means of communication even though the majority of South Africans have low levels of competence in these languages. In his research, Mncwango (2009) discusses the lack of language diversity in South African schools. Mncwango (2009) argues that the indigenous African languages are not being valued or included in the schools curricula. For instance, his study found that the majority of indigenous African language learners in the former Model C schools (“white-only” schools) are not able to read and write in their first language. Mncwango (2009) recommends that policies should be sanctioned by the government as a way of forcing schools to offer indigenous African languages as optional languages. Equal access to English as well as indigenous African languages should be given to all learners.

1.7.3 Socio-economic status in South Africa

In this section, South African issues concerning poverty, HIV/AIDS and education are presented.

As South Africa faces the second decade of democracy since apartheid, there are three main areas that affect the development of the socio economic status in South Africa. First, issues of inequality and poverty are still present. According to a study conducted on behalf of the Ecumenical Institute of South Africa (EFSA), a substantial portion (approximately 40%) of the South African citizens live in poverty – among these, 15% faces a desperate struggle to survive. In addition, the study also presents facts regarding income inequality in South Africa. Inequality can be measured by using the Gini Coefficient which can differ from 0 to 1. The closest to 1 means that the society is the most unequal, in contrast, the closest to 0 means the more equal a society is. Furthermore, the study concluded that one of the most unequal income distributions in the world are seen in South Africa. Between the years 1993 and 2008 the Gini score for South Africa increased by four percentage points, from 0.66 to 0.70
(Leibbrandt et al. 2010). According to the Work Programme 2010/2011 of Statistics South Africa (Stat SA) more than 10 million South Africans live in areas that are characterized by poverty and underdevelopment.

Second, the issues of HIV and AIDS in South Africa are equally important when valuing the country’s socio-economic status. According to UNAIDS, the joint United Nations programme on HIV/AIDS, an estimated 5.6 million people were living with HIV and AIDS in South Africa in 2009, more than in any other country in the world. Almost one-in-three women aged 25-29, and over a quarter of men aged 30-34, are living with HIV (UNAIDS, 2010). In 2010 the South African Government launched a major HIV counseling and testing campaign (HCT). The initiative has gradually led to a notable impact on the availability and uptake of HIV testing and treatment. The impact of the AIDS epidemic is also reflected in the dramatic change in South Africa’s mortality rates. The number of premature deaths due to HIV/AIDS has risen significantly over the last decade from 39 percent to 75 percent in 2010 and most of the victims are young adults (Harrison, 2009). In many cases children are left without parents; it is estimated that about 1.9 million children are orphans because one or both parents have died of AIDS (UNAIDS, 2010). On the 12th of March in 2007 the Government of South Africa stated in a report that the HIV/AIDS epidemic is responsible for half of the country’s orphans.

Finally, in a study by the Nelson Mandela Foundation (2004), reflections were made over the past ten years of basic education in South Africa. The study concluded that the effects of apartheid had shown to be more difficult to reverse than expected in 1994. Many of the obstacles still remain which have made it difficult to reconstruct the educational system. Questions have been raised regarding the quality of education. Uneven distribution of resources, both of material as well as of educators, has had a negative effect on the school system. In the Western Cape region all public schools are subsidized by the Western Cape Education Department (WCED). Funding is given according to poverty rankings of the schools’ surrounding community. The rankings are called “quintiles” and are based on the National Norms and Standards for School Funding (NNSF). The schools are assigned a quintile based on three poverty indicators: income level, unemployment rates and education levels of the community (WCED Media Release, 2007). This means that Quintile 1 schools often are located in poverty-stricken areas, whereas quintile 5 schools often are located in wealthy areas. Parents of learners at schools in quintiles one and two do not have to pay
school fees. From 1 January 2007 a national school policy was adopted that dictated that these schools became "no fee" schools (WCED, Media Release, 2007). Shortly after this the WCED also invited schools in quintile three to apply for no school fees, as a result almost every school in this category accepted the invitation. Parents of learners in quintile four and five still have to pay school fees. If the parents cannot afford them they can apply for exemption, depending on what they earn.

2 The research questions and the researchers assumptions of this study

In this study the following two questions are raised; first, will the implemented dynamic assessment procedure be able to show an increase of the participants’ narrative abilities by comparing the pre- to posttest changes? And secondly, how will the two narratives differentiate in terms of microstructure, macrostructure and mental state language? The assumptions made by the researchers were that the second narrative would be more complex and at a higher narrative level compared to pretest. Furthermore, the researchers expected an increase of micro- and macrostructural elements, as well as of mental state terms in the second narrative.

3 Aims

The main aim of the study was to determine the differences between the narratives produced before and after a dynamic assessment procedure following a test-teach-retest method.

The sub aim was to compare the narratives before and after dynamic assessment in terms of: microstructure (productivity, lexical diversity and syntactic complexity measures), macrostructure (structural complexity measures) as well as mental state terms (terms denoting awareness of the mental states of the characters in the picture sequences).

4 Methodology

4.1 Participants

The study was conducted in the school of the participants, over three days, with one session of about 10-15 minutes per child.
12 children from Grade R (preschool) and 4 children from Grade 1 at a primary school in a suburb of Cape Town, participated in the study. The school was chosen because the Department of Speech Language and Hearing at Stellenbosch University has a well-established cooperation with the school since some of the speech therapy students in 3rd year do their clinical training there. The school was also chosen because it is a mainstream school where English is the language of education. The majority of the children were bilingual, 10 out of 16 children told the researchers that they spoke another language than English at home. Within this group, some spoke Afrikaans, Xhosa, French or Ingala at home. All of the children spoke English at school. There were 11 girls and 5 boys. The mean age was 6 years ranging from 5 to 7 years.

4.1.1 Selection of participants

- Only mainstream learners from the same school were selected to control for influences of cognitive and physical disabilities and socio-economic status on their communication and narrative ability.
- The participants teachers were asked to select students who were proficient in English so that the participants could understand the researchers who only spoke English.
- The participants’ language of education was English.
- The participants were between 5 and 7 years old to make comparisons of narrative ability possible.
- Only participants whose parents/caregivers and themselves gave informed consent were included in the study.

4.1.2 Information letter and consent form

Prior to the study ethical approval was obtained from the Ethics Committee of Health Sciences at Stellenbosch University (Ethics approval, see Appendix 1). An information letter and a consent form (Information letter parents/legal guardians, see Appendix 2 & Child assent template, see Appendix 3) were handed out to the caregivers prior to the study. Only children and caregivers who gave consent took part in the study. Our supervisor, Dr. Daleen Klop also arranged a meeting with the school’s principal to inform him about the study and get his approval.
4.2 **Project design**

A cross-sectional descriptive study design was implemented where participants served as their own controls in a pre and post-test design.

4.3 **Procedure**

The assessment was carried out by two Swedish researchers. The pre and post-test design of this study consisted of telling a narrative that was elicited by a wordless picture sequence (Wordless picture sequence, see Appendix 5). The DA in this study took place during the teaching phase immediately after the first narrative task. With the set of focused questions the researchers drew the child’s attention to all the important parts in the story, including mental states and macrostructural elements. The microstructural elements were not mediated since they follow with the increase of macrostructural elements, e.g. a longer explanation of the outcome for the characters in the story (macrostructural element) will lead to more T-units (microstructural elements). The child was then asked to tell the story again. The entire session was video recorded.

During the sessions the researcher conducting the assessment did not take any notes. In dynamic assessment it is vital to be able to fully follow the participant and be an active examiner that gives accurate feedback to each participant. According to Lidz (1995), the goal of the examiner must be to function as an assessment tool and to facilitate change by responding to observations about the learner. Therefore, the other researcher who sat in made notes if and when necessary, for instance when loud background noise, due to the lunch break, threatened to disrupt the recordings.

4.3.1 **Assessment protocol**

The assessment protocol used in the study (Assessment protocol, see Appendix 4) was developed by Working Group 2 of COST Action IS0804 (Gagarina, Klop, Kunnari, Tantele & Balcuniene, 2011). The assessment protocol was used by the researchers to ensure that the test was conducted in a similar way with each participant. Therefore the protocol consisted of explicit instructions on how to conduct the warming up phase, the two tests and the focused questions (used in between the pre and post-test as mediated learning). The researchers also had instructions for feedback and appropriate prompts.
4.3.2 Focused questions

The dynamic assessment phase of the protocol, i.e. the focused questions, was developed by the investigators in collaboration with their supervisor Dr Daleen Klop at Stellenbosch University. The task was to focus the child’s attention on the important elements of the story, i.e. the goals, attempts and the outcomes of each character, for example by asking the child “What does the dog want?” (Assessment protocol, see Appendix 4). Furthermore the focused questions were also designed to show the importance of mental state language when telling narratives, e.g. what are the baby birds feeling? The focused questions consisted of four mental state questions where feeling, saying and thinking were emphasized. In addition nine questions were asked regarding goal-attempt-outcome, three questions for each of the main characters in the story.

4.3.3 Wordless picture sequence

A wordless picture sequence (Wordless picture sequence, see Appendix 5) was used to elicit the narrative samples. It consisted of six laminated pictures in color. The elicitation material was developed by Working group 2 of COST Action IS0804 (Gagarina, Klop, Kunnari, Tan-tele & Balciuniene, 2011). It was designed to assess narrative ability in bilingual children. The story consists of three main characters that each follow a story structure, i.e. has a goal, attempt and outcome (GAO). E.g. the cat wants to eat the baby birds (Goal). The cat climbed the tree (Attempt). The cat didn’t get the baby birds (Outcome). Some mental states were depicted in the pictures; however, more often mental states need to be inferred from the story structure.

4.4 Instrumentation

4.4.1 Equipment

Two digital photo cameras with video features, a Sony DSC-W350 and a Canon S95, were used with an additional microphone to record the data. The recordings were then transferred to memory sticks in order to make transcriptions of the material. During the sessions the camera was placed on books approximately 0.5 metres from the participants.

4.5 Pilot study

A pilot study was conducted at the participants’ school. Three children from Grade 1 were assessed according to the test protocol with the wordless pictures and the focused questions.
After the pilot study the examiners decided to make some changes to the warm up-phase as well as to the test protocol.

4.5.1 Changes made to the warm up-phase

The examiners felt that the children needed more time to get comfortable in the situation and decided to prolong the warm up phase with a short presentation of who they were by showing the children where they came from on a globe and showed three pictures from their country. The pictures made it more natural to ask warm up-questions because the examiner and examinee now shared attention to the pictures, and questions about e.g. travelling seemed more natural to ask for the examiners. Telling the children that the examiners also learnt English at school but talked another language at home made the question about what language they spoke at home more natural.

