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Young South African children's recognition of emotions as depicted by Picture Communication Symbols.

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ABSTRACT

YOUNG SOUTH AFRICAN CHILDREN'S RECOGNITION OF EMOTIONS AS DEPICTED BY PICTURE COMMUNICATION SYMBOLS.

Experiencing and expressing emotions is an essential part of psychological well-being. It is for this reason that most graphic symbol sets used in the field of AAC include an array of symbols depicting emotions. However, to date, very limited research has been done on children's ability to recognise and use these symbols to express feelings within different cultural contexts.

The purpose of the current study was to describe and compare Afrikaans and Sepedi speaking grade R children's choice of graphic symbols when depicting four basic emotions, i.e. *happy*; *sad*; *afraid*; and *angry*. After ninety participants (44 Afrikaans and 46 Sepedi speaking) passed a pre-assessment task, they were exposed 24 emotions vignettes. Participants had to indicate the intensity the protagonist in the story would experience. The next step was for the participants to choose a graphic symbol from a 16 matrix overlay which they thought best represented the symbol and intensity.

The results indicated a significant difference at a 1% level between the two groups' selection of expected symbols to represent emotions. Afrikaans speaking participants more often chose expected symbols than Sepedi speaking participants to represent different basic emotions. Sepedi speaking participants made use of a larger variety of symbols to represent the emotions. Participants from both language groups most frequently selected expected symbols to represent *happy* followed by those for *angry* and *afraid* with expected symbols for *sad* selected least frequently.

Except for a significant difference at the 1% level for happy no significant differences were present between the intensities selected by the different language groups for the other three basic emotions. No significant differences between the two gender groups' choices of expected symbols to represent emotions or between the intensities selected by the different gender groups were observed.

Key terms

Basic emotions; Emotions; Emotion knowledge; Emotion situation knowledge; Expected symbols; Graphic symbols Picture Communication Symbols (PCS) ™[1]; Preferred symbols; Unexpected symbols.

[1] PCS™ is a Mayer-Johnson product.

OPSOMMING

JONG SUID-AFRIKAANSE KINDERS SE HERKENNING VAN EMOSIES SOOS UITGEBEELD DEUR 'PICTURE COMMUNICATION SYMBOLS'

Om emosies te ervaar en daaroor te praat is 'n wesenlike deel van 'n mens se psigiese gesondheid. Juis om hierdie rede bevat meeste simbool sisteme in die veld vanAanvullende en Alternatiewe Kommunikasie grafiese simbole om emosies uit te beeld. Tot op hede is daar egter weinig navorsing gedoen oor die vermoë van kinders om hierdie simbole te herken en te gebruik om hulle gevoelens uit te druk.

Die doel van die huidige studie was om graad R Afrikaans- en Sepedi-sprekers se keuse van grafiese simbole wat emosies (*gelukkig*, *hartseer*, *bang* en *kwaad*) verteenwoordig te beskryf en vergelyk. The purpose of the current study was to describe and vergelycompare. Negentig kinders (44 Afrikaans en 46 Sepedi sprekers) is na afloop van 'n voor-toets prosedure aan 24 emosies storie blootgestel. Hulle moes eers die intensitiet aandui wat hulle dink die hoofrolspeler in die storie ervaar en daarna op 'n kommunikasiebord, met 16 simbole wat emosies verteenwoordig, aandui watter simbool hulle dink die emosie die beste verteenwoordig.

Die resultate dui op 'n beduidende verskil tussen die twee taalgroepe se keuse van verwagte simbole om die emosies te verteenwoordig. Afrikaans sprekers het meer gereeld as die Sepedi sprekers die verwagte simbole gekies. Sepedi-sprekers het van 'n groter verskyneheid simbole gebruik gemaak om die emosies te verteenwoordig. Beide groepe het die hoogste frekwensie verwagte simbole gefies om gelukkig te verteenwoordig, gevolg deur kwaad, bang en hartseer.

Behalwe vir ‘n beduidende verskil by gelukkig was daar geen verdere verskille tussen die twee groepe met betrekking tot intensiteit nie. Geen beduidende verskille was teenwoordig by die verskillende geslagte vir die keuse van verwagte simbole of die intensitiet

Sleutelterme

Basiese emosies; Emosionele kennis; Emosionele situasie kennis; Emosies; Grafiese simbole; Onverwagte simbole; Picture Communication Symbols (PCS);Verwagte simbole; Verkose simbole

TABLE OF CONTENTS

ACKNOWLEDGEMENTS i
ABSTRACT ii
YOUNG SOUTH AFRICAN CHILDREN'S RECOGNITION OF EMOTIONS AS DEPICTED BY PICTURE COMMUNICATION SYMBOLS. iii
Key Terms iv
OPSOMMING v
JONG SUID-AFRIKAANSE KINDERS SE HERKENNING VAN EMOSIES SOOS UITGEBEELD DEUR "PICTURE COMMUNICATION SYMBOLS" v
Sleutelkonsepte vi
CHAPTER 1 1
INTRODUCTION 1
1.1. Introduction 1
1.2. Problem Statement 1
1.3. Definitions of terms 3
1.4. Abbreviations 4
1.5. Chapter outline 4
1.6. Summary 5
CHAPTER 2 6
EMOTION, EMOTIONAL KNOWLEDGE AND GRAPHIC REPRESENTATION OF EMOTIONS 6
2.1. Introduction 6
2.2. The construct of emotion 6
2.3. Development of emotions in children 8
2.4. Emotional knowledge 11
2.5. Studies on the visual perception of emotions 15
2.6. Graphic symbols depicting basic emotions 18
2.7. Summary 23
CHAPTER 3 24
RESEARCH METHODOLOGY 24
3.1. Introduction 24
3.2. Aims 24
3.2.1. Main aim 24
3.2.2. Sub-aims 24
3.2.2.1. Sub-aim 1 24
3.2.2.2. Sub-aim 2 24
3.3. Research design 24
3.4. Definition of terms used in the sub-aims and research design 25
3.5. Phases of the study 25
3.6. Development of the material 26
3.6.1. Selection of emotions 26
3.6.2. Selection of symbols depicting emotions 26
3.6.3. Selection of vignettes 28
3.6.4. Strategy for indicating intensity 30
3.6.5. Pre-assessment task 30
3.6.6. Translation 31
3.7. Pilot study 32
3.8. Main study 36
3.8.1. Description of participating schools 36

3.8.2. Selection and description of participants 36
3.9. Research assistant 38
3.10. Material 38
3.11. Procedures 39
3.11.1. General procedures 39
3.11.2. Data collection procedures 40
3.12. Reliability 42
3.12.1. Procedural integrity 42
3.12.2. Integrity of data collection 43
3.13. Analysis of data 43
3.14. Summary 44
CHAPTER 4 45
RESULTS 45
4.1. Introduction 45
4.2. Missing data 46
4.3. Statistical comparison between Afrikaans and Sepedi speaking participants with regard to expected and unexpected symbols selected to represent basic emotions 46
4.4. Description and comparison of expected and unexpected choices of graphic symbols across the two language groups 47
4.4.1. Symbols representing *happy* 47
4.4.2. Symbols representing *angry* 48
4.4.3. Symbols representing *afraid* 49
4.4.4. Symbols representing *sad* 50
4.5. Description and comparison of expected and unexpected choices of graphic symbols to represent the basic emotions per vignettes across language groups 51
4.6. Description and comparison of expected and unexpected choices of graphic symbols across gender groups 53
4.7. Description and comparison of intensity ratings of vignettes in relation to basic emotions across language and gender groups 54
4.8. Most preferred symbols to represent *happy*, *angry*, *afraid* and *sad* 55
4.9. Conclusion 56
4.10. Summary 56
CHAPTER 5 57
DISCUSSION 57
5.1. Introduction 57
5.2. Choice of expected and unexpected symbols 57
5.3. Most preferred symbols to represent the emotions 59
5.3.1. Symbols representing *happy* 60
5.3.2. Symbols representing *angry* 60
5.3.3. Symbols representing *afraid* 61
5.3.4. Symbols representing *sad* 62
5.4. Intensity ratings of vignettes in relation to basic emotion across language and gender groups 63
5.5. Gender groups 64
5.6. Summary 64 64
CHAPTER 6 65
CONCLUSIONS, EVALUATIONS AND RECOMMENDATIONS 65
6.1. Introduction 65

6.2. Conclusions..... 65
6.3. Clinical implications..... 66
6.4. Evaluation of the study..... 66
6.5. Recommendations for future research..... 67
6.6. Summary..... 68
REFERENCES..... 69
APPENDICES..... 81

LIST OF TABLES

Table 3.1.	Symbols used to represent 4 basic emotions in the current study.....	28
Table 3.2.	Steps taken to translate Afrikaans protocol into Sepedi.....	31
Table 3.3.	Pilot study objectives, results and recommendations.....	33
Table 3.4.	Equivalence of language group in term of gender and age.....	38
Table 3.5.	Procedures used to analyze data.....	44
Table 4.1.	Missing data.....	46
Table 4.2.	Differences between Afrikaans and Sepedi participants with regard to the expected symbols selected to represent basic emotions.....	46
Table 4.3.	Expected and unexpected symbols selected by Afrikaans- and Sepedi-speaking participants to represent *happy*.....	47
Table 4.4.	Expected and unexpected symbols selected by Afrikaans- and Sepedi-speaking participants to represent *angry*.....	48
Table 4.5.	Expected and unexpected symbols selected by Afrikaans- and Sepedi-speaking participants to represent *afraid*.....	50
Table 4.6.	Expected and unexpected symbols selected by Afrikaans- and Sepedi-speaking participants to represent *sad*.....	51
Table 4.7.	Differences in number of expected and unexpected symbols selected per vignette with regard to language.....	52
Table 4.8.	Expected symbols selected: Comparison of means across gender groups.....	53
Table 4.9.	Intensities selected: Comparison of means across language groups.....	54
Table 4.10.	Intensities selected: Comparison of means across gender groups.....	54
Table 4.11.	Symbols preferred most to represent happy, angry, afraid and sad.....	55

LIST OF FIGURES

Figure 2.1.	Schematic emergence of emotion labels.....	10
Figure 4.1.	Schematic representation of the contents of Chapter 4.....	45

LIST OF APPENDICES

Appendix A.	Copy of the ethical clearance document received from the Humanities ethics committee	81
Appendix B.	Copy of the letter to the relevant authorities requesting permission to conduct the study in the Waterberg District of the Limpopo Province	83
Appendix C.	Copy of the document received from the Department of Health and Social Developement granting permission to conduct study in the Waterberg District of the Limpopo Province	85
Appendix D.	Letter to schools to introduce the study and obtain permission to conduct the study in schools	87
Appendix E	English, Afrikaans and Sepedi version of the letter and questionnaire sent to parents	89
Appendix E1	English Version	89
Appendix E2	Afrikaans Version	93
Appendix E3	Sepedi Version	97
Appendix F	Symbols used in Visser et al. (2008)	100
Appendix G	Synonyms	101
Appendix H.	Symbols with all possible labels	103
Appendix I.	Possible symbols for *happy*	107
Appendix J	Possible symbols for negative emotions	108
Appendix K.	The process of selecting the sixteen specific symbols chosen to represent each of the four basic emotions	112
Appendix L.	Questionnaires to teachers to rate vignettes from most to least familiar	117
Appendix M.	Teacher's agreement on symbols	118
Appendix N.	51 vignettes used as basis for the development of vignettes used in the current study	199
Appendix O.	Questionnaires handed out during the development of vignettes	124
Appendix O1.	Questionnaire handed out to professionals with research background	124
Appendix O2.	Questionnaire handed out to six Speech, language therapists	128
Appendix O3.	Questionnaire handed out to teachers	137
Appendix P.	Questionnaire to speech, language therapist to check translation from English to Afrikaans	146
Appendix Q.	Questionnaire to teachers to rate vignettes from most to least familiar situations	150
Appendix R.	The 24 vignettes to be used in the current study	152
Appendix S.	Intensity scale	153
Appendix T.	Changes made to the protocol during pilot process	154
Appendix U.	Minor changes made to the pre-assessment	155
Appendix V.	Overlays and record sheet	158
Appendix W.	English, Afrikaans and Sepedi versions of the protocol	161
Appendix W1.	English Version	161
Appendix W2.	Afrikaans Version	171
Appendix W3.	Sepedi Version	179
Appendix X.	Rating forms used by independent raters	186
Appendix X1.	Afrikaans Version	186
Appendix X2.	Sepedi Version	192

Appendix Y. Tables presenting expected and unexpected symbols chosen by participants to represent basic emotions..... 194

CHAPTER 1

PROBLEM STATEMENT

1.1. Introduction

This chapter presents a brief outline of the study. Firstly a concise problem statement is presented, followed by definitions of relevant and important terms. The chapter concludes with a brief outline of each chapter.

1.2. Problem Statement

Experiencing and expressing emotion lies at the core of being human. It is important for the psychological well-being of individuals that they are able to express the emotions they are experiencing, as well as communicate about these emotions (Johnson, 1997).

Emotional development takes place from birth and continues through primary school and into adulthood; following different stages and forming the foundation of all learning (Greenspan, 2004). In the second half of a typically developing child's first year he is able to show emotion as well as perceive and respond to it. Although emotion is an abstract concept, typically developing children as young as three are with exposure and practise able to infer basic emotions from facial expressions. At age three, typically developing children start to develop the ability to conceptualize and name different emotions (Greenspan, 2004). They are able to express emotions symbolically by using spoken language.

Information about our inner states is often revealed through one or more of five basic channels: facial expressions, eye contact, body movement, posture and touching (Baron & Byrne, 1979). Facial expression of emotions is crucial to the development and regulation of interpersonal relationships (Ekman, 1999a). Some authors regard recognizing basic emotions from facial expressions as a universal phenomenon (Elfenbein & Ambady, 2003; Ekman, 1994; Izard, 1994); while other authors (Boyatizis, Chazan, & Ting, 1993) caution that cultural differences and differences between individuals also play a role and should be taken into account whenever discussing emotions and the facial expressions linked to the emotion.

However, children with little or no functional speech (LNFS) may have some difficulty expressing their emotions for a variety of reasons. A possible strategy to assist these children with LNFS to communicate is an aided strategy in the field of Augmentative and Alternative

Communication (AAC). Many aided strategy refer to the use of graphic symbols to represent the concepts symbolically. Graphic symbols are two dimensional line drawings and can be pictorial or more abstract. Picture Communication Symbols (PCS) is an example of pictorial symbols where the symbols are line drawings with a strong visual link between the objects and concepts being represented and the drawings. The nature of pictorial graphic symbols selected to represent concepts, especially non-picture producers, and whether these pictorial graphic symbols can successfully depict language needs to be continually debated. Research studies over the years have indicated that children (in many instances, but not exclusively typically developing children) relate to graphic symbols differently from the way adults and developers of graphic symbol sets and systems anticipated the children would relate to these graphic symbols (Basson & Alant, 2005; Haupt & Alant, 2002; Moolman & Alant, 1997).

As children with little or no functional speech is such a heterogeneous group initial research in different areas in the field of AAC, use typically developing children as participants. Once researchers have a better understanding of the researched area, their results can be used as the foundation for further research with different and more heterogeneous participants.

In the fields of psychology and anthropology extensive research has been done on how different age and cultural groups interpret different emotions. The material to represent emotions in most of these studies was photographs with a few studies developing line or schematic drawings to represent the emotions (MacDonald & Kirkpatrick, 1996). In pictorial graphic symbol sets emotions are traditionally represented by line drawings of different facial expressions, but little research has been conducted to establish whether children view the graphic symbols depicting emotion the same way adults do. Preliminary results indicate that the available graphic symbols depicting emotions are not always recognized by children as depicting the emotion assigned to the graphic symbol by the developers of these graphic symbol set / systems. A study by Visser, Alant and Harty (2008) found that certain graphic symbols representing emotions may be more difficult for preschoolers to recognize than others.

There is a paucity of knowledge with regard to how, even typically developing, children relate to graphic symbols representing emotions. No known studies are available on how children from different language backgrounds relate to these graphic symbols representing emotions. This study therefore endeavours to determine and compare how typically

developing 5 to 6 year old South African Children from two different indigenous languages namely Afrikaans and Sepedi relate to PCS depicting four basic emotions, i.e. *happy sad, angry* and *afraid*.

1.3. Definition of term:

Basic emotions are the more observable emotions (Baron-Cohen, et al., 1996) and are used to provide explanations for some routine observations about emotions like the fact that some emotions appear to exist in all cultures and that some emotions appear to be universally associated with and recognizable by characteristic facial expressions (Ortony & Turner, 1990). Four basic emotions were used in the current study, i.e. *happy*, *sad*, *angry* and *afraid*. According to development literature these labels for these symbols emerge first.

Emotions are viewed as concepts used by human beings to interpret and organize experience; the conceptual knowledge used to understand and classify emotional experiences is derived from and mirrors actual past experiences (Stein & Trabasso, 1992).

Emotion knowledge is the term referring to children's understanding of emotions (Bennett, Bendersky, & Lewis, 2005; Izard, et al., 2001). Some authors refer to *emotion knowledge* as *emotion understanding* (Cowell & Hart, 2006; Denham, Zoller, Couchoud, 1994) and encompasses emotional expression identification, emotion language and emotion situation knowledge.

Emotion situation knowledge refers to knowledge about situational antecedents of emotions (Wang, 2003) and encompasses the ability to infer other's emotions from situational cues (Fine, Izard, & Trentacosta, 2006). Psychologists have referred to such knowledge as emotional scripts, affective schemata and the link between situations and emotions (Denham, et al., 1994; Wang, 2003).

Expected symbols in this study refer to any of the 4 PCS, on the presented overlay, systematically identified to represent a specific basic emotion. Due to the nature of the task, the selection of an expected symbol should not be considered as more correct than the selection of an unexpected symbol.

Graphic symbols can be defined as a visual symbol that represents a referent to convey a meaning (Lloyd, Fuller, & Arvison, 1997). In this study a g*raphic symbol* is a two-dimensional pictorial representation.

Picture Communication Symbols (PCS) is a large set of aided symbols composed largely of simple pictorial line drawings (Lloyd, et al., 1997). PCS is a limited set with no rules to facilitate possible further expansion of the set.

Preferred symbols can be defined as the particular symbols most of the participants selected to represent the emotions. Preferred symbols can be either expected or unexpected symbols.

Unexpected symbols in this study refer to any PCS on the presented overlay which is not one of the expected symbols of the target emotion.

1.4. Abbreviations

AAC	Augmentative and Alternative Communication
LNFS	Little of no functional speech
PCS	Picture Communication Symbols

1.5. Chapter outline

Chapter 1 briefly presents an introduction to the study as well as the problem statement. It offers an outline of each chapter and explains important terms and abbreviations used throughout the study.

The theoretical background is the focus of *Chapter 2*. Important concepts mentioned in the first chapter are expanded on. These concepts are emotion, basic emotions, emotion knowledge (emotional expression identification, emotion language and emotion situation knowledge) and emotion development. In addition, relevant research on emotion knowledge, development of emotions, perception of emotions, and literature is critically discussed.

Chapter 3 presents the research methodology. The aims of the study are described in detail. The research design, participant selection, participants, material, development of material, pilot study results, data collection procedures, data analysis procedures as well as reliability data for procedural and data collection is presented.

In *Chapter 4* the results obtained in the study are presented in correspondence with the main and sub-aims which was to describe and compare Afrikaans- and Sepedi-speaking grade R children's choice of graphic symbols when depicting four basic emotions: happy, sad, afraid and angry.

Chapter 5 offers a discussion of the results as presented in Chapter 4. Possible reasons for significant differences are discussed as well as possible reasons for the lack of significant differences. The developmental model for emotional development is used as a reference to discuss the results. In addition a discussion of the graphic symbols in terms of facial features is presented.

Chapter 6 integrates the discussed results. The study is critically evaluated and recommendations for further studies are made. The strengths and weaknesses of the study are listed and discussed.

1.6. Summary

This chapter presents the problem statement which gave rise to the execution of the study. The different chapters are outlined and definitions and abbreviations important for the rest of the study are presented.

CHAPTER 2

EMOTION, EMOTIONAL KNOWLEDGE AND GRAPHIC REPRESENTATION OF EMOTIONS

2.1. Introduction

This chapter will discuss literature and research to outline a theoretical foundation for the current study. Firstly the construct of emotion will be discussed. This discussion will look at the definition of basic emotions, the development of emotions in typically developing children and emotion knowledge. Secondly both international and South African studies on aided communication will be discussed. The final section will focus the aspect of visual perception of emotions depicted by graphic symbols. Possible gaps in the literature will be identified and discussed with regard to how the current study proposes to address these gaps.

2.2. The construct of emotion

Emotion is a difficult construct to define and the exact definition differs widely among researchers (Kang & Shaver, 2004). Differential emotions theory defines emotion as a complex concept or process with neurophysiological, neuromuscular and phemenological aspects (Izard 1971; 1977). Ben-Ze'ev (2000) defines emotions as highly complex and subtle phenomena whose explanation requires careful and systematic analysis of their multiple characteristics and components. Emotions are viewed as concepts used by human beings to interpret and organize experience; the conceptual knowledge used to understand and classify emotional experiences is derived from and mirrors actual past experiences and leads to interpretations which are shared across persons and is used to interpret and evaluate situations as well as constrain which emotions are felt (Stein & Trabasso, 1992).

In essence emotions arise when events or a notable change in a person's world occur which is important for a person's wellbeing (Calvo & Marrero, 2009; Denham, 1998). These events or changes can be caused by antecedents like environmental events, actions by the individual himself, by actions of others or even memories (Denham. 1998). Emotions are the regulators of behaviour within oneself (intrapersonal) and in interactions with others (interpersonal) during the occurrence of these life changing events (Denham, 1998).

Although researchers differ about exactly which, how many and why emotions are basic; the notion of basic emotions are widely accepted (Brown & Dunn, 1996; Denham & Couchoud, 1990a; Ekman, et al., 1987; Ortony & Turner, 1990; Widen & Russell, 2004). Ortony and Turner (1990) pointed to the fact that almost all authors who postulate basic emotions include anger, happiness, sadness and fear. The most common reason for proposing basic emotions is to provide explanations for some routine observations about emotions like the fact that some emotions appear to exist in all cultures and that some emotions appear to be universally associated with and recognizable by characteristic facial expressions (Ortony & Turner, 1990).

In Ekman's (1999b) discussion on basic emotions, he mentions the concept of emotion families. This concept might help to clear away some of the confusion and the argument about how many emotions there are, as according to Ekman (1999b) each emotion is not a single effective state, but a family of related states, sharing characteristics. Ekman (1999b) distinguishes between different emotional phenomena namely emotions, emotional plots, moods and affective personality traits and does not allow for "non-basic" emotions. Accordingly he sees all emotions as basic and the basic emotions framework as allowing emotions to be distinguished from the other mentioned emotional phenomena (Ekman, 1999b).

Different authors choose to classify or describe emotions in different ways in terms of either categories of dimensions (Denham & Couchoud, 1990b; Izard, 1971; Russell, 1980; Russell & Bullock, 1986). Izard (1971) mentioned the existence of three dimensions to describe emotions. These dimensions are pleasantness-unpleasantness, relaxation-tension and calm-excitement (Izard, 1971). According to Russell and Bullock (1986) expressions can be interpreted in such basic categories as anger, fear, happiness, surprise etc. Expressions can further also be interpreted in terms of basic bipolar dimensions as pleasure-displeasure and arousal-sleepiness (Russell & Bullock, 1986). Emotions in the arousal dimension will be experience as emotions with high intensity (anger and fear), while emotions in the sleepiness dimension will cause a less intense experience. According to Russell (1980) feeling states can be plotted in a circular order around the perimeter of this two-dimensional space, the axes of which are pleasure-displeasure (x-axis) and arousal-sleepiness (y-axis). Evidence from Russell and Bullock (1986) suggest that happiness lies in the pleasure and arousal quadrant;

sadness in the displeasure and sleepiness quadrant with fear and anger both in the displeasure and arousal quadrant.

Denham and Couchoud (1990b) classify emotions in two categories either as positive (happiness) or negative (sadness, anger, fear) emotions. Russell and Bullock (1986) suggest that to distinguish categories from dimensions does not set them up as mutually exclusive possibilities. In fact, these authors feel that categories and dimensions may be necessary to account for different aspects of children's behaviour. When combining categories and dimensions happiness can be classified is a positive emotion with high intensity; sadness a negative emotion with low intensity and fear and anger negative emotions with higher intensity than sadness (Russell & Bullock, 1986).

2.3. Development of emotions in children

Human infants are born into a social-filled world of a diverse and ever-changing flow of emotional information from others' faces and voices (Moses, Baldwin, Rosickly, & Tidball, 2001) and children's emotional development forms the foundation of all learning (Greenspan, 2004). The ability to decode facial emotions is a nonverbal skill and plays a critical role in social and emotional development (Boyatzis, et al., 1993, Izard, 1971).

A study by Barrera and Maurer (1981) found that infants as young as three months old are able the discriminate between happy (smiling) and angry (frowning) expressions, not only when posed by the mother, but also when posed by a female stranger. Children's ability to decode facial expressions improves with age up to and during preschool and early elementary school years (Boyatzis, et al., 1993; Camras & Allison, 1985).

In the second half of a child's first year, the child is able to show, perceive and respond to emotion and between 12 and 15 months children can discriminate among basic emotions (Greenspan, 2004). By 15 months children become aware that different emotions can coexist (Greenspan, 2004) and are they able to forge emotional bonds across space and later across time. According to Greenspan (2004) children from about three years old develop the ability to abstract an emotion and to name it and at age 4 a child is able to link ideas with emotions (Greenspan, 2004).

Childhood presents a number of landmarks (Widen, & Russell, 2008a), including the child's first word or the first use of a particular word. According to Widen and Russell (2008a) these landmarks are often use to chart development, as when a child first use the word *scared* it is thought mark the acquisition of fear. Results from studies by Russell and colleagues (Russell & Paris, 1994; Widen, & Russell, 2003; Widen, & Russell, 2008a) suggest that emotion concepts are initially broad, from including anything from the same valence and narrowing gradually over a period of years, thus the use of a label for the first time might be a discreet event, but the acquisition of the emotion is quite gradual.

In 2003 Widen and Russell proposed the Differentiation Model to describe children's acquisition of emotion concepts. The Differentiation Model is presented in Figure 1.1. According to this model children initially interpret facial expressions and emotions in terms of broad dimensions of comfort-discomfort and intensity (Widen & Russell, 2003) or differently termed displeasure-pleasure dimensions and degree of arousal (Widen & Russell, 2008a). According to them the next level of performance is the use of one label, usually *happy* at the age about 35.4 months. At this stage *happy* may perhaps mean something broad such as 'excited' or even 'emotional'. The next level at age about 35.7 months is the use of two labels (Widen & Russell, 2003), one positive emotion (*happy*) and one negative emotion, either *sad* or *angry*. The next level is the use of three labels with a division in the negative emotions (*sad* and *angry) (41.2 months)*. At this stage these three labels are still applied broadly, with happy still meaning positive, while *angry* is a negative emotion with high arousal and *sad* a negative emotion with low arousal. Finally the words *surprised, scared* and *disgusted* are added to the child's lexicon.

The Differentiation Model proposed in 2003 (Widen & Russell) was developed using a free-labelling task, where participants were asked to label five facial expressions and separately five stories of emotional events. Results led Widen and Russell (2003) to believe that *surprised, scared* and *disgusted* labels are applied more narrowly from the beginning (Widen and Russell, 2003). In a study published in 2008 (Widen & Russell, 2008a) replicated the free-labelling of facial expression and included a categorization task. Results of both tasks support their work published in 2003 (Widen & Russell). On the categorisation task, children's later-emerging emotion category (fear and presumably other later-emerging categories) was as broad as their early-emerging ones (happiness, sadness, anger). On this result the Model was amended indicating that the four emotions are equally broad and that

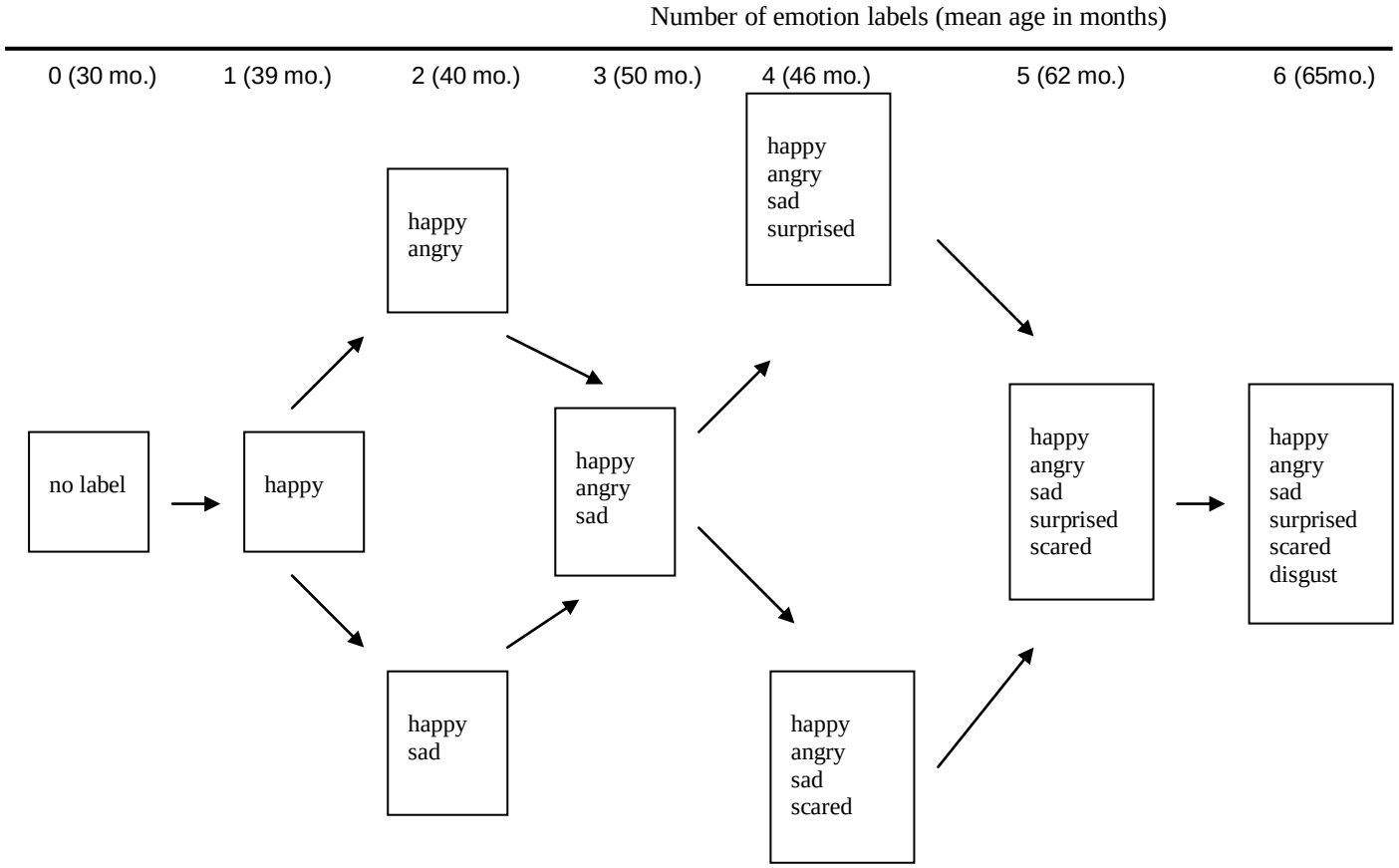


Figure 1.1 Systematic emergence of emotion labels (Widen & Russell, 2003)

later-emerging categories may have appeared to be to narrower in free labelling, as label accessibility plays a role on this task (Widen & Russell, 2008a).

Widen and Russell (2008a) concluded that the first observed use of an emotion label on free labelling is just one step along the way to understanding an emotion concept and that children's understanding of an emotion label can be different from adults', even when they use the same labels, thus suggesting that label acquisition is but one step in a years-long process toward the understanding of emotions in an adult-like manner.

The Differentiation Model gives a foundation as to the approximate age children are able to label and categorise emotions. The authors mention that children initially interpret facial expressions and emotions in terms of broad dimensions and that their understanding could be different from adults'. The model unfortunately is not able to give a possible timeline as to at which approximate age children start to understand the emotion concepts in an adult manner.

2.4. Emotional knowledge

According to Mayer and Salovey (1990) emotional intelligence can be defined as the capacity to process emotional information accurately and effectively. This includes information relevant to the recognition, construction and regulation of emotion in oneself and others and is recognised as powerful intra- and interpersonal regulators of behaviours (Denham, McKinley, Couchoud, & Holt, 1990). Children's emotional understanding (Cutting & Dunn, 1999; Denham, 1986) also called emotion knowledge (Izard, et al., 2001) is very important for their functioning in multiple contexts (Cowell & Hart, 2006) and can be defined as a child's understanding of emotions (Bennett, et al., 2005; Izard, et al., 2001). For children to gain knowledge and understanding of emotions, they need to experience emotions in social situations. According to Cowell & Hart (2006) children will take this knowledge with them into their own social interactions and relationships and thus a child's interpretation of a situation will be influenced by past experiences.