The length of the warm up-phase was also adapted to each child during the study. If the child was talkative the examiner started the assessment earlier, but if the child answered with short answers or not at all the examiner spoke more about the pictures until the child was more at ease with talking to the examiner. After the pilot study the examiners decided to follow a routine where the examiner who sat in during the assessment was responsible for the recording and also to make sure that the examiner who conducted the assessment asked every one of the focused questions. The examiner who sat in only deviated from her assignment and left the room if the child was very shy and showed signs of being in distress by not talking or looking at the examiner conducting the assessment.

4.5.2 Changes made to the protocol instructions

The protocol instructions were changed so that when the child was supposed to look at the pictures the instruction “Now you have time to look at each picture” was added to make the participants understand what was expected of him/her, since some children started to tell the story right away, instead of first looking at all of the pictures.

During the pilot study the examiners instructed the children to look at the pictures for a minute or two, but it was found that every child understood the instructions differently. As mentioned earlier some participants’ started talking about the pictures right away instead of first looking at all the pictures to get a gist of what the whole story was about. To adapt the time
for looking at the pictures the question “Are you finished?” was asked by the examiner when the child chose to look up or away from the pictures.

In summary, the pilot study enabled the examiners to adapt and refine the protocol as well as to familiarize themselves with the procedure. As a result the following assessment protocol was used:

### 4.6 Implementation of the study

#### 4.6.1 Narrative 1

After the warming up phase the examiners said to each of the participants’ “This is a story with pictures. First I’ll show you all the pictures, and then I want you to look at each picture and tell me the story. The examiner then placed the 6 laminated wordless pictures in a single, horizontal row in front of the child. As the examiner pointed her finger from the first to the last picture from left to right, the instruction “Now you have time to look at each of the pictures” was given. The child had now time to look at the pictures and the examiner only interrupted when the child started to look away from the pictures by asking “Are you finished?”. If the child agreed, the pictures were taken away.

Then the examiner put picture 1 in front of the child and said: Now I want you to tell the story. This is the beginning of the story. Look at the pictures and try to tell the best story you can. If the participants were hesitant to begin, allowable prompts were “How would you start your story?” or “Tell me what happens here” or “Tell me what happened”. When the child was finished telling the events in the first picture, the examiner moved picture 1 to the left and put picture 2 next to picture 1 on the table. If the child was hesitant to continue the allowable prompt was: “Tell me what happened” (examiner pointed to picture 2). When the child stopped telling the events in the second picture, the examiner put picture 2 on top of picture 1 and then placed picture 3 next to picture 2 on the table. The same procedure was then carried out for the rest of the pictures. The instructions clearly stated that only two pictures at a time should be presented to the child to minimize the amount of input.

#### 4.6.2 Teaching phase

Directly after the participant’s first narration of the story, teaching took place. This phase consisted of a set of focused questions aimed to direct the participants’ attention to the macro-structural as well as mental state elements of the story. When the child was finished telling the first narrative, the examiner collected all of the pictures and placed them all again in a single,
horizontal row in front of the child and said “Now I’m going to ask you some questions about the story”. Four questions focused the child’s attention on mental state language such as feeling, thinking and saying. Then there were nine questions about the characters goal-attempt and outcome, three questions for each of the three characters. In total 13 questions were asked.

4.6.3 Narrative 2

Directly after the training phase the same wordless picture sequence was used to elicit the second narrative from each participant. The examiner instructed the child by saying “Now I want you to tell the story again. Look at the pictures and try tell me the best story you can”. Then the procedures and the protocol stipulated in the first narrative were repeated.

4.7 Evaluation of data

4.7.1 Scoring of microstructure, macrostructure and mental states

First, the researchers transcribed the data by listening and watching the video recordings. Second, to prepare the narrative data for analyses, pruning and segmentation was made for all the transcriptions (Pruning and segmentation, see Appendix 7). The participants’ narratives were analysed and scored regarding microstructure, macrostructure and mental state language.

The following microstructural categories were used: Productivity (total number of words (TNW)) and total number of T-units), Syntactic complexity (number of words per T-unit), and Lexical diversity (number of different words (NDW)) (Microstructural analyses, see Appendix 8).

On the macrostructural level, participants’ GAO sequences and episodes were assessed according to the Westby Binary Decision Tree (2005), (see Appendix 9). According to Westby, narratives with a clear goal, attempt and outcome are complete episodes. But if the child mentions the goal but no attempt or outcome this is an abbreviated episode. Finally, if the child fails to mention the characters goal but includes the attempt or the outcome the narrative was considered to be only on a sequence level. The participants’ use of story structures, in other words, the number of goals, attempts and outcomes were scored as well as the use of story conventions. The chosen story conventions were setting, characters and conclusion (Assessment protocol, see Appendix 4). Setting is a time and/or place references often used in the beginning of a story, expressions like “once upon a time” or “long ago in a forest” were therefore scored. The scoring of characters was a measurement of how many of the four characters
in the story that the child mentioned. At last, the conclusion statement was scored if the participants’ ended their story by summing up the events by saying “the end” or “they lived happily ever after”.

The scoring of mental state language was done by first identifying the relevant words and clauses in the transcriptions and then each word was paired with the associated category (Mental state language, see Appendix 6). The categories were: (1) perception and physiology, (2) emotional states, (3) metalinguistic, (4) metacognitive and (5) other abstractions and evaluations. For example, the mental state term “happy” was often used to describe what the baby birds were feeling, “happy” was therefore scored under category 2, as it is an emotional state of being.

4.7.2 Scoring of focused questions

The four questions concerning mental state language and the nine GAO-questions made a total of 13 answers. After the sessions the investigators listened to the recordings and made the scorings. The participants’ were given 1 point for each correct response and 0 points for each incorrect response. A maximum of 13 points could be obtained.

4.8 Data coding and analysis

Directly after the assessment each participant was given a coded number. Then, the two sets of narratives from each of the 16 participants were transcribed from the audio-visual recordings (Two transcription samples, see appendix 10). In total 32 narratives were transcribed and analyzed. Once the data had become available, the analysis was made by using repeated measures ANOVAS and cross tabulation. The purpose was to compare each participant with themself, before and after dynamic assessment mediation. In consultation with a statistician, Prof. Martin Kidd of Stellenbosch University, the ANOVAS where finalized.

4.9 Validity and reliability

All the test measures utilized in the study have been previously used in research to assess narratives and were found to be valid measures of expressive language abilities. Inter-rater reliability was met by a qualified speech-language therapist familiar with narrative analysis that verified 30% of the data. Five participants were randomly selected, in total 10 narratives were reanalysed. The results are shown in table 3.1 and indicated high inter-rater-reliability. Differences in results between the researchers conducting the study and the second rater/qualified speech-language therapist were resolved through discussion, and a consensus was reached.
Table 3.1: 
*Inter-rater reliability for transcriptions and data coding*

<table>
<thead>
<tr>
<th>Measure</th>
<th>Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of words (TNW)</td>
<td>95 %</td>
</tr>
<tr>
<td>Total number of T-units</td>
<td>84 %</td>
</tr>
<tr>
<td>Number of different words (NDW)</td>
<td>97 %</td>
</tr>
<tr>
<td>Story grammar level (Westby Decision Tree)</td>
<td>90 %</td>
</tr>
<tr>
<td>Goal-Attempt-Outcome (GAO) sequences</td>
<td>89 %</td>
</tr>
<tr>
<td>Mental state language</td>
<td>97 %</td>
</tr>
</tbody>
</table>

4.10 Ethical considerations

- Ethical approval was given by the Ethics Committee of Health Sciences, Stellenbosch University, prior to commencing the research (Ethics approval, see Appendix 1).
- Verbal assent was obtained from the school principal and written informed consent was obtained from the parents/legal guardians and from each child prior to the study (Information letter parents/legal guardians, see Appendix 2 & Child assent template, see Appendix 3).
- All the participants and their parents were informed that anonymity and confidentiality would be guaranteed and that the rights of the participants would be protected (Information letter parents/legal guardians, see appendix 2 & Child assent template, see Appendix 3). Data for each participant were coded by number to safeguard the confidentiality of information.
- The selected participants and relevant parties were informed of all the aspects of the study. Participation was voluntary and participants were allowed to withdraw participation at any time.
- All audio-visual recordings were stored in a locked facility at Stellenbosch University.
- The procedures of the study did not impose any risks to the participants.
- The results of the study will be made available to colleagues and the public without identifying participants.
5 Results and discussion

5.1 Statistical analysis
A one-way within subjects or repeated measures ANOVA was conducted to compare the differences between the narratives produced before and after a dynamic assessment procedure. The repeated measures ANOVA compared the mental state (e.g. emotional states), microstructural (e.g. total number of words) and macrostructural measures (e.g. total number of GAOs) derived from the participant’s two narratives. For this set of analyses, the within-subjects independent variable was time: pretest and posttest. Post hoc analyses were done using Fisher least significance differences (LSD) tests to determine the significant differences between group means. All the statistical analyses were performed using Statistica. Significance levels were set at $p \leq .05$.

5.2 Microstructural results
Three of the four microstructural measures had a significant result when comparing between the two narratives (as shown in Table 4.1.). These were number of different words, words per T-unit and total number of words. The total number of T-units was the only measure that did not show a significant difference between narrative 1 and 2.

Table 4.1.
Micro structural results from narrative 1 and 2: $p$-values, means and standard deviations.

<table>
<thead>
<tr>
<th>Microstructure:</th>
<th>$p$-value</th>
<th>Narrative 1</th>
<th></th>
<th>Narrative 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NDW</td>
<td>0,00055*</td>
<td>37,13</td>
<td>10,56</td>
<td>48,13</td>
<td>16,88</td>
</tr>
<tr>
<td>Tot. of T-units</td>
<td>0,18207</td>
<td>11,75</td>
<td>3,44</td>
<td>13,13</td>
<td>5,05</td>
</tr>
<tr>
<td>Words/T-unit</td>
<td>0,00115*</td>
<td>7,06</td>
<td>1,32</td>
<td>8,99</td>
<td>1,88</td>
</tr>
<tr>
<td>TNW</td>
<td>0,00434*</td>
<td>82,75</td>
<td>25,43</td>
<td>120,13</td>
<td>59,51</td>
</tr>
</tbody>
</table>

Note: NDW = Number of different words, TNW = Total number of words, M = Means, SD = Standard deviation. *$p$-value $\leq$0,05

5.2.1 Discussion of microstructural results
These linguistic measures have been used in similar studies (Engelbrecht, 2011). For example, T-units have been used to measure expressive language syntax of children (Owens, 2004) and TNW in narratives increases with age and with proficiency (Klee, 1992; Miller, 1991 as cited
in Owens, 2004). Although the total number of T-units did not increase that much in the second narrative the participants did produce a higher amount of NDW and TNW, which resulted in longer T-units. The NDW, TNW and words per T-unit therefore gave a significant result.

Here follows an example of the individual differences between child no. 7, who was very talkative, and child no. 1, who was perceived as shy and quiet by the researchers of the study. Regarding total number of words child no. 1 went from 43 to 52 words at posttest, compared to child no. 7 who had 131 and increased to 297 at posttest. Concerning NDW child no. 1 went from 24 to 31 at posttest, where child no. 7 went from 60 to 92 at posttest. Child no. 1 then decreased in W/T-units with an average of 5.4 to 5.2 at posttest, whereas child no. 7 increased from 7.3 to 9.9 at posttest. Concerning the T-units produced in a narrative child no. 1 showed an increase from 8 to 10 T-units, compared with child no. 7 who almost doubled the amount from 18 to 30 at posttest.

This suggests that the focused questions can create the desired change in the results from pretest to posttest. The fact that the posttest results showed that the participants gave lexically and syntactically more complex narratives is consistent with Peña et al’s (2006) results. Even though the study from 2006 used two different stories and had 4-6 weeks in between pre- and posttest, the similarities with this study should be taken with precautions.

According to this study by Peña et al (2006) TD children will show a gain from pretest to posttest while LI children may show a modest gain.

5.3 Macrostructural results

5.3.1 Story conventions

The total score of story conventions was based on having a setting, all four characters and a conclusion in the narrative. In the 16 narratives elicited at pretest only two participants produced settings (e.g. “Once upon a time”) and no one produced conclusions (e.g. “The end”). In the 16 narratives elicited at posttest, three settings and one conclusion were produced. Note that the focused questions did not target setting and conclusion. Twelve children had the same number of characters after the focused questions. Only one child did not have characters in any of the narratives. Ten children had all four characters (baby birds, mommy bird, cat and dog) in the first and second narratives. Three children included one character more in the second narrative; this was either the mommy bird or the baby birds. The cat and the dog were the two characters that were always included in all of the 32 narratives. Finally, three children increased their total number of characters from the first to the second
narrative. All the characters in the story were mentioned in the focused questions. This measure did not show a significant result.

5.3.2 Story structure

A complete episode, when the goal, attempt and outcome for one character are produced in a narrative, is here presented as a GAO. For example, the GAO for the bird would be; goal: “get food for the baby birds”, attempt: “fly away to get food” and outcome: “brings food to the baby birds”. For the bird the participants produced zero complete GAO’s at pretest and five at posttest. A GAO for the cat produced in a narrative could then be; goal: “get the baby birds”, attempt: “climb the tree” and outcome: “was stopped by the dog”. The participants produced three GAO for the cat pretest and seven at posttest. The dog’s GAO could consist of; goal: “stop the cat”, attempt: “pull the cat down” and outcome: “the cat runs away”. Finally, the GAO for the dog did not increase; the participants produced a total of five complete episodes at pre and posttest. In every single narrative three complete GAO could be produced. In the 16 narratives at pretest 8 of 48 potential GAO were produced. 17 of 48 potential full GAO were produced at posttest. The results for the bird and the cat showed a significant difference, but not for the dog. The total of GAO also showed a significant difference.

Total of story structure means that all the separate goal, attempts and outcomes were counted for each participant’s first and second story. This measure showed a significant result. In total, there were 81 of 144 possible different goals, attempts and outcomes in the first narratives and 96 of 144 potential goals, attempts and outcomes in the second set of narratives.

Table 4.2.

Macrostructure results for narrative 1 and 2: p-values from repeated measures ANOVA, mean (M) and standard deviation (SD).

<table>
<thead>
<tr>
<th>Macrostructure:</th>
<th>Narrative 1</th>
<th>Narrative 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>p-value</td>
<td>M</td>
</tr>
<tr>
<td>Tot.St.Convention</td>
<td>0.10377</td>
<td>0.69</td>
</tr>
<tr>
<td>GAO 1</td>
<td>0.01966*</td>
<td>0.00</td>
</tr>
<tr>
<td>GAO 2</td>
<td>0.04096*</td>
<td>0.19</td>
</tr>
<tr>
<td>GAO 3</td>
<td>1.00000</td>
<td>0.31</td>
</tr>
<tr>
<td>Tot.number GAO</td>
<td>0.02707*</td>
<td>0.56</td>
</tr>
</tbody>
</table>
Note: Tot.St.Convention=Total of story convention is the total score of setting, characters and conclusion. (Assessment protocol, see Appendix 4) Tot.St.Structure=Total of story structure is the total number of every goal, attempt and outcome produced in one narrative. GAO= The goal, attempt and outcome for a character were all present. GAO1= The GAO for the cat. GAO2= The GAO for the cat. GAO3= The GAO for the dog. *Significant results.

5.3.3 Discussion of macrostructural results

As seen in Table 4.2.; four out of six measures showed a significant difference. The low amount of settings and conclusions and the low increase in number of characters in the narratives might be because the participants realise that the researcher also sees the pictures and therefore they might feel that it is not necessary to give the setting or conclusion. Shared attention of the pictures can affect the story telling, i.e. what the child tells the listener. The fact that the focused questions did not target setting and conclusion might have led to the low increase of these in the second narrative. Therefore, the non-significant result might be a result of this.

At pretest the GAO of the dog was the easiest for the participants to grasp, with five GAOs for the dog produced by the participants. Three GAOs for the cat and zero GAO’s for the birds were produced pretest. The mommy bird’s role in the narrative was clearly hard to grasp for the participants. This is maybe due to that some children did not interpret the baby birds open mouths as being hungry and thereby missed the goal of the mother bird, i.e. to get food for the baby birds (Wordless picture sequence, see Appendix 5). An interesting fact is that the goal for the bird went from 4 to 12 after the focused questions; resulting in 5 full GAOs for the bird at posttest, while the full GAOs for the cat increased from 3 to 7 at posttest. The GAO for the dog did not increase in the second story. A possible explanation is that some children were impatient or not motivated enough to repeat all the facts in the second narrative since they knew that the researcher had just heard it. A solution to this would be to use two different stories or having a new listener coming in to the room. This is recommended for future studies.

Finally, the results of the bird indicate that the focused questions helped the participants to form a better understanding of what the mother intended to do, which supports that mediated learning with a researcher/adult can enhance a child’s learning potential (Feuerstein, 1979).
This increase of story grammar after dynamic assessment has been supported by previous studies (Peña et al., 2006). But the picture used might also affect the outcome of this measure. A change of the picture, to clarify that the baby birds are hungry, might increase the understanding of the bird’s goal.

5.4 Mental state results

Each mental state term was identified and counted in each narrative. (Mental state language, see Appendix 6). The five categories were: Perception (e.g. see, hear, listen), Emotional states (e.g. sad, scared, worried), Metalinguistic (e.g. say, shout, ask), Metacognitive (e.g. want, think, dream) and Other abstractions/evaluations (e.g. naughty, rude, shouldn’t). For example, in an utterance like: “Then the dog said: I see the cat!” the verb “said” was coded as a mental state term belonging to the category of metalinguistic and the verb “see” was coded as a mental state term of the category of perception. This sentence would therefore be coded as having two mental state terms. All utterances in the narratives were coded and each mental state term was counted. A total number of mental state terms were then reached for each narrative.

Three of the five categories of mental states increased with 70-77% and two with 50-53%. The only category that showed a significant difference was the mental state terms of perception. The total number of mental state terms in the narratives was 90 before the focused questions and 159 after; this is an increase of 77%. This was a statistically significant result.

Table 4.3.

Mental state results: p-values, means, standard deviations, total number and increase in percentage for narrative 1 and 2.

<table>
<thead>
<tr>
<th>Categories of mental states:</th>
<th>Narrative 1</th>
<th></th>
<th>Narrative 2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of mental states</td>
<td></td>
<td>No. of mental states</td>
</tr>
<tr>
<td>p-value</td>
<td>M</td>
<td>SD</td>
<td></td>
<td>M</td>
</tr>
<tr>
<td>Perception</td>
<td>0,00830*</td>
<td>1,44</td>
<td>1,09</td>
<td>23</td>
</tr>
<tr>
<td>Emotional</td>
<td>0,17279</td>
<td>0,88</td>
<td>1,50</td>
<td>14</td>
</tr>
<tr>
<td>Metalinguistic</td>
<td>0,25944</td>
<td>1,00</td>
<td>1,41</td>
<td>16</td>
</tr>
<tr>
<td>Metacognitive</td>
<td>0,10212</td>
<td>2,19</td>
<td>2,90</td>
<td>35</td>
</tr>
</tbody>
</table>
Abstract

<table>
<thead>
<tr>
<th>Mental state</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>0.04085*</td>
<td>5.63</td>
</tr>
</tbody>
</table>

Note: M = Mean SD = Standard Deviation

*p <0.05

5.4.1 Discussion of the mental state results

The five categories of mental state language used in our analysis is one view of how one can code utterances into different categories. In this study the category of metalinguistic mental state terms refer to verbs of saying and telling, while other researchers can define this term differently. Younger children tend to start understanding and using mental states belonging to the category of perception first, e.g. hungry, saw, heard. Therefore it is expected that this would be the category with the highest amount of mental states. It is possible that future studies in this field can show a significant difference for the other categories as well. This increase of mental states shows that the children became more aware of the mental states after the focused questions (Engelbrecht, 2011). This indicates that the method used in this study enhanced the child’s ability to demonstrate their language learning abilities, i.e. reached their ZPD (Vygotsky, 1978).

5.5 Results of narrative structure level

Four participants were at sequence level before the focused questions and two after. Six were at abbreviated episode level and four after. This means there was an increase from six to ten participants producing complete episodes after the focused questions.

Table 4.4.

Comparisons of narrative levels of the 16 participants in narrative 1 and 2.