Emotion knowledge has different components (Bennett, et al., 2005; Cutting & Dunn, 1999; Denham, et al., 1990; Denham, Zoller, & Couchoud, 1994; Fine, et al., 2006; Garner,

Dunsmore, & Southam-Gerrow, 2008; Wang, 2003): emotional expression identification, emotion language and emotion situation knowledge. These components are tested using different tasks.

Emotional expression identification (Denham, et al., 1990) is tested using emotion recognition and labeling tasks (Bennett, et al., 2005; Cowell & Hart, 2006). The emotion recognition task is a non-verbal task (use receptive verbal skills) where the participant is asked to identify a facial expression when given the label by pointing to a photograph or picture depicting facial expressions of emotions (Bennett, et al., 2005; Cowell & Hart, 2006; Denham, Mitchell-Copeland, Sandberg, Auerbach, & Blair, 1997). With emotion labeling or affective labeling the participant must verbally (use expressive verbal skills) produce a label for emotion expressions presented to him/her (Denham, 1986; Cowell & Hart, 2006).

Emotion language is tested when the participant is asked to explain certain emotions or give reasons as to why someone would feel a specific emotion (Denham, et al., 1994). Emotion situation knowledge (Denham, et al., 1990; Fine, et al., 2006; Garner, et al., 2008) also known affective perspective taking (Cutting & Dunn, 1999; Dunn, Slomkowasi, & Youngblade, 1991) encompasses the ability to infer other's emotions from situational cues (Fine, et al., 2006). To test emotion situation knowledge the participant listens to equivocal (stories where the story character in the situation would feel a different emotion than the participant would) and unequivocal (stories where the story character in the situation would feel the same emotion than the participant would) vignettes describing an emotion situation and then has to indicate which emotion he/she thinks the character in the story would feel (Cutting & Dunn, 1999; Denham, et al., 1990; Dunn, et al., 1991; Fine, et al., 2006; Garner, et al., 2008).

Studies exploring young children's emotion knowledge usually explore the components emotion situation knowledge (Fine, et al., 2006; Garner, et al., 2008; Wang, 2003) and emotion expression identification (Izard, et al., 2001) either separately or in combination (Bennett, et al., 2005; Colwell & Hart, 2006; Cutting & Dunn, 1999; Denham, 1986; Denham, et al., 1990; Denham et al., 1994; Denham, et al., 1997; Dunn, et al., 1991). Few studies explore emotion language (Denham, et al., 1994). Different antecedents like young children's cognitive ability, maternal verbal intelligence, environmental risk (Bennett, et al.,

2005), age (Denham & Couchoud, 1990a) and cultural background (Wang, 2001, 2003) can influence children's emotion knowledge.

In a study by Wang (2003), he looked at 3- and 6-year old American and Chinese children's emotion situation knowledge. The participants were asked to identify in 20 short stories the emotion of a protagonist of their own age, gender and ethnicity. The children had to select among faces of happy, sad, fearful and angry (Wang, 2003). The participants then used a specially designed scale to rate the intensity of the emotion felt (Wang, 2003). Adults (the children's mothers and other adults) of the same ethnicity answered a questionnaire with the same questions.

Wang (2001, 2003) found cultural differences within emotion situation knowledge development. In a comparative study between American and Chinese preschool children and adults results indicated that the degree of mastery of knowledge about the appropriate emotions in particular situations varied between the two cultures (Wang, 2003). Results indicated that American children showed an overall greater understanding of emotion situation knowledge than their Chinese peers and this was shown especially for the negative emotions (Wang, 2003). These cultural differences emerged regardless of the type of judgment standard (the responses provided by the children's own mothers, by the majority of mothers or by the majority of a second group of adults in the respective cultures) employed. The American children's understanding of emotions further improved more rapidly than their Chinese peers' understanding, in particular for fear and anger (Wang, 2003).

American children and adults gave higher intensity ratings to the protagonists' feeling states than did Chinese participants. Participants from the two cultures perceived different emotions within specific situations (Wang, 2003). This study presents an addition to literature on children's development of emotion understanding as well as the impact of early cultural-familial context within which such development takes place (Wang, 2003). These cultural differences are closely associated with the different socialization practices of the two cultures exemplified in an earlier study investigating American and Chinese mother-child conversations about shared emotional experiences (Wang, 2001, 2003).

In the 2001 study mothers were instructed to discuss with their children four specific one-point-in-time events they shared with their children and in which the child experienced

happiness, sadness, fear or anger. These conversations took place at home and were tape-recorded by the mothers. Results indicated that American mothers used an "emotion-explaining" style where they spoke frequently about the situational antecedents of feeling states, providing elaborate explanations as to how and why an emotional reaction occurred (Wang 2001). In contrast Chinese mothers employed an "emotion-criticizing" style with little discussion about antecedents, but rather moral judgments about the incorrectness of children's emotional experience or behavior (Wang, 2001).

Results of the above studies (Wang, 2001; 2003) indicated that children at the age of three had already internalized their mothers' styles in discussing shared pasts; American children would frequently talk about causes of emotions while Chinese children often gave spontaneous comments on social rules and disciplines.

According to Wang (2003) the "emotion-explaining" style of American mother-child conversations highlighted the personal importance of emotion and facilitated the development of the children's emotion understanding, where as the "emotion-criticizing" style observed in Chinese mother-child conversations put social constraints on children's emotions and committed the children to behavioral standards rather than helping them to develop emotion knowledge. These results establish the effect of an individual-focused (where talking about emotions is regarded as a direct expression of the self and an affirmation of the importance of the individual) versus a group-oriented (where a premium is put on social harmony and group interests) approach to emotion socialization on the development of emotion situation knowledge (Wang, 2001; Wang, 2003). This individualism-collectivism (IC) construct can help to explain and predict cultural differences (Fischer, et al., 2009).

A strength of Wang's (2003) study was the employment of a judgment standard to which the participants' results were compared. For each cultural group there were three judgment standards, i.e. each participant's own mother, the mothers as a group and a group of adults from the same culture. The judgment standard was successfully used in interpreting the results.

The intensity component of emotion situation knowledge is also sensitive to cultural influences (Wang, 2003) with American adults and children giving higher intensity ratings than their Chinese counterparts, especially for negative emotions. The higher intensity

ratings by the American adults and children might reflect on the great value American culture places on emotion in maintaining one's unique individuality, while the lower intensity ratings and the greater difference between positive and negative emotions among the Chinese could reflect the view that negative emotions are potentially disruptive to social relations (Wang, 2003).

2.5. Studies on visual perception of emotions

Several studies during the last three decades have looked at different influences on the visual perception of emotions. Some studies on emotions have looked into young (pre-school) typically developing children and their recognition of emotions (Boyatzis, et al., 1993; Denham & Couchoud, 1990a, 1990b; MacDonald & Kirkpatrick, 1996; Walden & Field, 1982; Widen & Russell, 2003, 2004). Most of these studies made use of photographs as stimuli (Boyatzis, et al., 1993; MacDonald & Kirkpatrick, 1996; Walden & Field, 1982; Widen & Russell, 2003, 2004).

In the study by Boyatzis, et al. (1993), participants were shown a spread of three emotion photographs. They were told a vignette corresponding with one of the photographs. The other two photographs were randomly selected from the remaining five photographs on each trial for each child. After the child heard the vignette, the photographs were spread before him/her and the participant had to point to the photograph showing how he/she thought the character felt in the vignette. Results indicated that the ability to decode facial emotions improved with age for both boys and girls. Girls were found to be significantly better than boys at identifying emotions.

In a study by Widen and Russell (2003) participants were shown pictures of the emotions; they were asked to label each photograph. Results indicated that children's use of emotion labels increased with age in a systematic order. In another study by Widen and Russell (2004) they investigated the relative power of an emotion's facial expression, label and behavioral consequence to evoke participants' knowledge of its cause. Results indicated that though it is assumed that facial expressions are a strong cue to another's emotions, the facial expression was for no emotion the strongest cue (Widen & Russell, 2004).

A study by MacDonald and Kirkpatrick (1996) used photographs and schematic drawings of facial expressions as stimuli in their study. The participants were shown drawings and photographs of emotions (anger, disgust, fear, happiness, sadness, and surprise) in two context conditions. A within subject design including 3 tasks were used in this study. Results indicated that accuracy was the greatest for happiness, followed by sadness, anger, disgust, fear, and surprise. The findings further showed that the accuracy of the interpretation of facial expressions for schematic drawings was significantly greater than the accuracy for photographs (MacDonald & Kirkpatrick, 1996). These findings oppose an AAC study done by Mirenda and Locke (1989) where a predictable hierarchy of symbol transparency was established. According to this study photographs were easier to identify than different graphic symbols including PCS (schematic drawings).

In their study Denham and Couchoud (1990a) used felt puppets as part of what they called a contextually valid measure to investigate young preschoolers' understanding of emotions. Results indicated that the effects of age were significant for both the naming and pointing tasks they used. The measure was seen as contextually valid as children were familiar with the use of felt puppets. Older participants' scores were higher than younger participants' scores (Denham & Couchoud, 1990a).

In the field of psychology, a number of cross-cultural studies can be found done on the universality of emotions (Beaupré & Hess, 2005; Shioiri, Someya, Helmeste, & Tang, 1999; Yik, & Russell, 1999), indicating evidence of cross-cultural agreement in the judgement of facial expression (Ekman, et al., 1987). Consensus exists that the recognition of the emotions of happiness, sadness, surprise, disgust, anger, and fear are universal, although culturally dependent variations in the normal population might occur (Ekman, et al., 1987; Shioiri, et al, 1999).

Previously cited studies referred to typically developing children, but studies have also looked at different populations with regard to different barriers to learning (Bauminger, Edelstein, & Morash, 2005; Celani, Battacchi, & Arcidiacono, 1999; Dawson, Carver, Meltzoff, Panagiotides, McPartland, & Webb, 2002; Dawson, Webb, Carver, Panagiotides, & McPartland, 2004; Holder & Kirkpatrick, 2001; Manassis & Young, 2000). Bauminger, et al. (2005) looked at social information processing and emotional understanding in children with

learning disabilities. Two of several measures used in their study looked at emotional recognition from stories and from pictures. Results indicated (Bauminger, et al., 2005) that in both these cases, children with learning disabilities demonstrated lower performance than children without learning disabilities. Further analysis indicated that for all emotions except happiness, children with learning disabilities performed lower than the group without learning disabilities.

Holder and Kirkpatrick (2001) investigated the accuracy and time required for children with and without learning disabilities to interpret emotions when restricted to information from facial expressions and photographs. Results indicated that children with learning disabilities to be less accurate interpreters of emotion and that they spend more time identifying certain emotions (Holder & Kirkpatrick, 2001).

Manassis and Young (2000) examined differences in the ability to perceive others' emotions in anxious and learning disabilities children. Participants were divided into four groups: children with either anxiety disorders, language-based learning disabilities, both conditions and neither of the conditions. Results indicated that anxiety disorders and learning disabilities each appeared to have distinct effects on the auditory perception of other's emotions. The authors (Manassis & Young, 2000) recommend replication using larger samples.

Celani, et al. (1999) compared three groups of subjects (individuals with autism, individuals with Down Syndrome and typically developing individuals) on a delayed matching task and a sorting-by-preference task. Results indicated that there was a significant difference on the facial expression condition between the autistic experimental group and both the diagnostic normal control groups, due to worse performance of autistic subjects than children with normal development and individuals with Down Syndrome (Celani, et al., 1999).

The mentioned study by MacDonald and Kirkpatrick (1996) used drawings designed to consist of different facial components for emotional expression based on Ekman and Friesen's (1975) evaluations. MacDonald and Kirkpatrick (1996) felt that the richness of detail (gender, ethnicity or even specific features of the photographed model) in facial photographs may have a negative influence on the comprehension and interpretation by young children. This study illustrate the difference in the visual perception of graphic

symbols representing emotions and facial expression of emotions and therefore the importance of studying existing graphic symbol sets and systems' representation of emotions.

2.6. Graphic symbols depicting basic emotions

The field of AAC per definition focuses on visual strategies that enhance the communication of an individual with LNFS. This supplementation of natural speech and/or writing has allowed many individuals, whose disabilities hindered them from communicating, through the traditional means (speech) to more fully realize their potential (Lloyd, Fuller, & Arvidson, 1997).

As these visual strategies play such an important role; research on how children interpret and use graphic symbols remains topical. Since 1985 several studies on issues relating to aided communication have been published in the AAC journal (Zangari, Lloyd, & Vicker, 1990). Studies focused on different aspects of symbol sets and/or systems including: iconicity (e.g., Bloomberg, Karlan, & Lloyd, 1990; Luftig & Bersani, 1985; Mirenda & Locke, 1989; Mizuko & Reichle, 1989; Musselwhite & Ruscello, 1984); representativeness (e.g., Fuller & Stratton, 1991) and component complexity (e.g., Luftig & Bersani, 1985). Some studies also looked into the learnability of these sets and/or systems, including recall and different teaching strategies (e.g. Hertzoni & Lloyd, 2000; Mizuko & Reichle, 1989; Schlosser & Lloyd, 1993).

Iconicity refers to the visual relationship between a symbol and its referent and includes transparency and translucency (Fuller & Lloyd, 1991; Blischak, Lloyd & Fuller, 1997), while the absence of iconicity is called opaqueness (Fuller & Lloyd, 1997). Transparency is used to describe the guessability of a symbol in the absence of its referent, while translucency refers to the degree to which individuals perceive a relationship between a symbol and its referent when the referent is known (Blischak, et al, 1997).

Earlier studies investigating iconicity were conducted in Western cultures and few cross culture studies are available. In a study by Huer (2000) participants were all residing in the Los Angeles area of California; the European-American and African-American participants were all born in the United States and graduated from United States high schools. The Chinese-American and Mexican-American participants were all born and schooled in their native country; unfortunately the time they have been living in the United States were not

mentioned, and thus their exposure and degree of acculturation to Western Culture is unknown.

The results of this preliminary investigation suggest that culture/ethnicity might have an impact on the translucency ratings assigned to the three graphic symbol sets and/or systems used in the study (Huer, 2000). Apart from differences, some similarities were also seen: all four groups' results indicated PCS as the most translucent, DynaSyms as less translucent and Blissymbols as the least transparent. Since all participants did not live in their native country, Nigam (2003) argued that Huer (2000) could not make any claims in relation to interaction and graphic symbols (Bornman, Alant, du Preez, 2009).

Participants in Nakamura, Newell, Alm, and Waller's (1998) cross-cultural study were either native Japanese university student or students and staff from a Scottish university. None of the participants from Scotland had any knowledge of Japanese. Participants listened to a folktale and were requested to answer questions about the story. In answering the questions there were to conditions. Answering the questions with PCS alone or using PCS and an added particle array. Results indicated that syntactic elements from the user of the AAC device's language should be taken in account when developing a picture-based communication system.

The lack of African studies prompted several research studies relating to symbol sets and/or systems in the South African context since 1997. The studies made use of different symbols sets and/or systems namely Blissymbols (Alant, Life, & Harty, 2005; Bornman, et al., 2009; Moolman & Alant, 1997), CyberGlyphs (Alant, et. al., 2005) and PCS (Basson & Alant, 2005; Haupt & Alant, 2002; Visser, et al., 2008). These studies also looked at different symbol characteristics such as learnability (Alant et al., 2005; Basson & Alant, 2005), retention (Alant et al., 2005), iconicity (Basson & Alant, 2005; Haupt & Alant, 2002) and representation (Visser et al., 2008). The studies were conducted in 5 of South Africa's 11 official languages: Afrikaans, English, Northern Sotho (Sepedi), Setswana and Zulu (Alant et al., 2005; Basson & Alant, 2005; Bornman, et al., 2009; Haupt & Alant, 2002; Visser et al., 2008).

These studies have made valuable preliminary contributions to the knowledge base of graphic symbols in the South African context. The results of the two "iconicity-studies" by Haupt

and Alant (2002) and Basson and Alant (2005) indicated generally low average iconicity scores for the particular PCS used in the studies (Bornman, et al., 2009). Although these two studies could not be statistically compared (due to too many variables differences between the two populations), descriptive comparisons revealed differences between the studies could be a reflection of the different cultural experiences of the two participant groups. This suggests that although PCS may be seen as one of the most iconic symbol sets, there cannot be the assumption that it will be equally guessable for different population groups (Basson & Alant, 2005).