<table>
<thead>
<tr>
<th>Narrative level:</th>
<th>Narrative 1</th>
<th>Narrative 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sequence (Seq)</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Abbreviated episode (AE)</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Complete episode (Epi)</td>
<td>6</td>
<td>10</td>
</tr>
</tbody>
</table>

Note: Seq = no explicit goal statement. AE = no complete GAO structure  Epi = complete
5.5.1 Discussion of narrative structure level

Six children were already at complete episode level in the first narrative. When children are around six years old they start to grasp and then produce complete episodes in narratives. The fact that six of them produced complete episodes at pretest might be due to the fact that the teacher picked the best students, since she was asked to include children who were fluent in English since it was the only language the researchers had in common with the children. Due to this fact she might have chosen the most academically skilled students to participate which might reflect the high amount of children that already displayed advanced narrative levels.

6 General discussion

The primary purpose of this study was to see if a test-teach-retest DA design, would show an increase in the measures of the participant’s narrative ability at posttest. As stated in previous research (Peña et al, 2006; Laing & Kamhi, 2003) DA can be useful when standardized tests fail to be unbiased when assessing children with CLD backgrounds. It has also been shown that narrative ability is a good measure of a child’s language ability (Peña et al, 2006). In this study a dynamic assessment of narrative ability was conducted with a pre- and posttest design. Thirty-two narratives were elicited from sixteen South African Grade R and Grade 1 children. The posttest showed increasing results on all sixteen measures of narrative ability. Out of these more than half (nine out of sixteen) were statistically significant. Also, the narrative level increased, from six participants pretest to ten participants posttest producing narratives at episode level (e.g. the most advanced level of a narrative (Westby, 2005). Because of the small sample of participants it is hard to draw any generalized conclusions of this study, even though the results show an increase of narrative ability posttest. This indicates that the material and design has a potential to be used for assessing the narrative ability of children with CLD backgrounds.

6.1 Early exposure to literacy

As mentioned earlier, the study by the Progress in International Reading Literacy (PIRLS) from 2006 showed that many of the children in South Africa come from homes without books and lack early exposure to literacy. The participants in this study were not from the area of the lowest socioeconomic status in Cape Town. This may explain the participants’ relatively high
levels of narrative complexity in their first narratives. Research has established that a family’s socioeconomically status (SES) and language input from parents affect the child’s language development (Hart & Risley, 1995).

The children in this study seem to have had an early exposure to literacy. One participant said that he usually tells stories to his younger brother. One child started his narrative with “Once upon a time…” which clearly shows exposure and experience of children’s stories. Participant number 7 gave examples of being a good storyteller. She used high or low pitched voice to distinguish the different characters to the listener which shows a previous experience of how to take on the different roles in a story to facilitate for the listener and animate the narrative. She also used her imagination to develop what actually is shown in the pictures (e.g. she said the branch broke when the cat was hanging on to it). She also had character speech, with direct speech acts, where she presented a dialogue between the dog and the cat, where they discussed who will get eaten by whom. This participant also used repetitions of the same word to create excitement and contrast the different opinions of the characters; ”-Can I get you for dinner cat? The cat said, - No, no, no, no! Dog, you cannot have me for dinner.”

6.2 Cultural differences affecting the narratives

The understanding of different narrative styles can help to clarify cultural effects in narrative assessment. Children in the pilot study were perceived as shy or not so at ease with the assessment and therefore the above mentioned changes to the protocol and warm up phase were done before the study. Nonetheless some of the participants in the study did not answer or barely answered questions in the warm up phase. This might derive from different factors. It could have been a culture clash between the researchers and the participants of this study. Since the researchers came from another culture they might have expected the child to interact differently while producing the narratives. There can be great differences in children’s narrative performance across various cultural, linguistic and socio-economic populations (Berman & Slobin, 1994; Boyd & Nauclér, 2004; Engelbrecht, 2011; Nauclér, 2001.). Research has shown that there are cultural differences in how a narrative is produced. According to Vernon-Feagan’s study (1996) narratives of African American children are produced in a collaborative joint storytelling while the Western style of narrative production is more individual.
The researchers also suspect that the lack of formal beginnings and endings of the narratives produced in this study could be due to cultural differences, based on the fact that Heath (1983) noticed that African American children have less formal beginnings and endings in their narratives, compared to Caucasian children. The researchers believe that the cultural difference in narratives is an area appropriate for future research in South Africa.

6.3 A carry-over effect
Some might believe that the results in this study are due to a carry-over effect of using the same picture sequence twice; that the child learnt the story and therefore the second narrative is better. A child’s language ability is far greater and more complex than the mediated learning session (the focused questions) can demonstrate. Since the focused questions don’t give the child the answers or clues on how to complete a narrative, the difference from the first narrative to the second one is thought to be evidence of the child’s actual learning potential. However, to rule out the carry-over effect future studies could use two different picture sequences with similar story structure, or have a control group that only tell the story twice, without the focused questions.

6.4 Observations during sessions
During the sessions one of the participants told the researcher he wanted to call the worms “toy-worms”, since he did not want to use the word worm. This statement was misunderstood by the researcher conducting the session; she thought the child was protesting because he did not want to tell the story again. When transcribing the material it became clear what the participant had actually said, that is, that he did not want to use the word worm. For the researchers this was surprising, they had not thought about the fact that some cultures believe and see certain animals as symbols of evil or other negative things. This event might be a culture clash that took place without the researchers initially understanding it. It is difficult to say how much this affected the study since no other child expressed discomfort in using the word “worm” or for that matter naming any other animal or object in the story. However, this can be a factor to take into consideration when designing pictures for future studies in this field.

Another observation made by the researchers was that some of the children, in 12 of 32 narratives, described the cat in picture 3 (Wordless picture sequence, see Appendix 5) as looking happy, smiling or laughing. This is meant to be the picture where the child will
understand that the cat is a danger to the baby birds, in other words, that he wants to get up
the tree and catch the baby birds. The pictures in this story are meant to be as clear as
possible, but in this case it became obvious that picture 3 often failed to convey the cat’s
actual feelings and ulterior motives. A change to the cat’s face could help children see his true
intention more clearly, for example by putting teeth in his mouth.

6.5 Limitations of the study
Only a small sample of the population was assessed in this study. The researchers found that
the implemented DA method, test-teach-retest, was time consuming. Questions were then
raised regarding the use of DA in a larger sample, e.g. an entire school. Collecting data from
an entire school would take a long time; the researchers feel that there is a need for norms that
can help clinicians to quickly identify the children in need of speech language therapy.
Furthermore, the participants of the study were chosen from the same school and the majority
of the participants attended the same class. This, as well as the fact that many of the children
came from the same geographical area, makes a generalization for a larger population
difficult. The researchers also experienced some limitations regarding the facilities in which
the study was conducted; the main problem was the lack of sound isolation. When
transcribing, the researchers sometimes struggled to hear some of the uttered words. This may
have affected the participants’ scores, for instance microstructural elements such as total
number of words or number of different words might have been miscalculated.

6.6 Suggestions for future research
First, it would be desirable to conduct a similar study with a larger population sample. The
pictures in narrative 1 and 2 were the same, which means that the participants had to tell the
same story twice. Although none of the participants in this study complained about this, some
of them showed signs of boredom when telling the narrative for the second time. To avoid
making assumptions of how much this might have affected the results, a possible solution
may be to use a different picture sequence, with similar story structure and possibilities for
mental state terms to occur, at posttest. A new content with other characters can help the
researchers to sustain the participant’s ongoing interest in the story telling.

It could also be interesting to do a study that practices the DA method, test-teach-retest, over a
longer period of time. This method has been used by e.g. Peña et al (2006). Instead of doing
the test-teach-retest in one session, researchers could do sessions spread out over time. After
the first test, the researchers could use the time before the teaching session to analyse and target the “errors” made in the narrative. If for example the child struggles with the naming of characters, the teaching session could then focus on this specific domain. As a result, it would be very interesting to see if naming of characters improves or changes in any other way from the first to the second narrative.

6.6.1 Preparing SLT students for bilingual clients

Apart from developing assessment materials for bilingual children the researchers of this study believe that more can be done. The fact that bilingual children in many countries, like South Africa, risk to lose their native and often stronger language when entering school settings because of the dominance of the high status of the educational language, English, is an important issue (Jordaan, 2008). In South Africa the vast majority of the SLTs come from a Caucasian culture, in comparison to the majority of their clients. As discussed in Jordaan’s article (2008) there is an idea of introducing selection criteria that demands SLT students to be proficient in more than one language. The SLT students would need to know or learn one language that is spoken in the community at the entry of SLT educational programs. The researchers of this study think that this should be considered by stakeholders. This would help SLTs when facing the multilingual societies.

Another solution could be to train interpreters and SLT students to do language assessments together, or to teach SLT students the most common low-status languages. At Stellenbosch University, South Africa, the researchers of this study were pleased to see that the Department of Speech-Language Therapy set a good example in trying to bridge the language barriers in the community. Since a few years back the SLT students, almost exclusively Caucasian students that speak English and Afrikaans, receive education in Xhosa, the second most common language in South Africa. The researchers believe that this is one way for SLT programs to overcome some of the language barriers in multilingual societies. Another solution could be to promote SLT programs to high school students in communities that speak the desired languages, to make SLT students become a more heterogeneous and multilingualistic group.
7 Conclusions

In this study a dynamic assessment of narrative ability was conducted with a pre- and posttest design. The posttest showed increasing results on 15 of 16 measures of narrative ability. Out of these more than half (nine out of sixteen) were statistically significant. Also, the narrative level increased, from six participants’ pretest to ten participants posttest producing narratives at episode level. Because of the small sample of participant’s it is hard to draw any generalized conclusions of this study, even though the results show an increase of narrative ability posttest. This indicates that the material and design has a potential to be used for assessing the narrative ability of children with CLD backgrounds. Suggestions for future studies include using two similar picture sequences to elicit the narratives and have a longer time between pretest and posttest to see a long term affect and rule out a carry-over effect. The issues of cultural effects of narratives and the problems of the lack of multilingual SLTs and assessment materials for bi- or multilingual children are also discussed.
8 Populärvetenskaplig sammanfattning

Bort med stelbent testning av flerspråkiga barn, in med mer dynamik!

Standardiserade test är främst baserade på mönster som hämtats från studier av majoritetsbefolkningen i ett land. En befolkning delar ofta samma kultur och de talar ofta samma språk, men framförallt delar de liknande upplevelser. På grund av detta är det mycket svårt för yrkesverksamma logopeder att använda allmänna test på barn med mångkulturell bakgrund. Dynamic Assessment (DA) är en alternativ och dynamisk bedömningsmetod som tagits fram för att förhindra att språklig testning av mångkulturella barn blir orättvis. DA fokuserar på barns sätt att använda sig av sitt språk medan traditionella mått främst används för att mäta prestation. Den här uppsatsen syftar till att undersöka om det finns en skillnad i barns sätt att berätta en saga före och efter användning av dynamisk bedömningsmetod. 16 sydafrikska förskolebarn testades, varje barn fick berätta två historier till samma bildsekvens. Mellan de två berättelserna ställde forskarna riktade frågor om innehållet, dessa riktade frågor motsvarade den dynamiska delen av bedömningen. Forskarna kunde med stor glädje konstatera att en rad signifikanta resultat hittades. Användningen av ”mental state terms” (vad karaktärerna i en berättelse känner och tänker), microstruktur (lingvistisk struktur) samt macrostruktur (övergripande organiserings av berättelsen), ökade från första till andra berättelsen. Detta resultat tyder på att användningen av en dynamisk bedömningsmetod kan ge oss logopeder ett instrument som är rättvist vid bedömning av mångkulturella barns berättarförmåga.
9 Acknowledgements

We would like to thank:

The principal, teachers and students at the school in Bellville, South Africa for their participation in the study and their help throughout the process

Dr Daleen Klop for her knowledge, guidance and support

Dr Margareta Jennische for helpful advice

Helena Oosthuisen for helping us with the coding of mental state language as well as with the inter-rater-reliability of the study

Dr Martin Kidd for the statistical support

Niklas Malmqvist for helping us with the outline of the raw data

Andrea Limmerstedt for the spell check of this thesis

The Department of Spraak- Taal en Gehoorterapie at Stellenbosch University, South Africa for their helpfulness and hospitality
10 References


Engelbrecht, L. (2011). The effect of different visual modality and task conditions on the narratives of typically developing 9 year old children. Master thesis at the Faculty of Health Sciences, Division of Speech- Language and Hearing Therapy at Stellenbosch University, 9-17.


Stein, N. & Glenn, C. R. (1979). An analysis of story comprehension in elementary


11 APPENDIX

1. Ethics approval
2. Information letter parents/legal guardians
3. Child assent template
4. Assessment protocol
5. Wordless picture sequence
6. Mental state language by Helena Oosthuisen (has been adapted to suit this study)
7. Pruning and segmentation
8. Microstructural analyses
9. Macrostructural analyses with the Westby Binary Decision Tree
10. Two transcription samples
Appendix 1: Ethics approval

12 September 2011

Dr D Klop

Department of Speech and Language Therapy

4th Floor
Teaching Block
Room 4068B

Dear Dr Klop

Dynamic assessment of narrative ability in a group of South African preschool children.

ETHICS REFERENCE NO: N11/08/255

APPROVAL WITH STIPULATION

It is a pleasure to inform you that a review panel of the Health Research Ethics Committee has approved the above mentioned project with STIPULATIONS on 12 September 2011, including the ethical aspects involved, for a period of one year from this date.

1. Assent is usually required for children 7 years and older, in this case, a simple form stating the basic research and a short explanation of the risk (low) and confidentiality should suffice if parents have consented. Alternatively the researchers explain the research as ‘can I talk to you and would you like to tell me a story?’

This project is therefore now registered and you can proceed with the work. Please quote the above-mentioned project number in ALL future correspondence. You may start with the project. Notwithstanding this approval, the Committee can request that work on this project be halted temporarily in anticipation of more information that they might deem necessary.

Please note a template of the progress report is obtainable on www.sun.ac.za/rds and should be submitted to the Committee before the year has expired. The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly and subjected to an external audit.

Translations of the consent document in the languages applicable to the study participants should be submitted.

Federal Wide Assurance Number: 00001372

Institutional Review Board (IRB) Number: IRB0005239
The Health Research Ethics Committee complies with the SA National Health Act No.61 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 Part 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health).

Please note that for research at primary or secondary healthcare facility permission must still be obtained from the relevant authorities (Western Cape Department of Health and/or City Health) to conduct the research as stated in the protocol. Contact persons are Ms Claudette Abrahams at Western Cape Department of Health (healthres@pgwc.gov.za Tel: +27 21 483 9907) and Dr Hélène Visser at City Health (Helene.Visser@capetown.gov.za Tel: +27 21 400 3981). Research that will be conducted at any tertiary academic institution requires approval from the relevant hospital manager. Ethics approval is required BEFORE approval can be obtained from these health authorities.

Approval Date: 12 September 2011  
Expiry Date: 12 September 2012

Yours faithfully

MS CARLI SAGER  
RESEARCH DEVELOPMENT AND SUPPORT  
Tel: +27 21 938 9140 / E-mail: carlis@sun.ac.za  
Fax: +27 21 931 3352

12 September 2011
PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM FOR USE BY PARENTS/LEGAL GUARDIANS

TITLE OF THE RESEARCH PROJECT:

Dynamic Assessment of the narrative ability in a group of South African pre-school children

REFERENCE NUMBER:

PRINCIPAL INVESTIGATORS:
Carolina Limmerstedt, Elisabeth Lyhre

ADDRESS IN SWEDEN:
Dept. of Neuroscience, Speech and Language Pathology Programme, Uppsala University, Sweden
BMC
POB 593
SE-751124 Sweden

ADDRESS IN SOUTH AFRICA:
Speech-Language and Hearing Therapy,
P.O. Box 19063,
Tygerberg, 7505

CONTACT NUMBER: 021 938 9494

Your child (or ward, if applicable) is being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the researchers or supervisor any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how your child could be involved. Also, your child’s participation is entirely voluntary and you are free to decline to participate. If you say no, this will not affect you or your child negatively in any way whatsoever. You are also free to withdraw him/her from the study at any point, even if you do initially agree to let him/her take part.

This study has been approved by the Health Research Ethics Committee at Stellenbosch University and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

What is this research study all about?
Speech-language therapists often use stories to test children’s language abilities. In this study we use a procedure called dynamic assessment to test children’s ability to
tell stories. We want to find out if using this procedure will help children to tell the best stories they are able to.

If you give permission for your child to take part in this study we will come to the school at a time that is convenient for the school. We will assess your child in one session of about 20 minutes by asking him/her to tell two stories about picture cards. The stories will be videotaped and analysed by us.

**Why has your child been invited to participate?**
Your child has been invited to participate in this study because he/she is in the specific age group of the study.

**What will your responsibilities be?**
None

**Will your child benefit from taking part in this research?**
The participants may benefit by improving their narrative skills, e.g. how to tell a story. We will send you a short report about your child’s results and recommend speech-language intervention if indicated by our results.

**Are there any risks involved in your child taking part of this research?**
There are no risks associated with this study.

**If you do not agree to allow your child to take part, what alternatives does your child have?**
There will be no negative effects for your child if you choose not to participate. The participation in the study is voluntary and you can withdraw your child from the study at any time.

**Will you or your child be paid to take part in this study and are there any costs involved?**
You or your child will not be paid to take part in the study. There will be no costs involved for you or your child.

**Is there anything else that you should know or do?**
You can contact Dr Daleen Klop at tel. 021-938 9494 if you have any further queries or encounter any problems.

You can contact the Health Research Ethics Committee at 021-938 9207 if you have any concerns or complaints that have not been adequately addressed by your child’s study leader.

You will receive a copy of this information and consent form for your own records.
Please complete this form and return to the school

Declaration by parent/legal guardian

By signing below, I (name of parent/legal guardian)………………………………………….. agree to allow my child (name of child)………………………………………….. who is ............ years old, to take part in a research study entitled: Dynamic Assessment of the narrative ability in a group of South African pre-school children

I declare that:

• I have read or had read to me this information and consent form and that it is written in a language with which I am fluent and comfortable.
• If my child is older then 7 years, he/she must agree to take part in the study and his/her ASSENT must be recorded on this form.
• I have had a chance to ask questions and all my questions have been adequately answered.
• I understand that taking part in this study is voluntary and I have not been pressurised to let my child take part.
• I may choose to withdraw my child from the study at any time and my child will not be penalised or prejudiced in any way.
• My child may be asked to leave the study before it has finished if the study doctor or researcher feels it is in my child’s best interests, or if my child do not follow the study plan as agreed to.

Signed at (place)

…………………………………………. on (date) ………………………………

…………………………………………. …………………………………………..

Signature of parent/legal guardian Signature of witness
TITLE OF THE RESEARCH PROJECT: Dynamic Assessment of the narrative ability in a group of South African pre-school children

RESEARCHERS NAME(S): Carolina Limmerstedt, Elisabeth Lyhre

ADDRESS: Speech-Language and Hearing Therapy, P.O. Box 19063, Tygerberg, 7505

CONTACT NUMBER: 021-938 9494

What is RESEARCH?

Research is something we do to find new knowledge about the way things (and people) work. We use research projects or studies to help us find out more about speech and language problems in children. Research also helps us to find better ways of helping, or treating children with problems.

What is this research project all about?
The study will help us find better ways to test how children tell stories

Why have I been invited to take part in this research project?
You have been invited to participate because you are in the right age group for the study.

Who is doing the research?
The research is done by two students from Sweden. Their names are Carolina Limmerstedt and Elisabeth Lyhre. They will be supervised by Dr Margareta Jennische, Senior Lecturer, Uppsala University and Dr Daleen Klop, Division of Speech-Language and Hearing Therapy, Stellenbosch University.
What will happen to me in this study?
We will come to your school and show you pictures and then ask you to tell the story in the pictures. Then we will ask you a few questions about the pictures. Then we will ask you to tell the story again.

Can anything bad happen to me?
Nothing bad can happen to you if you participate in the study. Looking and talking about pictures will be like having a lesson at school. If you don’t want to answer any questions about the pictures, you should tell your parents or your teacher.

Can anything good happen to me?
By talking and answering questions about pictures you can become better at telling stories.

Will anyone know I am in the study?
Only the researchers, their supervisors, your teachers, parents and class mates will know that you are in the study.

Who can I talk to about the study?
If you have any questions about the study you can ask your teacher, your parents or the researchers when you meet them.