The studies by Basson and Alant (2005) and Bornman, et al. (2009) gives evidence that merely being exposed to symbol sets/systems enhanced the participants' perception of transparency and translucency of the PCS and Blissymbols used in their respective studies.

These South African studies investigated different symbol characteristics, symbol sets and/or systems as well as participants from different language groupings. Although the descriptive comparisons were made between Haupt and Alant (2002) and Basson and Alant (2005) and the Bornman et al. (2009) study and an international study, none of these studies had a statistical comparison as part of their aims. Thus up until now, no comparisons between two different South African groups have been made. This leaves a gap in research with regard to the generalisability of research results from one South African language group to another.
Studies done on the iconicity of PCS with two different language populations in South Africa (Basson, 2004; Haupt, 2001) indicated that practitioners cannot assume that participants in different cultures will perceive the iconicity of symbols the same. Even though research in the field of psychology (Ekman, et al., 1987; Shioiri, et al, 1999) indicated universality of emotion, one cannot assume that all pictures (symbols) depicting emotions will be iconic/universal. It is important to remember that most of the reported studies used photographs as stimuli and not pictures (line drawings / symbols).

The study by Visser, et al. (2008) indicated that the English-speaking Caucasian participants were able to recognize the emotions conveyed by the graphic symbols but a variety of unexpected choices were also made.

As mentioned previously most of the studies investigating emotions made use of photos; because of this, little is known about how emotions is represented by graphic symbols

(specifically line drawings). A search within the AAC literature offered only one study looking specifically at how graphic symbols represent emotions. This particular study looked at the four basic emotions of happiness, sadness, fear and anger (Visser, et al., 2008) and results indicate that some graphic representations of emotions may be more difficult to recognise than others (afraid and angry more difficult than happy).

Of the six basic emotions (Ekman, et al., 1987; Shioiri, et al, 1999) anger (Luftig, Page, & Lloyd, 1983) and surprise (Fuller, 1997) occurred once, sadness (Bloomberg et al, 1990; Luftig, 1983; Luftig, et al, 1983) three times, fear (Bloomberg et al, 1990; Luftig, 1983; Mizuko, 1987; Mizuko & Reichle, 1989) four times and happiness (Bloomberg et al, 1990; Luftig, 1983; Luftig, et al, 1983; Mizuko, 1987; Mizuko & Reichle, 1989) five times. All of these studies commented on the test stimuli's iconicity within the set and/or system and not on single graphic symbols.

In Visser, et al.'s (2008) study, English-speaking caucasian children were to inidicate which graphic symbol they though represented a particular emotion. Each participant was seen individually. The session started with a pre-test to determine whether or not the participant knew the four emotions (happy, sad, afraid and angry) used in the study. If the participant was able to show this knowledge he/she received a 12 sheet booklet. Each sheet contained 16 graphic symbols representing each emotion (4 symbols per emotion). All sixteen symbols appear on eah sheet, but was randomly assigned different possitions on each sheet. All but two symbols were from the PCS set; the other two were from PICSYMS and Makaton respectively (Visser, et al., 2008). The sixteen symbols as well as the symbol set/system they orignated from is presented in Appendix O.

During the session the participant listend to 12 vignettes (three vignettes per emption). Each vignette was followed with the corresponding emotion label. After listening to each vignette the participant was required to indicate which symbol of the sixteen symbols, he thought depicted the emotion the protagonast in the story felt. An example of a question is: *"It is Peter's birthday. He got a big present. He is happy. Show me the happy face."* (Visser, et al., 2008, page 307).

The results from this study indicated that for all four emotions most of the participants chose symbols to represent the different emotions from the anticipated options. One unexpected

symbol, was chosen to represent happy, four unexpected symbols to represent sad eight unexpected symbols to represent afraid and seven unexpected symbols chosen to represent angry.

Visser et al. (2008) mentioned that the above results indicated that "there is a difference between the four emotions in terms of the variety and frequency of unexpected symbols per emotion" (pg 308). The highest consensus in relation to expected responses ranged from happy (99%) at the higher end to sad (37%) at the lower end, with angry (85%) and afraid (74%) in the middle.

Visser, et al. (2008) felt that the results from their study suggested that some emotions may be more susceptible to individual influences than other. Apart from the variables mentioned earlier, intensity of emotion may play a role in children's choices of graphical representations. Although the participants in Visser, et al. (2008)'s was culturally a homogeneous group; individual differences with regard to the intensity of emotions displayed; could account for the differences in choice for the same emotion in answer to the three vignettes.

Visser et al. (2008) mentioned that a possible reason that participants in their study chose different symbols for the 3 vignettes depicting a certain emotion could be that they assign different intensities to the different vignettes. As each participant comes with his/her own emotional history, each participants' emotion situation knowledge is unique. Wang (2003) found that the intensity component of situation knowledge is sensitive to cultural influences.

With this in mind the current study will look at which symbols children from two South African language groups (Afrikaans and Sepedi) chose to represent each of the four basic emotions. Each emotion will be presented through 6 vignettes. Furthermore the study will take an initial look to see whether the intensity that a participant perceive a certain emotion vignette have, will influence the participant's choice of graphic symbols to represent the four emotions of happiness, sadness, anger and fear. The main differences between the current study and the study by Visser, et al. (2008) are the age and language of the participants, the fact that two different language group are interviewed giving the chance for statistical comparison, more vignettes per emotion and the opportunity afforded to participants to indicate how intense the protagonist will experience the emotion.

2.8. Summary

This chapter discussed the construct of emotion, looking at the definitions of basic emotions, the development of emotions in typically developing children, recognition and understanding of emotions in self and others as well as emotion knowledge as well as the visual perception of graphical symbols representing emotions and facial expressions. International and South African studies on aided communication and in particular iconicity were also discussed. The final section focused specifically on emotions depicted by graphic symbols.

CHAPTER 3
RESEARCH METHODOLOGY

3.1. Introduction

This chapter provides a discussion of the methodology used in the current study. Firstly, the aims and the research design are discussed. Secondly, the different phases of the study, i.e. the preparation of material, translation of the material, school and participant selection are set out. Next, the execution and results of the pilot study are presented and discussed. Finally, the chapter concludes with an account of the data collection procedures and the data analyses that were used in the study.

3.2. Aims of the study

3.2.1. Main aim

The main aim of this study is to describe and compare Afrikaans and Sepedi speaking grade R children's choice of graphic symbols when depicting four basic emotions: happy; sad; afraid; and angry.

3.2.2. Sub-aims

3.2.2.1. *Sub-aim 1*: To describe and compare expected and unexpected choices of graphic symbols to represent the basic emotions across language groups, gender groups and vignettes.

3.2.2.2. *Sub-aim 2*: To describe and compare the intensity ratings of vignettes in relation to each basic emotion across language and gender groups.

3.3. Research design

The mode of inquiry was a non-experimental comparative design (MacMillan & Schumacher, 2001). Ninety participants (44 Afrikaans speaking and 46 Sepedi speaking participants) were individually exposed to twenty-four vignettes representing four emotions (happy, sad, angry and afraid). The participants were asked to rate the intensity of the emotion on a two point scale before selecting the graphic symbol that, according to him/her, represented the specific emotion and intensity. An array of sixteen graphic symbols depicting emotions was used in the study. A comparative mode of inquiry does not involve manipulation of independent variables but goes further than a descriptive mode of inquiry as it does not only describe an

existing phenomenon but also investigates whether differences between groups regarding the phenomena studied exist (McMillan & Schumacher, 2001). The two language groups were compared in their choice of expected and unexpected graphic symbols to represent four basic emotions in response to vignettes. Finally the preferred symbols were analysed with regard to their features to attempt to understand why these symbols were chosen to represent the emotions.

3.4. Definition of terms used in the sub-aims and research design

Expected symbols in this study refer to any of the 4 PCS systematically identified to represent a specific basic emotion. Due to the nature of the task the selection of an expected symbol is not more correct than the selection of an unexpected symbol.

Preferred symbols can be defined as the particular symbols most of the participants selected to represent the emotions. Preferred symbols can be either expected or unexpected symbols.

Unexpected symbols in this study refer to any PCS on the presented overlay which is not one of the expected symbols of the target emotion.

3.5. Phases of the study

The study was divided into two phases. In the first phase, preparations essential for the execution of the main study was done. This phase included development of material, obtaining ethical clearance from The Ethics Committee of the Faculty of Humanities (Appendix A: Letter granting ethical clearance) as well as permission from the Limpopo Department of Health and Social Welfare (Appendix B and Appendix C: Relevant correspondence between the Limpopo Department of Health and Social Welfare and the researcher) in whose area the participants were located. Participating schools were identified and permission to conduct the study from school principals (Appendix D: Letter of permission from school principals) and parents were obtained (Appendix E: Letter of permission from parents).

The second phase was the main study and entailed the selection of participants, the data collection in the form of an individual structured interview with each of the participants. After the collection of data it was captured, statistically analysed and interpreted. Finally, the entire process was critically evaluated.

3.6. Development of the material

3.6.1. Selection of emotions

Most authors studying emotions mention four to six basic emotions, namely: happiness, sadness, surprise, disgust, anger, and fear (Brown & Dunn, 1996; Denham & Couchoud, 1990a; Ekman, et al., 1987; Widen & Russell, 2004). Widen and Russell (2003; 2008b) examined the emergence of emotion labels and their results indicated that by the mean age of 55.6 months participants used the labels for *happy*, *angry*, *sad*, and either *scared* or *surprised*. *Disgust* was found to emerge at a mean age of 70.2 (Widen & Russell, 2008b). Because this study made use of participants between 60 and 72 months, it was decided to remove *disgust* as an emotion in the study, as some of the participants might not know this emotion.

Russell (1990) found that most preschool children at age 4 to 5 are able to specify plausible causes and consequences for basic emotions, with the possible exceptions of the emotions *excitement* and *surprise*. To be sure that the participants in the current study understood all the emotions used, *surprise* was also removed. The target emotions were therefore *happy*, *sad*, *afraid* and *angry*. Another similar South African study by Visser, et al., (2008) also targeted these four emotions.

3.6.2. Selection of symbols to depict emotions

The study by Visser (Visser, 2006; Visser, et al., 2008), used 14 Picture Communication Symbols (PCS), one Makaton symbol and one Picsym symbol to represent the target emotions (the symbols used by Visser (2006) are presented in Appendix F). Visser (2006) noted that the shape of the face as well as the line thickness of the Makaton and the Picsym symbols differed from the PCS.

In an attempt to eliminate possible influence of the visual differences between the various commercially available graphic symbols, only symbols from PCS were selected. PCS is readily available in the South African context and research has indicated this graphic set to be one of the more iconic graphic sets/systems available (Huer, 2000; Mirenda, & Locke, 1989; Mizuko, & Reichle, 1989).

To ensure that all possible symbols which can represent these target emotions were accessible, all synonyms for each of the emotion labels were identified using the Oxford

Thesaurus (Urdang, 1991). All these terms (*happy* and 24 synonyms; *sad* and 23 synonyms; *angry* and 18 synonyms as well as *afraid* and 11 synonyms) were entered into Boardmaker version 6 demo's (© 1981-2007 Mayer-Johnson) symbol finder. Lists of the synonyms as well as the number of symbols per term as identified by Boardmaker version 6 demo (© 1981-2007 Mayer-Johnson) are available in Appendix G.

Each symbol identified was further searched for other labels, as prescribed by the developers of Boardmaker Version 6 demo (© 1981-2007 Mayer-Johnson). Any labels present in Boardmaker but not listed in the Oxford Thesaurus (Urdang, 1991) were also run through the symbol finder (Appendix G). A total number of 21 symbols were identified (Appendix H): All the symbols as well as all possible labels for each symbol as identified by Boardmaker version 6 demo (© 1981-2007 Mayer-Johnson). All the possible symbols for each emotion are presented in Appendices I and J.

From the 21 symbols referred to above, the researcher selected the final 16 symbols comprising of four symbols for each target emotion. In selecting the symbols, symbols representing the formal labels (*happy, sad, angry* and *afraid*) used in the study were assigned preference, followed by symbols representing the thesaurus synonyms (Oxford Thesaurus, Urdang, 1991) and lastly the Boardmaker Version 6 demo synonyms (© 1981-2007 Mayer-Johnson) The steps taken in this process are described in table form in Appendix K.

The final step was to confirm whether teachers teaching to children similar to the participants thought that children aged 5:00 to 5:11would be able to identify with the chosen symbols. Eight pre-school teachers (4 Sepedi and 4 Afrikaans speakers) were presented with the 16 symbols as well as the emotion represented by a particular symbol. The teachers were asked to indicate whether they agreed with the researcher that the symbol represented the particular emotions (Appendix L). A cut-off point of four was chosen; thus, if four or more teachers decided that a symbol did not represent the particular emotion, it would be replaced. Only one symbol ([ ]) was not agreed upon and was replaced with [ ]. The panel was further asked to report why they did not agree (Appendix M).

The sixteen PCS are presented in Table 3.1. The numbering used in this table corresponds with the numbering used in the main study and not with the numbering used in selecting the

symbols as reflected Appendix H. Thirteen of these sixteen symbols were also used by Visser (Visser, 2006; Visser, et al., 2008), namely

- happy: symbols 1, 5 and 9
- sad: symbols 2, 6, 10 and 14;
- afraid: symbols 3, 7 and 11 and
- angry: symbols 4 and 8.

Angry symbol 16 was used in Visser's (2006) study to represent afraid. The fourth happy symbol [ ] used by Visser (2006) was disqualified by the 8 teachers asked to verify the 16 PCS chosen to represent the target emotions and replaced by symbol 13 [ ]. The symbols used in the main study are presented in Table 3.1.

Table 3.1. Symbols used to represent the 4 basic emotions in the main study.

Happy	Sad	Afraid	Angry
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

3.6.3. Selection of vignettes

Each emotion was represented by 6 vignettes. During a literature search within psychology and development research a total of 51 emotion vignettes were identified (Boyatzis, et al., 1993; MacDonald & Kirkpatrick, 1996; Visser, 2006; Widen & Russell, 2004; Wang, 2003).

The 51 vignettes are presented in Appendix N. Some of these 51 vignettes had similar contexts and themes, e.g. the protagonist receiving presents for his/her birthday; playing with friends; having something nice to eat; losing a favourite toy. These vignettes were combined to form the 17 vignettes (Appendix O1).

The 17 vignettes were presented to seven professionals working with children and having a research background. They were instructed to provide each vignette with an emotion label as well as to rate, on a three point scale, the intensity of the emotion experienced. After synonyms were matched, 44 different emotion labels were identified. A total of 40 labels were not 'expected'. A total of 118 intensity choices were made (1 missing data); 12: 'little emotion'; 47: 'emotion' and 59: 'very emotion'.

The same group of professionals were finally asked to propose other vignettes that they thought would elicit emotions, and based on their feedback another 20 vignettes were added to bring the total of vignettes to 37 (Appendix O2). The list of 37 vignettes was presented to six speech therapists (four Afrikaans mother tongue speakers and two Sepedi mother tongue speakers) with the same instructions (Appendix O2: Copy the questionnaire). Results again yielded a large number of labels and confusion regarding the negative emotions, especially *sad* and *angry*. To ensure that participants would use the four target labels it was decided that it would be better if the vignette stated the emotion and the participants were only asked to choose the associated intensity.

The vignettes were amended and presented to four pre-school teachers (two mother tongue speakers of Sepedi and two mother tongue speakers of Afrikaans). The teachers were requested to read the vignettes and rate the intensity of the emotion experienced on a three point scale (Appendix O3: Copy of the questionnaire). Results seemed to indicate that even for adults the rating of the emotions on a three point scale was a difficult task. Therefore, the 3 point intensity scale was changed to a 2 point intensity scale and presented to a group of 8 pre-school teachers (half of the teachers were Afrikaans mother tongue speakers; while the other half were Sepedi mother tongue speakers). These teachers were given the same instructions as before, the only difference being the two point rating scale.

The researcher translated the vignettes from English into Afrikaans. An Afrikaans speaking speech-language therapist checked the appropriateness of the translation (Appendix P: Copy

of questionnaire). The 37 Afrikaans vignettes were piloted on 8 Afrikaans speaking children of the appropriate age to see whether they were able to successfully complete the task. The participants understood the vignettes and were all able to assign intensity to the emotions presented in the vignettes.