What if I do not want to do this?
If you don’t want to be in the study, you can just tell your teacher or parents that you don’t want to. You can do that without getting in trouble.

Do you understand this research study and are you willing to take part in it?

YES  NO

Has the researcher answered all your questions?

YES  NO

Do you understand that you can pull out of the study at any time?

YES  NO

_________________________  ______________________
Signature of Child  Date
Appendix 4: Assessment protocol

**Storytelling Subtest**

**Cat**

Name of a child: ______________________________________________________
Date of Birth: ______________________________________________________
Date of Testing: _____________________________________________________
Name of examiner: _________________________________________________
Language tested: ___________________________________________________

**Preparing the material:**
Print the PDF file in colour on an A4 page. Write the numbers on the back of the pictures, laminate the page and cut out the individual pictures.
Prepare the audio/video recorder in order to record the session. Start the recordings before warming up.

**Warming up:**
The warming up phase should be composed according to your previous experience and cultural environment. While talking with child, please, ask the following questions (to ensure the ability to understand simple wh-questions): *What is your name/mother's name? Who is your best friend? (or Who brought you here/at school today?) Where is your teacher/mother now? What do you like to eat? Why?*

**Instructions:**
Say to the child: *This is a story with pictures. First I'll show you all the pictures, and then I want you to look at each picture and tell me the story.* The experimenter then places the 6 laminated pictures in the correct sequence in a single, horizontal row in front of the child and points his/her finger from the first to the last picture, from left to right. Allow the child to look at the pictures for a minute or two to get the gist of the story. Then take the pictures away.

Put picture 1 in front of the child and say: *Now I want you to tell the story. This is the beginning of the story. Look at the pictures and try to tell the best story you can.* Allowable prompt if the child is hesitant to begin: *How would you start your story? or What do you think is happening in the story or Tell me what happened.*

When the child stops telling, move picture 1 to the left and put picture 2 next to picture 1 on the table. Allowable prompt if the child is hesitant to continue: *Tell me a sto-

---

1 Please familiarize yourself with the “further instructions” before you start the assessment.
2 Please, be VERY careful with the prompts in order to avoid differences between research groups, i.e. experimenter effects. Wait up to 10 seconds; if the child is still silent use the prompt.
ry about what happens in this picture (point to picture 2) or Tell me what happened. When the child stops telling, put picture 2 on top of picture 1 and put picture 3 next to picture 2 on the table. When the child stops telling, put picture 3 on top of picture 1 and 2 and put picture 4 next to picture 3 on the table. If the child is silent in the middle of the story, encourage her/him to continue and tell you more: Anything else?, Continue, Tell me some more. Continue with this process until the end of the story. If the child stops without indicating that they have ended the story, ask: Are you finished?
Record form for Storytelling

### Story Conventions

<table>
<thead>
<tr>
<th>Response</th>
<th>Correct</th>
<th>Incorrect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Setting</td>
<td>Time and/or place reference, e.g. once upon a time … long ago in a forest … in a meadow/forest…</td>
<td>0 (1^6)</td>
</tr>
<tr>
<td>Characters</td>
<td>bird, chicks, dog, cat</td>
<td>0 (1')</td>
</tr>
<tr>
<td>Conclusion</td>
<td>Conclusion statement e.g. that is the end, that is all, they lived happily ever after… (not bird/dog is happy/ chicks are saved)</td>
<td>0 (1)</td>
</tr>
</tbody>
</table>

**Total score Story Conventions**

### Story Structure

<table>
<thead>
<tr>
<th>Response</th>
<th>Score</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal-Attempt-Outcome structure 1: <em>Bird</em></td>
<td>0 (1^3)</td>
<td></td>
</tr>
<tr>
<td>Goal</td>
<td>bird wants/wanted to feed chicks, catch/bring/get/find food/worms …</td>
<td>0 (1^3)</td>
</tr>
<tr>
<td>Attempt</td>
<td>bird/it is flying/flies/flew away, went away …</td>
<td>0 (1)</td>
</tr>
<tr>
<td>Outcome</td>
<td>bird/mommy/it got/caught/bring/brought food/worms…. (not bird is happy)</td>
<td>0 (1)</td>
</tr>
<tr>
<td>Goal-Attempt-Outcome structure 2: <em>Cat</em></td>
<td>0 (1)</td>
<td></td>
</tr>
<tr>
<td>Goal</td>
<td>cat wants/wanted to eat/catch/kill the chicks …</td>
<td>0 (1)</td>
</tr>
<tr>
<td>Attempt</td>
<td>cat/it climbs/climbed the tree, jumps/jumped up, try to reach/get …</td>
<td>0 (1)</td>
</tr>
<tr>
<td>Outcome</td>
<td>cat didn’t get chicks, runs/ran away, is stopped by the dog … (not cat is unhappy/disappointed)</td>
<td>0 (1)</td>
</tr>
<tr>
<td>Goal-Attempt-Outcome structure 3: <em>Dog</em></td>
<td>0 (1)</td>
<td></td>
</tr>
<tr>
<td>Goal</td>
<td>dog wants/wanted to stop the cat, help/save/protect the chicks …</td>
<td>0 (1)</td>
</tr>
<tr>
<td>Attempt</td>
<td>dog/it pulls/pulled/drag/dragged cat down, bites/attacks/chases the cat …</td>
<td>0 (1)</td>
</tr>
</tbody>
</table>

---

3 Write down incorrect answers and phonetically and/or phonologically altered forms in the Comments column to allow for qualitative analysis. If too long mark with an asterisk for further follow-up in the audiofile.

4 Mark omitted responses with 0.

5 The Comments column is for general observations, clarifications, incorrect answers, etc.

6 Circle 0 for no mention of time or place; circle 1 for mention of either time or place; circle 2 for mention of both.

7 Circle 1 only if all 4 protagonists are verbally indicated. Write down in the Comments column all verbally indicated protagonists, if a child named only 1, 2 or 3 of them.

8 Circle the appropriate score and indicate whether incorrect or omitted in case of a 0 score.
<table>
<thead>
<tr>
<th>Outcome</th>
<th>cat runs/ran away, the chicks are saved ... <em>(not) bird/dog is happy</em></th>
<th>0</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total score Story Structure</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Focused questions for mediated learning phase

When the child has completed the telling say: “Now I’m going to ask you some questions about the story”. The questions may be repeated twice without elaboration if the child doesn’t respond the first time.

Tick the appropriate box; circle or write the appropriate score (read attentively the footnotes) while the child is answering the questions.

<table>
<thead>
<tr>
<th>Mental state questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>What are the baby birds feeling?</td>
</tr>
<tr>
<td>What do you think the cat says?</td>
</tr>
<tr>
<td>What does the dog think?</td>
</tr>
<tr>
<td>What is the cat feeling?</td>
</tr>
<tr>
<td>(Point to picture 1.)</td>
</tr>
<tr>
<td>(Point to picture 3.)</td>
</tr>
<tr>
<td>(Point to picture 4.)</td>
</tr>
<tr>
<td>(Point to picture 6.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>G-A-O questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bird:</td>
</tr>
<tr>
<td>Goal: What does bird mummy want to do?</td>
</tr>
<tr>
<td>Attempt: Why is the bird mummy flying away?</td>
</tr>
<tr>
<td>Outcome: Why did the bird mummy come back?</td>
</tr>
<tr>
<td>(Point to picture 1.)</td>
</tr>
<tr>
<td>(Point to picture 2.)</td>
</tr>
<tr>
<td>(Point to picture 6.)</td>
</tr>
<tr>
<td>Cat:</td>
</tr>
<tr>
<td>Goal: What do you think the cat want to do?</td>
</tr>
<tr>
<td>Attempt: Why was the cat climbing the tree?</td>
</tr>
<tr>
<td>Outcome: Why didn’t the cat get the chickens?</td>
</tr>
<tr>
<td>(Point to picture 3.)</td>
</tr>
<tr>
<td>(Point to picture 4.)</td>
</tr>
<tr>
<td>(DO NOT point.)</td>
</tr>
<tr>
<td>Dog:</td>
</tr>
<tr>
<td>Goal: What does the dog want? (If necessary, ask: “Why?”)</td>
</tr>
<tr>
<td>Attempt: Why does the dog grab the cat’s tail?</td>
</tr>
<tr>
<td>Outcome: Why did the dog chase the cat away?</td>
</tr>
<tr>
<td>(Point to picture 4.)</td>
</tr>
<tr>
<td>(Point to picture 5.)</td>
</tr>
<tr>
<td>(Point to picture 6.)</td>
</tr>
</tbody>
</table>

Say to the child: Now I want you to tell the story again. Look at the pictures and try to tell the best story you can.
Further instructions

1. Don’t start the story for the child, encourage the child to tell the story by him/herself by saying: *How would you start your story?* or *What do you think is happening in the story?* or *Tell me what happened (point to picture).*

2. Do not name the protagonists. It does not matter what the child decides to call them e.g. bird, dove, etc. It does not matter if the child uses different words to refer the protagonists during the narration. If the child does not know what to call the protagonists and seems stuck or asks you for help, do not give names, but help him/her by asking *What do you think it is?* *What would you call it?* and/or *What does it look like?*

3. Give prompts only when it appears that the child is not going to say anything. For example, if the child is silent in the middle of the story, encourage her/him to continue and tell you more: *Anything else?*, *Continue*, *Tell me some more*, *Let’s see what else happens in the story*, etc.

4. Refrain from
   a. asking questions such as *What is he doing here?, Who is running?* in order not to disrupt or influence the child’s narration allow him/her to use incomplete sentences.
   b. asking questions such as *What’s this?, What/whom do you see on the picture?* in order to avoid deictic references. In some pictures (e.g. Picture 5) where there are different actions occurring (fox running away with fish; bird biting the fox’s tail) the examiner may encourage the child to tell more by a pointing gesture to the other protagonist or action without saying anything. If the child doesn’t react, then ask *Anything else?*

5. After each picture (before putting the next one down), say a code word such as *Good, Fine*, to mark the transition to the next picture. This allows the examiner during the transcription process to assign utterances to a specific picture.

6. If the child forgets the name of an object or an action, ask him/her *What do you think it is?* *What would you call it?* and/or *What does it look like?*

7. If the child starts telling a story from his/her own experiences, e.g. *I saw such a bird in the morning or I will go with my mom to the supermarket after school….*, give the child some time to talk about his own experience and then gently ask to tell the story in the pictures.
Appendix 5: Wordless picture
Appendix 6: Mental state language by Ms. Helena Oosthuisen, Lecturer at the Department of Speech-Language and Hearing Therapy, Faculty of Health Sciences, Stellenbosch University, South Africa. Research Focus: Language variation; Language impairment in a multilingual society; Assessment of child language; Narrative development.