As the study only required 24 vignettes the next step was to reduce the thirty seven vignettes to twenty four. Eight teachers (four Afrikaans and four Sepedi speaking) were asked to rate the vignettes from the most familiar to the least familiar situation (using the English vignettes). Teachers were instructed to think, whilst completing the task, of children between the ages 5:00 and 5:11 years speaking their (the teachers') home language (Appendix Q: Copy of questionnaire). Twenty-four vignettes were chosen, choosing the six most familiar vignettes for every emotion (the vignettes are presented in Appendix R).

After the 24 vignettes were chosen it was necessary to establish whether Sepedi speaking children of the appropriate age would be able to complete the task successfully (this had already been established for Afrikaans speaking children).
The 24 vignettes were translated from Afrikaans to Sepedi (Table 3.2.) and piloted with Sepedi speaking children. During the Sepedi pilot study minor changes were suggested. These changes are discussed in Table 3.2.

3.6.4. Strategy for indicating intensity

The process of choosing the values of the rating scale went hand in hand with the choice of vignettes as discussed in section 3.5.2. Because the participants were preliterate their choice of intensity had to be indicated on a visual scale. The clearest way to visually present 'just' emotion and 'very' emotion was in the form of a bar graph. A copy of the intensity scale (bar graph) is presented in Appendix S.

3.6.5. Pre-assessment task

To enable the researcher to interpret the results it was imperative to ensure that the participants knew the four target emotions. Pre-assessment was therefore incorporated into the protocol. Participants had to pass this pre-assessment before being allowed to continue with the actual data collection. To determine participants' knowledge of emotions they are, as recorded in literature, often asked to label pictures of facial expressions of the target emotions (Boyatis, et al., 1993; Denham & Couchoud, 1990b; Holder & Kirkpatrick, 2001;

Widen & Russell, 2004). Because such a visual task would be very similar to the actual data collection method and it's the possible influence on the results was uncertain, a different method was chosen.

The pre-assessment used in a similar study by Visser (Visser, 2006; Visser, et al., 2008) was amended to serve as pre-assessment task for the current study. An explanatory vignette about what an emotion is was added. Appropriate names for the protagonist were selected and the possibility of a choice between two emotions was included. The proposed pre-assessment task was piloted (Table 3.3.) and minor changes were made (Appendix T).

3.6.6. Translation

The vignettes and protocol were translated from the original Afrikaans to Sepedi. A combination of back translation, the committee approach and pre-test procedures (Brislin, 1980; Haupt, 2001; Retief, 1988) were followed (Table 3.2.).

Table 3.2. Steps taken to translate Afrikaans protocol into Sepedi

Step	Process	Outcome
1	The Afrikaans protocol was given to a Sepedi mother tongue speaker (Translator 1) working as the Sepedi teacher at an Afrikaans school. Translator 1 was requested to translate the protocol into Sepedi.	The Sepedi translation was typed and given to Translator 1 for editing.
2	The Sepedi translation was given to a Sepedi speaking individual (Translator 2), working at the Department of African Languages at the University of Pretoria. Translator 2 was instructed to translate the Sepedi into Afrikaans.	Translator 2 translated the Sepedi translation back into Afrikaans.
3	The Afrikaans back translation was edited for language mistakes and sent back to Translator 2 Translator 2 was requested to make sure that any editorial changes did not change the intended meaning.	Translator 2 returned the document indicating that the meaning was not compromised by the editing.

Step	Process	Outcome
4	The two Afrikaans transcripts were presented to an independent rater (a mother tongue Afrikaans speaker and Afrikaans 1st language teacher). The rater was requested to point out any differences in meaning between the scripts.	Differences picked up by the rater were discussed with Translator 1 and necessary changes were made. These changes are presented in Appendix U.
5	The Sepedi vignettes were presented to Sepedi mother tongue speaking pre-school teachers.	The teachers indicated that the Sepedi vignettes were relevant and familiar. Three of the emotion labels used in the Sepedi translation was said to be archaic and other words were chosen. These changes are presented in Appendix R.

3.7. Pilot study

A pilot study was done to ensure that the test material, test protocol and participant selection would present no problems in the main study. The pilot study was done with both Afrikaans and Sepedi speaking participants. All changes recommended were re-piloted to guarantee that these changes addressed the shortcomings previously identified. The objectives, results and changes of the pilot study are presented in Table 3.3.

Table 3.3. Pilot study objectives, results and changes

	Objective	Discussion and results		Changes
		Afrikaans speaking participants	Sepedi speaking participants	
1.1: Test material				
1. Overlay	1. To determine whether participants can easily negotiate a sixteen matrix overlay	1. Afrikaans speaking participants were able to negotiate the sixteen matrix overlay.	1. Sepedi speaking participants were able to negotiate the sixteen matrix overlay.	1. No changes needed.
2. Pre-assessment	2. To determine if participants can identify emotions correctly and pass pre-assessment to continue with main test	2. A number of participants were not able to pass pre-assessment	2. A number of participants were not able to pass pre-assessment.	2. Minor changes were made (See Appendix T for a description of changes).
3. Vignettes	3. To determine if the chosen vignettes are relevant and familiar	3. Afrikaans pre-primary school teachers indicated that the stories chosen would be relevant and familiar.	3. Sepedi pre-primary school teachers indicated that the stories chosen would be relevant and familiar.	3.
			Three of the emotion words used in the Sepedi translation was archaic.	The words were substituted with more modern words (see Appendix U).
			The phrases indicating 'Lebo was happy/sad/angry/scared' were seen as redundant.	The equivalent phrase in Afrikaans and Sepedi was removed.

	Objective	Discussion and results		Changes
		Afrikaans speaking participants	Sepedi peaking participants	
1.1: Test material				
4. Recording sheet and script	4. To determine if the researcher can keep track of vignettes, read from the script and then record data correctly on the recording sheet	4. The researcher found it difficult to keep track of the vignettes while executing the protocol.	4. The recommended changes were made to the Sepedi protocol prior to its piloting with the Sepedi speaking participants. The researcher was able to keep track with the Sepedi vignettes and recorded the answers correctly. She was however not always sure what the Afrikaans meaning was.	4. Since the test items were grouped into groups of four on the recording sheet it was decided to change the lay out of the script to six pages with four vignettes on each. Inserted the Afrikaans vignettes into the researcher's Sepedi copy of the script.
1.2: Test protocol				
1. Instructions	1. To determine whether the instructions are clear	1. Participants understood and followed the instructions.	1. Participants understood and followed the instructions.	1. No changes needed.
2. Seating arrangement	2. To determine the seating arrangement	2. The arrangement where the participant and the researcher sit facing each other worked well. Child sized furniture were used.	2. The arrangement where the participant and the research assistant sat facing each other and the researcher sitting next to the participant worked well. Child sized furniture were used.	2. No changes needed.

	Objective	Discussion and results		Changes
		Afrikaans speaking participants	Sepedi speaking participants	
1.2: Test protocol				
3. Research assistant	3. To determine if the research assistant understood training and is able to follow script accurately.		3. The research assistant was able to administer the protocol, but did not follow the script accurately.	3. Importance of following the script was again explained and emphasized.
1.3: Subjects				
1. Selection criteria	1. - To determine whether certain selection criteria would not eliminate participants unnecessarily	1. - Some participants were older than 6 years.	1. - Some participants were older than 6 years. - Some of the participants spoke not only Sepedi at home.	1. - The age of the participants were not changed. The researcher would, however, need to make sure that teachers take the age factor in to account when handing out the permission letters. - Participants may speak more than one language as long as one of the languages spoken at home is Sepedi.
2. Sampling	2. - To determine how to select participants	2. - All participants whose parents gave consent and who complied with the selection criteria and passed the pre-assessment could take part in the study.	2. - All participants at a school whose parents gave consent and who complied with the selection criteria and passed the pre-assessment could take part in the study.	2. -No changes needed.

3.8. Main study

3.8.1. Description of participating schools

Ten schools (6 Afrikaans and 4 Sepedi) participated in the main study. Purposeful sampling was used to select participating schools. All schools approached were eager to participate.

3.8.2. Selection and description of participants

Participants were selected to be aged between 5 years and 5 years 11 months and attending Grade R. Grade R is the year before formal schooling is commenced; classrooms are semi-structured. Choosing participants in this age- and grade group ensured that the participants were familiar with some structured activities, but formal schooling which could influence visual perception (Duncan, Gourly, & Hudson, 1973; Martlew, & Connolly, 1996) has not yet started.

In accordance to the main aim of the study, participants had to speak at least either Afrikaans or Sepedi as a home language and be schooled in either of the two languages. To exclude physical problems which could interfere with visual perception the participants had to be typically developing children with no uncorrected sight problems or hearing loss. The above mentioned information of each child was obtained through questionnaires to the children's parents/guardians (this information was obtained through the questionnaire presented in Appendices E1 to E3).

A total of 57 Afrikaans speaking participants complied with the selection criteria; of these participants 77.19% (n=44) passed the pre-assessment and continued with the main study. 22.81% (n=13) of the Afrikaans speaking participants did not pass the pre-assessment and therefore did not complete the data collection section.

Regarding the Sepedi speaking participants 142 complied with the selection criteria. 32.39% (n=46) of these passed the pre-assessment and continued with the main study, whilst the remaining 67.61% (n=109) did not pass the pre-assessment and did not participate in the main study. 67.61% of the Sepedi speaking participants not passing the pre-assessment were unexpected as the Sepedi speaking participants, during the

pilot, were able to pass the pre-assessment. . The possible reason for the failure of the pre-assessment may be that the participants might have been unfamiliar with the task of assigning emotion to another individual as contained in the vignettes. In addition, main study participants' teachers mentioned that they only work on emotions later in the school year. The criteria was also very stringent, if participants were not able to name one of the four emotions they did not pass the pre-assessment. These stringent criteria were deemed necessary to ensure that lack of knowledge of the emotions did not influence the main study results.

The 90 participants in the current study were typically developing 5:00 to 5:11 year-old Sepedi speaking and Afrikaans speaking children living in the Waterberg District in the Limpopo Province of the Republic of South Africa. The Limpopo Province is the fourth largest in the Republic of South Africa with a population of 5 273 642, the fourth largest population per province (Census 2001, 2003). Sepedi is the home language spoken by most (52.1%) of the Limpopo population as well as the home language spoken fourth most throughout the country. Afrikaans is spoken by a small portion (2.3%) of the Limpopo population, but is the home language spoken 3rd most throughout the Republic of South Africa (Census 2001, 2003).

In the current study there were 44 Afrikaans speaking participants, 22 boys and 22 girls and 46 Sepedi speaking participants, 23 boys and 23 girls. All participants were between 60 months (5:00 [yrs:months]) and 71 months (5:11 [yrs:months]) of age. Statistically there are no differences between the two language groups with regard to gender ($p = 0.1669$) but a statistical difference between the mean age of the two groups was seen ($p = 0.0003$*) with the mean age of the Sepedi participants at 64.4 months and the mean age of the Afrikaans participants at 67 months. Results are presented in Tables 3.4.

Table 3.4. Equivalence of language groups in terms of gender and age

	Afrikaans	Sepedi	p-value	
Number of males	50% (n = 22)	50% (n = 23)	>0,9999	Chi square p value
Number of females	50% (n = 22)	50% (n = 23)		
Mean age	67	64.457	0.0003*	Satterthwaite T-test p-value

*if p<0.01, then significant at a 1% level

Despite the statistical difference between the mean ages of the two language groups, all participants were between 60 months (5:00 [years:months]) and 71 months (5:11 [years:months]) of age. Participants were all grade R learners.

3.9. Research assistant

A research assistant was employed for the Sepedi data collection. The assistant was a mother tongue Sepedi speaking lady. She completed high school and previously worked with children as a Love Life HIV/AIDS counsellor at schools.

3.10. Material and equipment

The following material was used:

a. Letters to the principals of the schools requesting consent (Appendix D)
b. Letters requesting informed consent from parents and parent questionnaires (English, Afrikaans and Sepedi copies of these letters and of the parent questionnaires are included in Appendices E1 to E3).
c. Overlays (symbols used): 24 sixteen-matrix emotion overlays with the sixteen symbols previously discussed (Section 3.5.1). The order in which the symbols were arranged was random on each overlay. The randomizing was done with the randomizing feature of the Microsoft Excel 2007 computer program (Appendix V presents minimized versions of the randomized overlays).
d. Intensity scale: a two-point intensity scale was presented on a landscape A4 page (Appendix S).
e. Protocol: pre-assessment consisting of 4 emotion vignettes previously discussed in see section 3.5.4 (Appendices W1 to W3 contains the English, Afrikaans and Sepedi test protocols).

f. Protocol: 24 vignettes previously discussed in Section 3.5.2 (Appendices W1 to W3: English, Afrikaans and Sepedi test protocols).
g. Recording sheet: A recording sheet was developed to record the participant's answers (Appendix V).
h. Tape recorder and audio tapes: All data collecting sessions were tape-recorded using a battery operated tape recorder, blank new tapes and batteries.
i. Tokens: Each participant (whether they passed the pre-assessment or not) received a sticker as a 'thank you' token for participating in the study.

3.11. Procedures

This section presents a discussion of the general procedures (3.11.1.) and procedures for the collection of data (3.11.2.). Data collection took place within a period of one year, from October 2008 to October 2009. Each school was visited as many times as necessary in order to collect data from all the participants. Participants whose parents gave consent and who met the selection criteria were included in the study.

3.11.1. General procedures

In this section the general procedures are presented, including ethical issues, permissions from schools, the set-up of the venue and the final administrative procedures.

Ethical clearance was obtained from the Limpopo Department of Health and Social Development and the Ethics Committee of the Faculty of Humanities, University of Pretoria (Appendices A and B). The selected schools were subsequently either contacted telephonically or visited (where contacting schools telephonically was difficult) in order to set up an initial meeting. These initial meetings were held at the respective schools. At these meetings the intended study was briefly explained and the selection criteria presented. The schools were provided with a copy of the letter of permission received from the Limpopo Department of Health and Social Development and it was made clear that no one was under any obligation to participate in the study.

All of the schools that were contacted elected to take part in the study. The principal received a letter explaining the study, a form requesting consent (Appendix D) to

complete, as well as the letters and forms requesting consent to be distributed to the parents/guardians (Appendix E1 to E3). The venue and the furniture needed were discussed. An appointment date for the data collection was made.

On the day of data collection the researcher obtained the participants' returned consent forms and questionnaires from the class teacher. The questionnaires were checked to select the participants who complied with the selection criteria. These participants were seen for the data collection procedures. Each participant was seen individually in a separate, designated room. The researcher collected Afrikaans speaking participants from their classrooms, while the research assistant collected Sepedi speaking participants from theirs. The researcher, research assistant (with Sepedi speaking participants) and the participant went into the designated room and sat down. The questionnaire was separated from the form granting permission and was numbered with the participant's number. This was done to make sure that the participant's results could not be traced back to him/her, but that the correct biographical information could still be linked to the participant's results. The participant's number, gender, birth date and age was written on the pre-assessment answer form. If the participant passed the pre-assessment the pre-assessment answer form and questionnaire was stapled to the score sheet, but if the participant did not pass the pre-assessment, the pre-assessment answer form was stapled to the questionnaire and stored separately.

3.11.2. Data collection procedures

In this section the data collection procedures are presented. The process took between 5 (for participants who did not pass the pre-assessment) and 30 minutes (for participants who passed the pre-assessment and continued with the interview).

After the researcher, research assistant (in the case of the Sepedi speaking participants) and the participant took their seats, the participant was asked his/her name and the tape recorder was switched on, whereupon the researcher introduced herself to the Afrikaans participants, while the research assistant introduced herself and the researcher to the Sepedi participants. All sessions were recorded. The participant was asked his/her age and told that the tape recorder was switched on to check whether the researcher wrote down everything correctly.

The pre-assessment procedure followed. The introduction and four pre-assessment stories (Appendices W1 to W3) were told to the participant. If the participant was unable to indicate the emotion portrayed he/she was given a choice (Appendices W1 to W3). All four stories were told to the participant even if he/she did not answer the question on the previous story correctly. If the participant was unable to indicate any of the four emotions (happy, sad, afraid and angry), he/she was excluded from the study, thanked for helping the researcher, given a sticker and sent back to class.

Participants continuing with the procedure were informed that he/she would be listening to more stories and then be given the opportunity to match each story with a picture he/she though went with the story. The overlay file (the file consisted of twenty four intensity scales and twenty four emotion overlays) was opened at the first intensity scale and the scale was explained to the participant. The participant was instructed that the small block meant 'just' and the big block meant 'very' (Appendices W1 to W3).

The protagonist was introduced to the participant as Sarie/Johan (Afrikaans speaking participants; Sarie is a girl and Johan a boy) or Lebo (Sepedi: speaking participants; Lebo can be either a girl or a boy). It was explained that the participant would hear about the protagonist and things that happened to him /her (Appendices W1 to W3).

The vignettes were read according to the protocol (Appendices W1 to W3). Whilst the researcher indicated on the intensity scale the researcher or research assistant asked the participant the equivalent of *If you were Sarie/Johan/Lebo, would feel 'emotion' or 'very emotion'?,* in which 'emotion' refers to either happy or sad or angry or afraid, depending on the vignette (Appendices W1 to W3). The participant had to indicate (point to) on the intensity scale if he/she thought Sarie/Johan/Lebo would feel 'emotion' or very 'emotion'. Participants who answered verbally were instructed again to indicate the intensity. The researcher indicated the participant's choice by circling the chosen intensity with a coloured pen on the score sheet (Appendix V).

The page was turned over and the participant was asked to indicate which symbol showed 'emotion'/'very emotion' (depending on the chosen intensity). The researcher facilitated scanning by pointing to each symbol on the overlay. The participant

pointed to the symbol he/she perceived to represent the 'emotion'/'very emotion' (depending on the intensity chosen). The researcher indicated the participant's choice with a cross on the miniature overlay on the score sheet. The researcher paged the overlay file to the next page (the next intensity scale) and the researcher or research assistant read the next vignette (Appendices W1 to W3). The researcher did all the recording of data on the score sheet and the previously described procedure was followed with all 24 vignettes for each participant.

After the completion of the above task the participant was thanked for taking part, received a sticker and was sent back to class. The tape recorder was switched off.

3.12. Reliability

3.12.1. Procedural integrity

In order to ensure that the data of the two language groups could be compared, it was extremely important to establish equivalence between the two processes. This was done, firstly, through the methodical translation of the protocol from Afrikaans to Sepedi as recorded in Table 3.2. Secondly, care was taken in the choice and training of the research assistant. The aims of and the reasoning for the study were discussed with her and the protocol was explained. The research assistant was given the opportunity to read through the protocol and ask clarifying questions. The research assistant took the protocol and overlays home and practised on neighbourhood children. The researcher and research assistant visited the school attended by Sepedi participants. This school assisted in the developing of material and also tested learners as practise. The procedures were further piloted in Afrikaans and Sepedi and necessary changes made (Table 3.3.).

To establish whether the above steps were adequate, the procedural integrity was tested. Forty percent of the audio recordings were rated for reliability by an Afrikaans and a Sepedi rater. The Afrikaans rater was a qualified occupational therapist with a PhD and an Afrikaans home language speaker, while the Sepedi rater was a qualified speech-language therapist and audiologist with a Masters Degree and a Sepedi home language speaker.

The raters each received a rating form and on it had to indicate whether the researcher/research assistant followed the protocol (Appendix X). A score out of 80 was given for each participant and an average for each language group was calculated using the following formula:

$$\text{procedural integrity scores for participants} = \frac{\text{sum of scores}}{\text{no. of participants}} \times \frac{100}{1}$$

The procedural integrity scores were 99% for both the Sepedi and Afrikaans data, indicating that both the researcher and research assistant followed the protocol, making it possible for the two groups to be compared.

3.12.2. Integrity of data collection

Each overlay and intensity scale was numbered to ensure accurate recording of data. During the data collection sessions the researcher recorded each participant's responses on an individual score sheet (Appendix V). Responses were subsequently transferred from each individual's score sheet to a collective sheet. These rewritten scores were double-checked by the researcher and a second person. The researcher captured the data from the collective sheet to a Microsoft Excel 2000 book. The data captured was compared to the collective sheet by the researcher and a second person. This procedure was necessary to make sure that no errors occurred during the data capturing process. Any transfer errors were corrected and the process was repeated until it no more transfer errors were found.

3.13. Analysis of data

The data was analysed with the help of a statistician from the Department of Statistics, University of Pretoria. The statistical packages used were SAS and BMDP. Table 3.5. gives a brief overview of the data and the procedures used to analyze it.

Table 3.5. Procedures used to analyze data.

Description of data	Statistical procedure that was used
Comparison between the Afrikaans and Sepedi language groups with regard to ages	t-test
Comparison between language and gender	Chi-Square
Statistical comparison between Afrikaans and Sepedi speaking participants with regard to symbols selected to represent emotions.	t-test
Comparison of expected and unexpected choices of graphic symbols to represent the basic emotions per vignettes across language groups.	Chi-square
Comparison of intensity ratings of vignettes in relation to basic emotions across language and gender groups.	t-test

3.14. Summary

The current chapter presents the main aim as well as the four sub-aims of the study. The material used in the study as well as the development of this material is discussed in depth. The pilot study is presented in table form, indicating the objectives of the pilot study as well as necessary changes made. The participants, schools as well as the selection criteria are discussed. In the final sections the procedure and the data analysis are presented.

CHAPTER 4
RESULTS

4.1. Introduction

In this chapter the results of the study are presented to correspond with the main aim of the study which was to describe and compare Afrikaans and Sepedi speaking grade R children's choice of graphic symbols for depicting four basic emotions, i.e. happy, sad, afraid and angry. Firstly the missing data is briefly discussed. The rest of the chapter focuses on presenting the data in correspondence with the sub-aims stated in Chapter 3. Figure 4.1. gives a schematic representation of the current chapter.

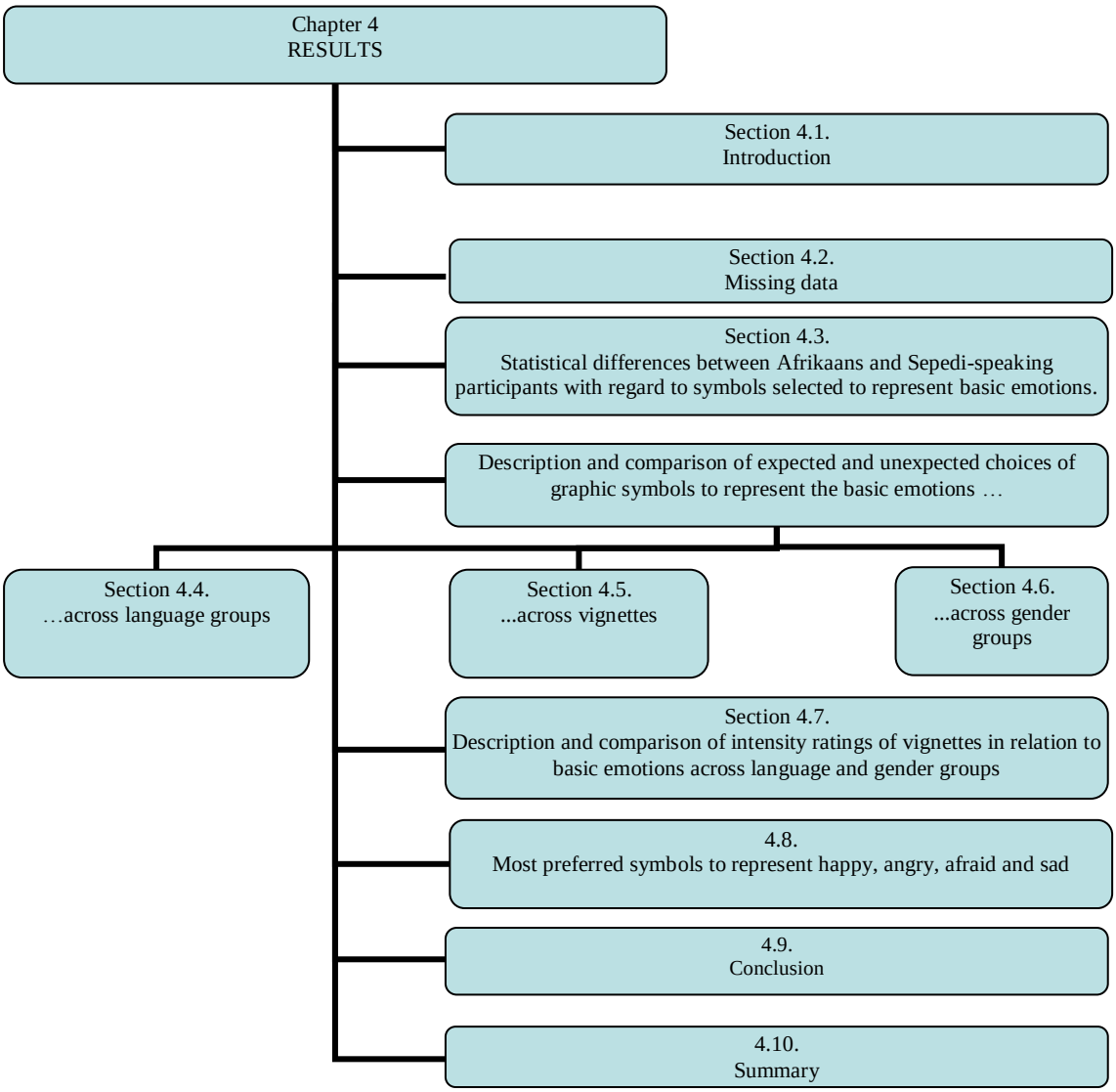


Figure 4.1. Schematic representation of the contents of Chapter 4.

4.2. Missing data

From a total of 4 320 possible responses, 8 could not be used in analysis. Table 4.1. presents the missing data with regard to language group and type of data missing.

Table 4.1. Missing data

	Missing data: Intensity	Missing data: Symbol	Total
Afrikaans	2	1	3
Sepedi	2	3	5
Total	4	4	8

Data regarding intensity was captured as missing when a participant said a specific intensity, but indicated the other intensity on the intensity scale or when he/she selected both the intensities on the intensity scale. Symbol data was captured as missing if the participant indicated two or more symbols to represent a specific vignette.

4.3. Statistical comparison between Afrikaans and Sepedi speaking participants with regard to expected and unexpected symbols selected to represent basic emotions.

The first sub-aim of the current study was to describe and compare expected and unexpected choices of graphic symbols to represent four basic emotions across language groups. Expected symbols refer to any of the 4 PCS systematically identified to represent a specific basic emotion. Due to the nature of the task the selection of an expected symbol is not more correct than the selection of an unexpected symbol. Unexpected symbols refer to any PCS on the presented overlay which is not one of the expected symbols of the target emotion. The results from the two language groups were analysed and the means statistically compared using t-tests. The results are presented in Table 4.2.

Table 4.2. Differences between Afrikaans and Sepedi participants with regard to the expected symbols selected to represent basic emotion.

	Afrikaans participants: Mean (SD)	Sepedi participants: Mean (SD)	p-value T-test
Happy	5.591 (0.844)	3.435 (1.834)	< 0.0001*
Sad	3.159 (1.855)	1.565 (1.148)	< 0.0001*
Afraid	3.273 (1.703)	1.739 (1.421)	< 0.0001*
Angry	5.068 (1.301)	2.000 (1.445)	< 0.0001*

* if $p<0.01$, then significant at a 1% level

Table 4.2. illustrates the significant difference at a 1% level between the two groups' selection of expected symbols to represent emotions. Afrikaans speaking participants more often chose expected symbols than Sepedi speaking participants to represent different basic emotions.

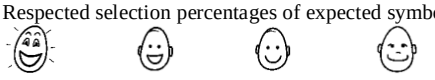
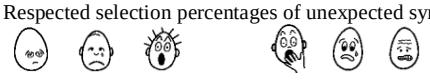
4.4. Description and comparison of expected and unexpected choices of graphic symbols across the two language groups

Results are presented in terms of participants' selection of expected and unexpected symbols. Expected symbols in this study refer to any of the 4 PCS systematically identified to represent a specific basic emotion. Unexpected symbols in turn refer to any PCS on the presented overlay which is not one of the expected symbols of the target basic emotion. Due to the nature of the task selecting an expected symbol is not more correct than selecting an unexpected symbol. For every emotion there were four possible expected symbols and twelve possible unexpected symbols for participants to select from. The selection process of these sixteen symbols is discussed under Section 3.6.2. in Chapter 3. The expected and most frequently selected unexpected symbols are presented in detailed tables. The remaining unexpected symbols are mentioned under 'remaining unexpected symbols' and are presented in Appendix Y. Participants most frequently selected expected symbols to represent *happy* followed by those for *angry* and *afraid* with expected symbols for *sad* selected least frequently. The results are presented in the order stated above.

4.4.1. Symbols selected to represent happy

Table 4.3. presents the four expected symbols as well as the unexpected symbols selected most frequently by Afrikaans and Sepedi speaking participants to represent *happy*. (The rest of the unexpected symbols are represented in Table 1., Appendix Y).

Table 4.3. Expected and unexpected symbols selected by Afrikaans and Sepedi speaking participants to represent *happy*

	Expected symbols				Unexpected symbols		
Afrikaans speaking participants	Total selection percentage of expected symbols 93.18%				Total selection percentage of unexpected symbols 6.82%		
Symbols	Respected selection percentages of expected symbols 				Respected selection percentages of unexpected symbols 		Remaining unexpected symbols
Percentage	45.83%	21.21%	16.67%	9.47%	1.14%, 1.14%,1.14%	0.76%, 0.76%, 0.76%	1.14%

	Expected symbols				Unexpected symbols			
Sepedi speaking participants	Total selection percentage of expected symbols 57.45% Respected selection percentages of expected symbols				Total selection percentage of unexpected symbols 42.54% Respected selection percentages of unexpected symbols			
Symbols								Remaining unexpected symbols
Percentage	22.18%	14.91%	13.45%	6.91%	4.73%, 4,73%	4.36%	4.00%	24.72%

Table 4.3. shows that Afrikaans and Sepedi speaking participants selected one of the expected symbols to represent *happy* with a frequency of 93.18% and 57.25% respectively. The successive order in which the four expected symbols were selected were the same for both language groups' participants, namely symbol 1 [ ], symbol 13 [ ], symbol 5 [ ] and symbol 9 [ ].

Afrikaans speaking participants selected 9 (6.82%) unexpected symbols to represent *happy*, with no apparent pattern. Symbols 2 [ ] (1.14%), 10 [ ] (1.14%) and 11 [ ] (1.14%) were selected most frequently followed by symbols 7 [ ] (0.76%), 14 [ ] (0.76%) and 15 [ ] (0.76%). The other unexpected symbols were chosen with a frequency of 1.14%.

Sepedi speaking participants made use of all 12 unexpected symbols. The four unexpected symbols selected most frequently by Sepedi speaking participants were symbol 11 [ ] (4.73%), symbol 12 [ ] (4.73%), symbol 8 [ ] (4.36%) and symbol 2 [ ] (4.00%). The other eight unexpected symbols were selected with a frequency of 24.72% with no apparent pattern.

4.4.2. Symbols selected to represent angry

Table 4.4. presents the four expected symbols as well as the most frequently selected unexpected symbols by Afrikaans and Sepedi speaking participants to represent *angry*. (The rest of the unexpected symbols are represented in Table 2., Appendix Y.)

Table 4.4. Expected and unexpected symbols selected by Afrikaans and Sepedi speaking participants to represent *angry*

	Expected symbols				Unexpected symbols				
Afrikaans speaking participants	Total selection percentage of expected symbols 84.79% Respected selection percentages of expected symbols				Total selection percentage of unexpected symbols 15.20% Respected selection percentages of unexpected symbols				
Symbols									Remaining unexpected symbols
Percentage	51.33%	20.91%	8.37%	4.18%	3.04%	2.28%, 2.28%	1.90%	1.90%	3.8%

	Expected symbols				Unexpected symbols				
Sepedi speaking participants	Total selection percentage of expected symbols 33.32%				Total selection percentage of unexpected symbols 66.68%				
	Respected selection percentages of expected symbols				Respected selection percentages of unexpected symbols				
Symbols									Remaining unexpected symbols
Percentage	10.87%	10.14%	6.88%	5.43%	8.70%	7.97%	7.25%	6.16% ,6.16%	30.44%

Table 4.4. indicates that Afrikaans speaking participants selected expected symbols 84.79% and unexpected symbols 15.20% to represent *angry*. Sepedi speaking participants selected expected symbols 33.32% to represent *angry* and unexpected symbols 66.68%. The expected symbol selected most by Afrikaans speaking participants to represent angry was symbol 8 [ ] (51.33%), followed by symbol 4 [ ] (20.91%), symbol 12 [ ] (8.37%) and symbol 16 [ ] (4.18%). In comparison, the Sepedi speaking participants most frequently selected symbol 12 [ ] (10.87%) to represent *angry*, followed by symbol 8 [] (10.14%), symbol 4 [ ] (6.88%) and symbol 16 [ ] (5.43%).