Mental state language

1. **PERCEPTION** (simple perceptual and attentive capacities) and **PHYSIOLOGY**

   - Includes senses of **sight, hearing, taste, smell, skin senses** incl. touch, pain, Temperature; **hunger, thirst, basic states of consciousness** (e.g. awake, alive)

   **Coding conventions**
   - Only coded when referring to a character’s perceptual / attentive capacities, and not when used as an attention getting device (e.g. ‘Look’)
   - Corresponds to Nicolopolou and Richner’s (2007) stage 3B of character representation - Agent

   **Examples:**
   - see hear (feel) hungry
   - (get/be) hurt look / watch (feel) tired
   - injure (yourself) listen sleep
   - wait show (i.e. to let someone see something)

2. **EMOTIONAL STATES**

   - Includes **basic** (primary) and **more complex** (cognitive / secondary) emotions
   - Includes **emotion verbs**, i.e. “transitive actions which initiate emotions in others (e.g. scare, frighten)” (Bamberg & Damrad-Frye, 1991:694) or “emotion-in-action” (Nicolopolou & Richner, 2007)
   - Corresponds to Nicolopolou & Richner’s (2007) Level 4B and 5B of character representation – Agent

   **Coding conventions**
   - ‘cry’ was not scored as it is likely to be a picture description
   - Social phrases like ‘don’t worry’ (typically used with character speech) were not scored since it was judged not to be a true reference to the emotional state of a character.

   **Examples:**

<table>
<thead>
<tr>
<th>Simple / generalised emotions and emotional reactions</th>
<th>Complex ‘cognitive’ emotions (incl. emotion verbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>sad</td>
<td>bored / boring</td>
</tr>
<tr>
<td>angry / cross / anger</td>
<td>tired (e.g. of playing)</td>
</tr>
<tr>
<td>scared</td>
<td>worried (NOT don’t worry)</td>
</tr>
<tr>
<td>(feel) bad</td>
<td>curious</td>
</tr>
<tr>
<td>happy</td>
<td>irritated</td>
</tr>
<tr>
<td>scared / frightened / get a fright</td>
<td>(feel) guilty</td>
</tr>
<tr>
<td>scare</td>
<td>disappointed</td>
</tr>
<tr>
<td>(feel / be) happy</td>
<td>anxious</td>
</tr>
<tr>
<td>console</td>
<td></td>
</tr>
</tbody>
</table>
3. METALINGUISTIC

- Refers to various acts of speaking and communication
- This was typically indicated straightforwardly through the use of **metalinguistic verbs** (e.g. say, ask, shout)
- Includes use of ‘**character speech**’ – i.e. direct as well as indirect statements of a character (*Bamberg & Damrad-Frye, 1991:694*), e.g.

  (direct statement)
  ‘The boy says: ‘Look here is a nest.’

  (indirect statement)
  ‘Then the boy said to/told his sister that there is a nest.’

- Corresponds roughly to Nicolopolou and Richner’s (2007) Level 6 of character representation – Persons

**Coding conventions**
- If the child used a metalinguistic verb together with character speech (as in the first example above), coding was only done once, for the metalinguistic verb.
- Coding was also done **within** the speech act / character speech, e.g.

  ‘*Then the boy said: “I see a nest!”*’
  
  [metalinguistic]       [perception]

**Examples:**

<table>
<thead>
<tr>
<th>say</th>
<th>tell</th>
</tr>
</thead>
<tbody>
<tr>
<td>call</td>
<td>talk / speak</td>
</tr>
<tr>
<td>scold</td>
<td>answer</td>
</tr>
<tr>
<td>shout / shout out</td>
<td>ask</td>
</tr>
<tr>
<td>watch out!</td>
<td>Warn</td>
</tr>
<tr>
<td>complain</td>
<td></td>
</tr>
</tbody>
</table>

4. METACOGNITIVE

- Terms that make direct reference to cognitive states or processes (*Furrow, Moore, Davidge & Chiasson, 1992:618*)
- Reference to ideas, understandings, thoughts, beliefs of characters (*Benson, 1997:5*)

  including **volition** terms (e.g. hope/wish), **desire** terms (want), **intention** or **goal** (will, going to, try) – or any words or phrases that clearly indicate characters’ intentions, e.g:

  Then the boy said: “Why don’t we borrow the neighbour’s ladder?”

  Then they said that they will never do it again.
Then they thought they have to go and play outside. (x2)

(note that in this context ‘have to’ indicates intention, not (moral) obligation like in category 5)

Then they decided to go and play ball with the ball outside. (x2)

• Corresponds to Nicolopolou & Richner’s (2007) Level 6-8 of character representation – Person. Explanation and examples of level 6-8:

**PERSONS** have higher psychological capacities that include representational desires, intentions, or beliefs that become coordinated—implicitly or explicitly—with action, with reality, and/or with other characters that have representational capacities.

Level 6. Explicit Desire and/or Belief Representations: Characters have representational desires, beliefs, or intentions, implicitly but not explicitly coordinated with actions.

*Once puffin paddled along the pond. The raccoon walked along. The puffin started flying when he saw raccoon. And then he came to the pond, and puffin was swimming in there. And then puffin knew it wasn’t afraid. And then raccoon just standed there. And then puffin waddled off. […]* (Leila, 4–9)

Level 7. Explicit Coordination of Representational Mental States with Action: Characters’ representational desires, beliefs, or intentions explicitly that motivate and/or direct their actions.

*Once upon a time a prince lived in a castle. And one night a woman came and offered him a rose. But the prince didn’t want the rose. And she turned him into a beast and she put a spell on the castle and all who lived there. And in a town near nearby, there lives a man named Gaston and a beautiful girl named Belle. Gaston wanted to kill the beast. And they went to the castle and killed the beast.* (Ethan, 5–1)

Level 8. Contrastive Representations. Persons’ representational beliefs or desires are contrasted, equated, or coordinated either with reality, with those of other persons, or with their own previous or future representations.

*Once upon a time there was a kingdom. There was a king and a queen and a princess. One time they all went walking in the woods and they got lost. There was a witch in their house. When they came home they said, “My, everything looks different.” And the witch jumped out and said, “Surprise!” One time when the little girl (princess), was sleeping, the witch came in her room and scared her. And she woke up and the witch ran away and the girl said, “Oh, there’s nothing here.” And the witch came back and knocked on her door and there was no one there and she said, “Oh, there’s no one knocking on my door either.” Later when she woke up, she was terribly cranky because she didn’t have enough sleep. When her parents saw her being so cranky in her room, she couldn’t go to school and this was her favorite day. She said, “Mom it’s not really my fault. A witch comed in my room.” But her Mom didn’t believe in witches. The End.* (Sarah, 4–8) (Nicolopolou & Richner, 2007, p. 418)

**Examples:**

<table>
<thead>
<tr>
<th>want</th>
<th>think</th>
<th>dream</th>
</tr>
</thead>
<tbody>
<tr>
<td>need/want (something)</td>
<td>decide</td>
<td>remember</td>
</tr>
<tr>
<td>try</td>
<td>know</td>
<td>think of a plan</td>
</tr>
<tr>
<td>can / could (e.g. he couldn’t reach)</td>
<td>believe</td>
<td></td>
</tr>
<tr>
<td>get / have an idea/plan/thought</td>
<td>by accident</td>
<td></td>
</tr>
<tr>
<td>wonder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>will (e.g. we will have to put on a bandage)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>make / be sure</td>
<td>find out (and then the doctor found out that his arm is broken)</td>
<td></td>
</tr>
</tbody>
</table>
5. OTHER ABSTRACTIONS AND EVALUATIONS

Coding conventions
This category includes the following:

- **Abstractions or evaluations related to LoC (landscape of consciousness)** that do not fall under the first four categories but by which the child (narrator) clearly evaluates the behaviour or actions of story characters.
  
  - naughty
  - good
  - rude
  
  then the mother scolded them because they were playing so rough
  then the boy kicked the ball too high
  your arm will be better/ready/OK in a week’s time
  wrong (e.g. Then the mother asked: ‘What’s wrong?’ / she didn’t know what was wrong)
  […] because they weren’t thinking right
  maybe

- Terms expressing **(moral) obligation**, including reference to someone learning a lesson or being punished (also see allowance / non-allowance below)
  
  - should / shouldn’t
  - You don’t have to kick so high
  - They just have to be cautious
  
  Then he said: “Just be cautious.”
  And then he said: “Just bring it back again please.”
  You must never do it again.
  They went out without her permission.
  I hope you’ve learned your lesson!
  You’re not allowed to go out for a week.

- **Allowance / non-allowance**
  
  - We can ask him if he will lend us his ladder.
  - You can/may borrow it / You can’t go outside again
  - allow

- **Explicit contrasting of the different perspectives of characters**
  
  - Then only the girl saw the crow and tried to warn the boy.
  - But the boy didn’t see it. (2x) (also ‘tried'[4], ‘warn'[3] and ‘see[1]’ is scored here)

- **Predictions**
  
  - E.g. Then she said: “The mommy could maybe come back and be very angry.”
  - “Watch out! The eagle is going to peck you.”
  
  With this the child is not referring to the intention of the eagle, but is rather making a prediction of what might possibly happen/how the eagle will act.
  
  Then she said” “Don’t touch the egg, you’ll get in trouble.” (here also code for ‘don’t touch’ [5])

**Exceptions**
- If child used have to/must to imply intention rather than true obligation, it was coded under category 4:
Then they thought they have to go and play outside a bit (i.e. they want to/are going to play outside)
Then mommy said: “We have to get you to a hospital.” (i.e. intention)
Then they thought they have to go and borrow a ladder from the neighbour.
Then the brother said they have to get/fetch the ladder from the neighbour.

Main references:


Pruning and segmentation

THE PRUNING PROCESS
Pruning and segmentation to prepare the transcribed narrative data for the different analyses were done. To prepare the data for micro- and macrostructural and mental state analyses, all unintelligible utterances, speech disruptions, incomplete utterances and other superfluous utterances were identified and discarded.

SEGMENTATION INTO T-UNITS
The transcriptions were prepared for micro and macrostructural and mental state analyses by segmentation into T-units. A T-unit comprises a main clause with all its concomitant subordinate clauses and phrases. Co-ordinate clauses are always clauses themselves, while subordinate clauses form part of a T-unit.

Segmentation into T-units was done by drawing a slash line at the end of each T-unit, including the last one. When 2 T-units were joined by a co-ordinating conjunction, the line was drawn through the conjunction,

- the dove flies down and he saves the ant (2 T-units)
- the dove flies down and saves the ant (1 T-unit)

CODING CONVENTIONS
a) In the case of direct or indirect speech, the he says part, and what followed were coded as 1 T-unit,
   - he says: I’m going to help you
   - thank you that you helped me, he says

b) Where verbless retrospective expansions formed part of the T-unit in question, it was coded as 1 T-unit
   - he threw the leaf down, for the ant

c) And was not coded as a segmentation in the following cases:
   - where it did not fall between 2 T-units
     - the dove and the ant were very happy
   - when a verb was repeated for effect
     - he swam and swam
   - when a single action was expressed by two verbs
     - he sits and looks at the ant
   - when conjunction-reduction occurred (i.e. when the subject of the second clause was omitted)
     - he plucked off the leave and threw it down at the ant
Appendix 8: Microstructural analyses

Microstructure analyses:
Productivity, lexical diversity and syntactic complexity

After the narrative data were segmented into T-units the following microstructural analyses were performed:

1. **PRODUCTIVITY**
   a) **Total Number of Words (TNW)**
   To calculate the TNW, all deletions, speech disruptions, and co-ordinating conjunctions were discarded. The remaining words per narrative were counted to compile the TNW. Contractions such as ‘he had’ and ‘there’s’ were counted as two words. Compound words such as *hairbrush* were counted as one word.

   b) **Total number of T-units**
   All the slash lines at the end of each T-unit, including the last one, were added up to compile the total number of T-units per narrative.

2. **LEXICAL DIVERSITY**
   a) **Number of Different Words (NDW)**
   To calculate the NDW, all the different words in each narrative were written down on an alphabetised scoring sheet. The alphabetical columns made it possible to determine if a particular word had already been written down.

   **Coding conventions**
   - in general, all words that were spelt differently, were counted as two words
   - contractions such as ‘there’s’ were counted as two words.
   - compound words such as *hairbrush* were counted as one word
   - singulars and their corresponding plurals, such as ‘leaf – leaves’, were counted as two words
   - infinitives and their corresponding participles, such as, ‘walk – walked’, were counted as two words

3. **SYNTACTIC COMPLEXITY**
   To investigate the syntactical complexity of the narratives produced a measurement of number of words per T-unit was completed.

   a) **Number of words per T-unit**
   **Coding conventions**
   - all the slash lines indicating T-units were added up
   - to determine the number of words per T-unit, the TNW, calculated earlier, were divided by the number of T-units
   - numbers were rounded off to one decimal place.
Appendix 9: Macrostructural analyses

Macrostructure analyses: Structural complexity

GENERAL PRINCIPLES
Following Westby (2005) the main decision in episodic analysis of the narratives related to the stated goal-directed behaviour (GDB) of the protagonists in the episodes. An episode schema consists of problems faced by a character, his plans, goals and actions to overcome or solve the problem, and the consequences of these actions in terms of the success or failure in attaining the goal. A narrative was coded as an episode if it contained a motive of a character, followed by goal-directed behaviour, and resulted in a consequence related to the attainment of the goal.

BINARY DECISION TREE (adapted from Westby, 2005)

<table>
<thead>
<tr>
<th>Does the narrative imply goal-directed behaviour?</th>
<th>NO ➔</th>
<th>Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is planning explicit?</td>
<td>NO ➔ but planning can be inferred; narrative contains motives (IE), actions (A) and consequences (DR, R)</td>
<td>Abbreviated episode</td>
</tr>
<tr>
<td>Does the narrative contain motives (IE), goal-directed actions (IP, A) and consequences (DR, R)?</td>
<td>NO ➔ no consequence related to attainment/non-attainment of goals</td>
<td>Incomplete episode</td>
</tr>
<tr>
<td>Does the narrative describe events from the perspectives from both characters with goals stated for both characters?</td>
<td>NO ➔</td>
<td>Complete episode</td>
</tr>
<tr>
<td>YES ➔</td>
<td></td>
<td>Interactive episode</td>
</tr>
</tbody>
</table>
Appendix 10: Two transcription samples

Child 10
E = Examiner, C = Child, XX = unintelligible speech

Narrative 1
E:… Look at the pictures and try to tell the best story you can.
C: The birds was shouting at the mommy.
E: Yeah the birds were shouting at the mommy! Good.
C: And so the cat came and so the mommy fly away.
E: Yeah! Good.
C: Then the cat wanted to eat them.
E: Yeah. Good.
C: Then the dog came, to save the birds.
E: To save the birds. Yeah. Good.
C: And so they pulled the cat off.
E: Yeah. Pulled the cat off! Mm.
C: Off.
E: Yeah. Anything else? (Waits) No?
C: And so the birds looked down.
E: Yeah the birds looked down. Yeah, that’s true.
C: And so they chased the cat away until the mommy bird gave them some food.
E: Yeah! That’s the whole story. And now I’m going to ask you some questions about the story.

Mental states:
E: And what are the baby birds feeling?
C: They wanna to eat.
E: They wanna eat, yeah. And what do you think the cat says?
C: Try to eat ‘em.
E: Try to eat them. And what does the dog think?
C: To save the birds.
E: To save the birds. And what is the cat feeling?
C: To run.
E: To run.

GAO-questions:
E: And what does bird mommy want to do?
C: Ehm.. give them some food.
E: Give them some food! And why is the bird mommy flying away?
C: Because she’s going to fetch some food.
E: Mm. And why did the bird mommy come back?
C: ‘Cause the food is… ‘Cause she bring the food.
E: She bring the food. And what do you think the cat want to do?
C: Eat.. them.
E: Eat them. And why was the cat climbing the tree?
C: Because…he was gonna eat them quick.
E: Mhm. Was-
C: Before the dog…
E: Yeah.
C: ..and pull him off.
E: Oh yeah.He was gonna eat them quick before the dog pulls him off huh.Yeah. And why didn’t the cat get the baby birds?
C: Ehm..Because the dog.. pull his tail.
E: Yeah. And why did the he pull his tail?
C: Ehm.. ‘cause he mustn’t eat the birds
E: Mm.
C:..cause it’s babies.
E: Yeah. And why did the dog chase the cat away?
C: ‘Cause the mommy bird was gonna bring food.
E: Mm. Yeah. And why did the dog grab the cat’s tail?
C: Because… he was scratching that thing off.
E: Mhm. Okey. And now.. now I want you to tell the story again,

**Narrative 2**

E: So look at the pictures and try to tell the best story you can.
C: Ehm.. the birds was shouting and so the birds were shouting at the mom, because they were hungry.
E: Oh, they were shouting at the mom. Good.
C: And so the cat came. And so the bird was cross.
E: Aha. (Pointing at the bird.)
C: Then the bird was flying away.
E: Yeah. Good.
C:’Cause the cat, the cat almost wanted to eat them and so the dog came.
E: Yeah the cat almost wanted to eat them. Good.
C: And so the cat climbed quickly, before the dog ’s gonna get him.
E: Mhm. Good.
C: And so the cat was scratching, on the nest and the dog was gonna fall, but he didn’t. And so the bird was looking down.
E: Yeah. So he was scratching on the nest. Mm. Anything else?
C: Nu-uh.
E: (Put picture 6.)
C: And so the bird came and give them food. And so the dog chase him away, the cat.
E: Yeah. Well done. That’s the whole story. That’s all for today. You did a really good job.
Child 14

E = Examiner, C = Child, XX = unintelligible speech

Narrative 1
E://… Look at the pictures and try to tell the best story you can.
C: Once upon a time there was a mother bird and baby birds.
E: Good!
C: And then the baby birds were hungry and then the mother went away to go get food and then the cat came.
E: Good.
C: And then the cat decided he wanted to take them down of the tree and eat them.
E: Good.
C: And then the dog wanted to save the baby birds and wanted to chase him.
E: Mm.
C: And then he bite his tail and then he, little cat, fall down.
E: Good.
C: And then the dog chase the cat away and then the mother bird come back to the baby bird.
E: Good! Are you finished? That was the whole story and now I’m going to ask you some questions about the story.

Mental states:
E: And what are the baby birds feeling?
C: Hungry.
E: Yeah. And what do you think the cat says?
C: The cat- The cat want to eat them also.
E: And what does the dog think?
C: The dog thinks he must get away from other animals.
E: Get away from other animals? Yeah. And what is the cat feeling?
C: The cat’s feeling scared of the dog chasing him.
E: Mm.

GAO-questions:
E: And what does bird mommy want to do?
C: He wants to give them food.
E: Yeah so why is the bird mommy flying away?
C: Because he wanted that food.
E: Yeah. And why did the bird mommy come back?
C: Come back… to give the baby bird food.
E: Yeah! And what do you think the cat want to do?
C: Eat them.
E: Yeah. And why was the cat climbing the tree?
C: To get them off and the dog feel unhappy.
E: Yeah. And why didn’t the cat get the baby birds?
Because the dog pulled his tail.
Mm. And what does the dog want?
The dog...
What does the dog want?
He wants to chase the cat away.
Yeah. Why?
Because- because the baby birds don’t want to get eaten.
Yea, they don’t want to get eaten. And why does the dog grab the cat’s tail?
Because he must get away.
Yeah. And why did the dog chase the cat away?
Because he must get away from – he must never get- he must never eat baby birds.
Yeah! And now.. now I want you to tell the story again,
Narrative 2
So look at the pictures and try to tell the best story you can.
Once upon a time there was a mother bird and the baby bird. Then the baby birds were feeling hungry and then the mother bird get some food.
The cat decided to clime on the tree and try to grab baby birds and the mother bird flew away to get some food.
Yeah!
The cat was happy that the mother bird didn’t come and the baby bird were hanging in the tree and then the cat wanted to take them down and eat them.
Yeah.
The dog was worrying cause they wanted to take the baby birds down on the tree and eat them.
Mm. good.
And then the cat pulled his tail and it pulled it down
Good.
And then the dog chase him away and then the mother bird came back to the baby birds
Good. Well done! That was all for today.... //
Good! Well done. You told the story twice. That’s all for today.