Afrikaans speaking participants used 8 unexpected symbols to represent *angry*, namely symbol 3 [ ] (3.04%), symbols 6 [ ] (2.28%) and 11 [ ] (2.28%) and symbols 7 [ ] (1.90%) and 10 [ ] (1.90%). The other three unexpected symbols were selected with a frequency of 3.8%. Sepedi speaking participants used all 12 unexpected symbols to represent *angry*. They selected symbol 3 [ ] most frequently (8.70%) followed by symbols 10 [ ] (5.97%), 2 [ ] (7.25%), 1 [ ] (6.16%) and 11[ ] (6.16%). Sepedi speaking participants selected the other seven unexpected symbols a total of 30.44%, with no apparent pattern.

4.4.3. Symbols selected to represent *afraid*

Table 4.5. presents the four expected symbols as well as the most frequently selected unexpected symbols by Afrikaans and Sepedi speaking participants to represent *afraid*. (The rest of the unexpected symbols are presented in Table 3., Appendix Y.)

Table 4.5. Expected and unexpected symbols selected by Afrikaans and Sepedi speaking participants to represent afraid

	Expected symbols				Unexpected symbols			
Afrikaans speaking participants	Total selection percentage of expected symbols 54.55%				Total selection percentage of unexpected symbols 45.47%			
Symbols	Respected selection percentages of expected symbols				Respected selection percentages of unexpected symbols			Remaining unexpected symbols
Percentage	17.05%	15.53%	14.39%	7.58%	14.02%	7.58%	6.06%, 6.06%	11.75%
Sepedi speaking participants	Total selection percentage of expected symbols 29.09%				Total selection percentage of unexpected symbols 71.91%			
Symbols	Respected selection percentages of expected symbols				Respected selection percentages of unexpected symbols			Remaining unexpected symbols
Percentage	10.55%	8.36%	7.27%	2.91%	10.18%	9.82%	7.27% , 7.27%	36.27%

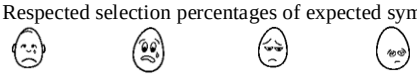
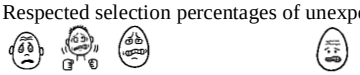
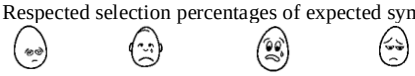
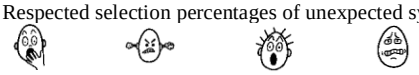
Afrikaans speaking participants selected expected symbols (54.55%) to represent *afraid.* Symbol 11 [ ] (17.05%) was selected most frequently followed by symbol 7 [ ] (15.53%), symbol 3 [ ] (14.39%) and symbol 15 [ ] (7.58%). Sepedi speaking participants selected expected symbols to represent *afraid* 29.09%; they selected symbol 7 [ ] (10.55%) most frequently followed by symbol 11 [ ] (8.36%), symbol 3 [ ] (7.27%) and symbol 15 [ ] (2.91%).

Afrikaans speaking participants used 10 unexpected symbols to represent *afraid.* They selected symbol 16 [ ] most frequently (14.02%), followed by symbols 14 [ ] (7.58%), 10 [ ] (6.06%) and 12 [ ] (6.06%). They selected the other six unexpected symbols a total of 11.75%. Sepedi speaking participants used all unexpected symbols to represent *afraid*. They selected unexpected symbol 2 [ ] most frequently (10.18%) followed by symbols 16 [ ] (9.82%), 8 [ ] (7.27%) and 16 [ ] (7.27%) to represent *afraid.* The other eight unexpected symbols were selected with a frequency of 36.27%.

4.4.4. Symbols selected to represent *sad*

Table 4.6. present the four expected symbols as well as the most frequently selected unexpected symbols by Afrikaans and Sepedi speaking participants to represent *sad*. (The rest of the unexpected symbols are presented in Table 4., Appendix Y.)

Table 4.6. Expected and unexpected symbols selected by Afrikaans and Sepedi speaking participants to represent sad

	Expected symbols				Unexpected symbols				
Afrikaans speaking participants	Total selection percentage of expected symbols 52.65%				Total selection percentage of unexpected symbols 47.35%				
Symbols	Respected selection percentages of expected symbols 				Respected selection percentages of unexpected symbols 				Remaining unexpected symbols
Percentage	20.08%	17.42%	9.85%	5.30%	10.23%, 10.23%, 10.23%		6.82%		9.85%
Sepedi speaking participants	Total selection percentage of expected symbols 26.08%				Total selection percentage of unexpected symbols 73.92%				
Symbols	Respected selection percentages of expected symbols 				Respected selection percentages of unexpected symbols 				Remainig unexpected symbols
Percentage	7.97%	6.88%	6.52%	4.71%	9.78%	8.70%	7.97%	7.16%	39.86%

From Table 4.6. it is evident that Afrikaans speaking participants selected expected symbols 52.65% to represent *sad*, while Sepedi speaking participants selected expected symbols 26.08% to represent *sad*. Afrikaans speaking participants selected symbol 10 [ ] (20.08%) most frequently, followed by symbol 14 [ ] (17.42%), symbol 6 [ ] (9.85%) and symbol 2 [ ] (5.30%). Sepedi speaking participants selected symbol 2 [ ] (7.97%) most frequently, followed by symbols 10 [ ] (6.88%), 14 [ ] (6.52%) and 6 [ ] (4.71%).

Afrikaans speaking participants used 10 unexpected symbols to represent *sad*; symbols 12 [ ] (10.23%), 3 [ ] (10.23%), 16 [ ] (10.23%) most frequently followed by symbol 15 [ ] (6.82%). The other six the unexpected symbols were selected a total of 9.85%. Sepedi speaking participants used all unexpected symbols to represent *sad*; symbols 7 [ ] (9.78%), 8 [ ] (8.70%), 11 [ ] (7.97%) and 16 [ ] (7.16%). The other eight unexpected symbols were used a total of 39.86%.

4.5. Description and comparison of expected and unexpected choices of graphic symbols to represent the basic emotions per vignettes across language groups

When looking at each vignette separately, there were significant differences between the number of expected and unexpected symbols selected by each language group for all but six vignettes. The results for each vignette are presented in Table 4.7.

Table 4.7. Differences in number of expected and unexpected symbols selected per vignette with regard to language

Vignettes	Symbol	Afrikaans participants % (N)	Sepedi participants % (N)	Chi-square p value
HAPPY Vignette 3	Unexpected Expected	9.09 (4) 90.91(40)	45.65 (21) 54.35 (25)	0.0001*
HAPPY Vignette 9	Unexpected Expected	9.09 (4) 90.91(40)	45.65 (21) 54.35 (25)	0.0001*
HAPPY Vignette 10	Unexpected Expected	9.09 (4) 90.91(40)	47.83 (22) 52.17 (25)	< 0.0001*
HAPPY Vignette 15	Unexpected Expected	2.27 (1) 97.73(43)	36.96 (17) 63.04 (29)	< 0.0001*
HAPPY Vignette 19	Unexpected Expected	4.55 (2) 95.45 (42)	39.13 (18) 60.87 (28)	< 0.0001*
HAPPY Vignette 24	Unexpected Expected	6.82 (3) 93.18 (41)	41.30 (19) 58.70 (27)	0.0001*
SAD Vignette 1	Unexpected Expected	59.09 (26) 40.91 (18)	80.43 (37) 19.57 (9)	0.0272
SAD Vignette 2	Unexpected Expected	54.55 (24) 45.45 (20)	82.61 (38) 17.39 (8)	0.0040*
SAD Vignette 5	Unexpected Expected	61.36 (27) 38.64 (17)	60.87 (28) 39.13 (18)	0.9617
SAD Vignette 13	Unexpected Expected	25.00 (11) 75.00 (33)	69.57 (32) 30.43 (14)	< 0.0001*
SAD Vignette 14	Unexpected Expected	50.00 (22) 50.00 (22)	69.57 (32) 30.43 (14)	0.0582
SAD Vignette 16	Unexpected Expected	34.09 (15) 65.91 (29)	80.43 (37) 19.57 (9)	< 0.0001*
AFRAID Vignette 4	Unexpected Expected	45.45 (20) 54.55 (24)	76.09 (35) 23.91 (11)	0.0029*
AFRAID Vignette 6	Unexpected Expected	47.73 (21) 52.27 (23)	73.91 (34) 26.09 (12)	0.0109
AFRAID Vignette 7	Unexpected Expected	56.82 (25) 43.18 (19)	60.87 (28) 39.13 (18)	0.6962
AFRAID Vignette 12	Unexpected Expected	34.09 (15) 65.91 (29)	69.57 (32) 30.43 (14)	0.0008*

Vignettes	Symbol	Afrikaans participants % (N)	Sepedi participants % (N)	Chi-square p value
AFRAID Vignette 17	Unexpected Expected	40.91 (18) 59.09 (26)	78.26 (36) 21.74 (10)	0.0003*
AFRAID Vignette 20	Unexpected Expected	47.73 (21) 52.27 (23)	67.39 (31) 32.61 (15)	0.0590
ANGRY Vignette 8	Unexpected Expected	15.91 (7) 84.09 (37)	63.04 (29) 36.96 (17)	< 0.0001*
ANGRY Vignette 11	Unexpected Expected	4.55 (2) 95.45 (42)	65.22 (30) 34.78 (16)	< 0.0001*
ANGRY Vignette 18	Unexpected Expected	18.18 (8) 81.82 (36)	69.57 (32) 30.43 (14)	< 0.0001*
ANGRY Vignette 21	Unexpected Expected	20.45 (9) 79.55 (35)	65.22 (30) 34.78 (16)	< 0.0001*
ANGRY Vignette 22	Unexpected Expected	15.91 (7) 84.09 (37)	58.70 (27) 41.30 (19)	< 0.0001*
ANGRY Vignette 23	Unexpected Expected	18.18 (8) 81.82 (36)	78.26 (36) 21.74 (10)	< 0.0001*

* if p<0.01, then significant at a 1% level

From Table 4.7. it is evident that there is significant differences in the number expected and unexpected symbols selected by Afrikaans and Sepedi speaking participants for all but vignettes 1, 5 and 14 (sad vignettes), 6, 7 and 20 (afraid vignettes).

4.6. Description and comparison of expected and unexpected choices of graphic symbols to represent the basic emotions across gender groups

Table 4.8. presents the comparison of the means across gender groups with regard to the symbols selected to represent the emotions.

Table 4.8. Expected symbols selected: Comparison of means across gender groups

	Male participants Mean (SD)	Female participants Mean (SD)	p-value Separate T
Happy	4.689 (1.550)	4.289 (2.007)	0.293
Sad	2.156 (1.623)	2.533 (1.817)	0.301
Afraid	3.644 (1.944)	3.356 (2.186)	0.510
Angry	2.489 (1.604)	2.489 (1.878)	>0.9999

* if p<0.01, then significant at a 1% level

Table 4.8. illustrates no significant difference between the two gender groups' choices of expected symbols to represent emotions.

4.7. Description and comparison of intensity ratings of vignettes in relation to basic emotions across language and gender groups

To determine whether the perceived intensity of the emotional experience had an influence on the symbols selected, participants were asked to rate the intensity they perceived the vignette to have on a scale of 'just the emotion' or 'very the emotion' before choosing the symbol they thought represented the emotion and the intensity. Table 4.9. presents the comparison of the means across language groups.

Table 4.9. Intensities selected: Comparison of means across language groups

	Afrikaans speaking Participants Mean (SD)	Sepedi Speaking participants Mean (SD)	p-value Separate T
Happy	11.432 (0.900)	10.391 (1.584)	0.0003*
Sad	11.068 (1.228)	10.609 (1.483)	0.1124
Afraid	11.273 (1.107)	10.522 (1.629)	0.0121
Angry	11.364 (1.259)	10.870 (1.759)	0.1281

* if $p<0.01$, then significant at a 1% level

Table 4.9. illustrates that except for a significant difference at the 1% level for happy no significant differences were present between the intensities selected by the different language groups for the other three basic emotions. Table 4.10. presents the means across gender groups.

Table 4.10. Intensities selected: comparison of means across gender groups

	Male participants Mean (SD)	Female participants Mean (SD)	p-value Separate T
Happy	10.822 (1.571)	10.978 (1.196)	0.5986
Sad	10.711 (1.502)	10.956 (1.242)	0.4025
Afraid	10.844 (1.476)	10.933 (1.421)	0.7717
Angry	10.933 (1.643)	11.289 (1.440)	0.2780

* if $p<0.01$, then significant at a 1% level

Table 4.10. illustrates no significant difference between the intensities selected by the different gender groups.

4.8. Most preferred symbols to represent happy, angry, afraid and sad

Table 4.11. presents each emotion with the most preferred symbols selected by Afrikaans- and Sepedi-speaking participants to represent the particular emotion. Preferred symbols can be defined as the symbols participants selected most to represent particular emotions.

Table 4.11. Symbols preferred most to represent basic emotions

Emotion	Participants	Most preferred symbols			
Happy	Afrikaans speaking				
		Expected symbol 1	Expected symbol 13	Expected symbol 5	Expected symbol 9
		45.83%	21.21%	16.67%	9.47%
	Sepedi speaking				
		Expected symbol 1	Expected symbol 13	Expected symbol 5	Expected symbol 9
		22.18%	14.91%	13.45%	6.91%
Angry	Afrikaans speaking				
		Expected symbol 8	Expected symbol 4	Expected symbol 12	Expected symbol 16
		51.33%	20.91%	8.37%	4.18%
	Sepedi speaking				
		Expected symbol 12	Expected symbol 8	Unexpected symbol 3	Unexpected symbol 10
		10.87%	10.14%	8.70%	7.97%
Afraid	Afrikaans speaking				
		Expected symbol 11	Expected symbol 7	Expected symbol 3	Unexpected symbol 16
		17.05%	15.53%	14.39%	14.02%
	Sepedi speaking				
		Expected symbol 7	Unexpected symbol 2	Unexpected symbol 6	Expected symbol 11
		10.55%	10.18%	9.82%	8.36%
Sad	Afrikaans speaking				
		Expected symbol 10	Expected symbol 14	Unexpected symbols 3, 12 and 16	
		20.08%	17.42%	10.23% each	
	Sepedi speaking				
		Unexpected symbol 7	Unexpected symbol 8	Expected symbol 2 and unexpected symbol 11	
		9.78%	8.70%	7.97% each	

From Table 4.11. it is clear that both Afrikaans and Sepedi speaking participants selected the four expected symbols (1 [ ], 13 [ ], 5 [ ] and 9 [ ]) as the most preferred choices to represent *happy*. It is further evident that Afrikaans speaking participants selected the four expected symbols (8 [ ], 4 [ ], 12 [ ] and 16 [ ]) as the most preferred choices to represent *angry*. Sepedi speaking participants selected two expected symbols (12 [ ] and 8 [ ]) as the two most preferred symbols and two unexpected symbols (3 [ ] and 10 [ ]) as the third and fourth most preferred symbols to represent *angry*.

Table 4.11. also indicates that Afrikaans speaking participants selected expected symbols 11 [ ], 7 [ ] and 3 [ ] as the first, second and third most preferred symbols and unexpected symbol 16 [ ] as the fourth preferred symbol to represent *afraid*. Sepedi speaking participants selected expected symbol 7 [ ] as the most preferred symbol and unexpected symbols 2 [ ] and 6 [ ] as the second and third preferred and expected symbol 11 [ ] as the fourth preferred symbol to represent *afraid*. Finally Afrikaans speaking participants selected two expected symbols (10 [ ] and 14 [ ]) as most and second most preferred symbols and three unexpected symbols (3 [ ], 12 [ ] and 16 [ ]) as combined third preferred symbols to represent *sad*. Sepedi speaking participants selected two unexpected symbols (7 [ ] and 8 [ ]) as the most and second most preferred symbols and one expected symbol (2 [ ]) and one unexpected symbol (11 [ ]) combined as the third preferred symbols to represent *sad*.

4.9. Conclusion

Results indicated a significant difference between Afrikaans and Sepedi speaking participants with regard to the symbols they selected to represent basic emotions. Results indicated a difference in the symbols the two language groups preferred to represent the four emotions. Analysis of the intensity data revealed a significant difference between the two language groups only for *happy*. No significant differences were observed between the genders with regard to symbols selected, or with regard to intensity data.

4.10. Summary

This chapter presented the results of the study with regard to the main aim i.e. comparing and describing Afrikaans and Sepedi speaking grade R children's choice of graphic symbols when depicting four basic emotions. The results were presented according to the four sub-aims and will be discussed in the next chapter. The missing data were briefly discussed.

CHAPTER 5
DISCUSSION

5.1. Introduction

This study largely confirms significant differences between how two groups of children from different language contexts recognize and select graphic symbols representing emotions. The discussion will focus on exploring some factors that could have impacted on these results.

5.2. Choice of expected and unexpected symbols

Significant differences at the 1% level between the expected symbols selected by the different language groups to represent *happy*, *angry*, *afraid* and *sad* were observed (Table 4.2.). These results support the differences observed in studies that investigated different symbol characteristics within different language groups in the South African context (Basson & Alant, 2005; Haupt & Alant, 2002), accentuating the dynamic relationship between language groups and the interpretation of symbols (Bornman, et al., 2009).

It was also further indicated in Tables 4.3 to 4.6 that not only did these two language groups differ in relation to their choices of which graphic symbols represent an emotion, but the range of symbols selected per emotion varied. It was the Sepedi-speaking participants who had the broader range of representations for each emotion which seem to suggest a greater variability in their perception of the symbols representing the emotions. This variability might be indicative of less exposure to graphic symbols representing emotions, hence more uncertainty or inconsistency in the association between graphic symbols and these emotions. The process of visual perception is highly influenced by the cultural and social context within which the individual lives (Alant, 2005) and these cultural differences in the perception of graphic symbols have been recorded (Carter, et al., 2005; Deregowski, 1971; Duncan, et al., 1973; Miller, 1973) and could explain the difference.

Another factor that might have impacted on this difference between the groups is that the Afrikaans-speaking participants, possibly having a stronger literate background might have been more skilled at scanning the overlays in finding the same graphic emotions while the Sepedi-speaking participants tended to be slower and perhaps less critical in their selection of a graphic symbol to represent an emotion. This could be particularly relevant as the

graphic symbols on the overlays for each of the vignettes were randomly presented and hence required that the participant searched through all 16 graphic symbols to find the appropriate symbol each time.

Although the different symbols were classified as expected and unexpected symbols it is important to note that there were no 'correct' and 'incorrect' answers, since the main aim of the study was to describe and compare the two language groups' selection of graphic symbols when depicting four basic emotions. Expected symbols in this study refer to any of the 4 PCS systematically identified to represent a specific basic emotion. Unexpected symbols in turn refer to any PCS on the presented overlay which is not one of the expected symbols of the target basic emotion. Due to the nature of the task selecting an expected symbol is not more correct than selecting an unexpected symbol. Overall Afrikaans-speaking participants selected more expected symbols than Sepedi-participants.

Both language groups were more often in agreement regarding expected symbols representing *happy*, followed by *angry*, *afraid* and lastly *sad*. English-speaking participants in another South African study by Visser, et al. (2008) also chose expected symbols in this order. The order of accuracy mostly mentioned in emotion recognition literature is *happy* followed by *sad*, *anger* and *fear* (Denham, & Couchoud, 1990a; b; MacDonald & Kirkpatrick, 1996). Some researchers have found variations regarding the order of *sad*, *anger* and *fear*, but *sad* was never the least accurate (Boyatzis, et al., 1993; Holder & Kirkpatrick, 2001; Walden & Field, 1982).

Landmarks in a child's development are often used to chart development (Widen & Russell, 2008a), when a child first uses the word *happy* it is said to mark the acquisition of happiness. According to the Differentiation Model which describes children's acquisition of emotion concepts (Widen & Russell, 2003; 2008a) and is presented in Figure 2.1 in Chapter 2, the first step is the emergence of the label for happy; the next step is the use of two labels, one positive emotion (happy) and one negative emotion, either sad or angry. The next level is the use of three labels with a division in the negative emotions (sad and angry). Finally the words surprised, scared and disgusted are added to the child's lexicon.

As the acquisition of the label is associated with the acquisition of the concept the Differentiation Model (Widen & Russell, 2003; 2008a) could help to account for why angry symbols were chosen more accurately than sad symbols. It could be that the participants of this particular study developed the concept for anger before they developed the concept for sadness. The model does not give an explanation to why *afraid* symbols were also chosen more accurately than *sad* symbols.

Schematic drawings representing emotions (MacDonald & Kirkpatrick, 1996) consisted of different facial emotional expression based on Ekman and Friesen's (1975) evaluations of facial components of emotional expressions. Of the six emotions used by MacDonald and Kirkpatrick (1996) accuracy was the greatest for *happiness*, followed by *sadness*, *anger*, *disgust*, *fear* and *surprise* (in descending order), indicating that their participants identified the schematic drawing representing sadness easier than the schematic drawings representing anger and fear.

It could be that the participants did not perceive the specific symbols chosen to represent *sad* to be good representations of *sad*. PCS is a symbol set with no logical base for the expansion of vocabulary (Fuller, 1997) and it is uncertain whether any specific structure was used in the development of the PCS to represent the emotions. It is, however, unlikely, because some of the PCS can according to Boardmaker version 6 demo (© 1981-2007 Mayer-Johnson) represent more than one emotion (Appendix H).

As expected both groups was less accurate with later developing emotions i.e. *angry*, *afraid* and *sad* than with the first emotion to develop (*happy*) (Denham, 1989; Camras & Allison, 1985). Unfortunately there is a paucity on South African studies looking at the development of recognition of emotions in South African children and can these results not be compared to South African results.

5.3. Most preferred symbols to represent the emotions

Preferred symbols can be defined as the symbols participants selected to represent a particular emotion. In an attempt to understand why certain symbols were preferred over other symbols to represent *happy*, *angry*, *afraid* and *sad* the features of the more often selected symbols were analyzed.

5.3.1. Symbols representing *happy*

Symbol 1 [ ] was the most preferred choice to represent *happy* for both language groups. The facial features of this symbol are an open mouthed smile with raised lip corners, raised eyebrows and large open eyes. This symbol displays extra features in the form of 'light rays' around the face. Sullivan and Kirkpatrick (1996) found that children focus on the lower component of the face (the mouth) when interpreting happy facial expressions. According to Kohler, et al., (2004) raised eyebrows and an open mouth are facial features evident in the expression of *happy*. Herba, Landua, Russell, Ecker, and Phillips (2006) found that higher expression intensity was associated with more accurate matching, particularly for the expression of fear, disgust and happiness. The 'light rays' around the face could be seen as intensity markers indicating 'more happy' than the other symbols.

Symbol 1 [ ] is also distinct from the other expected *happy* symbols, since for instance symbol 13 [ ] does not show raised eyebrows, wide open eyes or 'light rays' and symbols 5 [ ] and 9 [ ] do not display raised eyebrows, wide open eyes, an open mouth or 'light rays'. Symbol 13 [ ] in turn is distinct from symbols 5 [ ] and 9 [ ] in that it does have an open mouth. These distinct features of symbols 1 [ ] and 13 [ ] could explain why they were the most preferred choices in representing *happy*.

5.3.2. Symbols representing *angry*

According to literature the facial features presented for *anger* are furrowed eyebrows or lowered eyebrows drawn together, eyes wide open with a tightened lower lid, a nose wrinkle, raised upper and turned lower lips exposing teeth as well as stretched lip corners and a jaw drop or pressed lips (Ekman and Friesen, 1975; Kohler, et al., 2004; Sullivan and Kirkpatrick, 1996). Sullivan and Kirkpatrick (1996) found that children focussed on the upper component when interpreting angry facial expressions. Kirkpatrick and Bell (1996) found that heavy (thick) eyebrows were chosen more frequently for *anger*, *disgust*, *fear*, *sadness* and *surprise* than thin or neutral eyebrows

The expected symbol 8 [ ] was Afrikaans speaking participants' most preferred choice for representing *angry*. The facial features of symbol 8 [ ] are inner corners of eyebrows lowered, dot eyes, open mouth exposing teeth and stretched lip corners; an extra feature of

steam/smoke coming out of the ears is also present. The facial features also seemed to be drawn together.

What differentiated symbol 8 [ ] most from the other expected symbols were the eyebrows which appear to be thick, the steam/smoke coming out of the ears and the drawn together facial features. Symbol 4 [ ], selected second most by Afrikaans speaking participants has small eyes with the inner corners of the eyelids lowered and a furrowed mouth. Symbols 12 [ ] and 16 [ ] also had open lips, with stretched lip corners exposing teeth; furthermore, these symbols have wide open eyes. Results seem to indicate that for the Afrikaans speaking participants the thick eyebrows and steam/smoke coming out of the ears carried more weight than the wide open eyes when choosing a preferred symbol to represent *angry*.

Sepedi speaking participants preferred expected symbol 12 [ ] to represent *angry*. Symbol 12's [ ] features can be described as raised eyebrows, wide open eyes, and an open mouth with stretched lip corners (corners turned down) exposing teeth; extra features are raised hair, fists, action indicators and accentuation lines around the eyes and mouth . Their second choice was symbol 8 [ ]. The features which most distinguished symbol 12 [ ] from the other expected symbols are the extra features. Symbol 3 [ ], an unexpected symbol, was chosen third most by the Sepedi speaking participants. Symbol 3's [ ] features are a frowned forehead, wide open eyes, a down turned mouth and a nose.

5.3.3. Symbols representing *afraid*

Facial features of *afraid* expressions are furrowed and raised eyebrows, eyebrows drawn together, eyes wide open, raised upper eye lid, tense lower eyelids, stretched lips/mouth and a dropped jaw (Ekman and Friesen, 1975; Kohler, et al., 2004; Sullivan and Kirkpatrick, 1996).

Expected symbol 11 [ ] was the Afrikaans speaking participants' and the Sepedi-speaking participants' second most preferred choice to represent *afraid*. Symbol features are raised eyebrows, big open eyes and an open mouth (black) with an extra feature of hair standing up on the head. The expected symbol chosen most by Sepedi speaking participants and second most by Afrikaans speaking participants was symbol 7 [ ] with raised eyebrows, big open eyes, an open mouth (dark), a nose and the extra feature of a hand in front of the mouth. The only differences between these two symbols are the nose (symbol 7 [ ]) and the hair

standing up on the head (symbol 11 [ ]). These two symbols differ from the other expected symbols with regard to the raised eyebrows, very wide open eyes and a dark open mouth. The expected symbols 3 [ ] and 15 [ ] both have stretched lips and symbol 3 [ ] also has open eyes. According to Kirkpatrick and Bell (1996) children focus on eyebrows when identifying fear. It seems that the participants in the study focussed on the raised eyebrows in selecting symbols 11 [ ] and 7 [ ] as their top representations of *afraid*.

Unexpected symbols 2 [ ] and 6 [ ] were chosen by Sepedi speaking participants to represent *afraid* over the expected symbols 3 [ ] and 15 [ ]. The two unexpected symbols both have eyebrows, which are absent in symbols 3 [ ] and 15 [ ]. Symbols 2 [ ] and 6 [ ] also have wider open than symbol 15 [ ]. Since Sepedi speaking participants seemed to focus on the upper component in choosing symbols 7 [ ] and 11 [ ] as their 1st and 2nd choice to represent *afraid* the open eyes with eyebrows of the expected *sad* symbols might have lead them to choose these symbols as their 3rd and 4th choices.

5.3.4. Symbols representing *sad*

According to literature the features for *sad* are inner eyebrows raised and drawn together, furrowed eyebrows, eye lids tight, an opened mouth with upper lip being raised, lip corners stretched and turned down, pulled up chin. Afrikaans speaking participants chose expected symbol 10 [ ] as the most representative symbol for sad. Symbol 10's [ ] features are no eyebrows, eyelids turned down, large mouth curved downwards and an extra feature of a tear on the cheek; the features of symbols 14 [ ] which was chosen second most are eyebrows curved down (inner corners raised), big open eyes, an opened mouth with lip corners turned down and an extra feature of a tear on the cheek. Sullivan and Kirkpatrick (1996) found that when identifying *sad*, children focussed on the mouth. The three unexpected choices all had a down turned mouth. What differentiates these symbols from the symbols mostly chosen is the tear on the cheek. It seemed that Afrikaans speaking participants made use of the tear on the cheek to differentiate the symbols representing sad when the other symbols also had mouth corners turned down.

Sepedi speaking participants chose the unexpected symbol 7 [ ] to represent *sad* the most. This symbol has none of the sad features; the unexpected symbol 8 [ ] which was chosen second most shows a mouth with stretched lip corners which could look like lips turned down. Expected symbol 2 [ ] was chosen third most, equal to unexpected symbol 11 [ ]; its features are hanging/drooping eyebrows and a small mouth turned downwards. All three the unexpected choices had extra features. It seems as if Sepedi speaking participants were unsure of which symbols could represent *sad* and chose the symbols with extra features.

All of the most preferred symbols (1 [ ], 7 [ ], 8 [ ], 10 [ ], 11 [ ], 12 [ ]) had extra features. This may indicate that the participants in the current study did not only look at the facial features, but at all the features present. It could further be that the extra features drew more attention to the particular symbols. In real life situations when interpreting others emotions and actions the perceiver is almost never exposed to the face only. With developing or choosing symbols to represent emotions clinicians might want to use symbols that also include some of the context.

5.4. Intensity ratings of vignettes in relation to basic emotions across language and gender groups

The third sub-aim of the current study was to compare and describe the intensity ratings of vignettes in relation to each basic emotion across language and gender groups. The only significant difference found between language groups was in regard *happy*. Sepedi speaking participants selected *happy* more often than their Afrikaans speaking peers who selected *very happy* to describe the intensity of the *happy* vignettes.

According to Wang (2003) the intensity component of emotion situation knowledge is sensitive to cultural influences. In his study American participants assigned higher intensity ratings to emotions than their Chinese counterparts, especially for negative emotions. Participants in the current study did not make use of the opportunity to use intensity. This could indicate that the participants (Afrikaans- and Sepedi-speaking) were unable to indicate gradation of emotions on the measuring instrument (bar graph) used in the study. Whether or not participants in the current study understands the gradation of emotions were beyond the study's scope. It might be necessary to go a step back and see how South African children

interpret gradation of emotion, before trying to see how gradation of emotion concepts influences the selection of symbol representing emotions.

5.5. Gender groups

Several research studies in the field of emotions found gender differences regarding the development of emotions (Boyatzis, et al., 1993; Brown & Dunn, 1996; Denham, et al., 1990; Holder, & Kirkpatrick, 2001), while other studies demonstrated contradictory findings with no apparent gender differences (Bennett, et al., 2005; MacDonald & Kirkpatrick, 1996). Findings of the current study were analyzed taking gender as a potential influence into consideration.

Results indicate no difference between male's and female's perception of the symbols. These results seem to support studies by Bennett, et al. (2005) and MacDonald and Kirkpatrick (1996) where no gender differences were indicated. The study by Bennett, et al. (2005) investigated individual differences in emotion knowledge, while MacDonald and Kirkpatrick (1996) investigated how accurately children recognised facial expressions for emotions using schematic drawings and photographs as stimuli. Kirkpatrick and Bell (1996) mentioned that the gender differences found in some studies investigating emotions are likely to be reflective of method rather than actual differences.

5.6. Summary

This chapter discussed the study's results. Firstly the significant differences at the 1% level between the expected symbols selected by the different language groups to represent basic emotions were discussed. The differences and possible reasons for these differences between the expected and unexpected choices of graphic symbols to represent basic emotions across the language groups were discussed. In a further attempt to explain the symbol choices the different symbols were analysed with regard to different facial features. The possible reasons for the lack of significant differences with regard to the intensities and gender were briefly discussed.

CHAPTER 6
CONCLUSIONS, EVALUATIONS AND RECOMMENDATIONS

6.1. Introduction

This chapter contains a summary of the research results, including the conclusions of the study, the clinical implications, evaluation of the study and recommendations for further research.

6.2. Conclusions

The current study was one of several of studies done over the last decade relating to graphic symbols and their use in the South African context (Alant, Life, & Harty, 2005; Basson & Alant, 2005; Bornman, et al., 2009; Haupt & Alant, 2002; Visser, et al, 2008). Studies by Basson and Alant (2005) and Haupt and Alant (2002) could not be compared, because too many variables in these studies differed. Descriptive comparisons of these studies revealed that the differences between the two cultures could be ascribed to the different cultural experiences of the two groups. Current results indicate a significant difference at the 1% level between the Afrikaans and Sepedi speaking participants in the choice of expected symbols to represent *happy*, *angry*, *afraid* and *sad*.

No significant differences in the symbols chosen by the two genders were observed. This is in accordance with some literature which found no gender differences with regard to the development of emotions (Bennett, et al., 2005; MacDonald, & Kirkpatrick, 1996). Results in the current study were inconclusive on the influence of intensity ratings on the participants' choice of symbols.

Results indicated a difference in the symbols the two language groups preferred to represent the four emotions. After an analysis of the symbols with regard to their features it was observed that all of the symbols chosen most as preferred symbols had extra features, questioning the use of only facial expressions when representing emotions. Reliability of the data was ensured by the implementation of different steps during the development of the material, the choice and training of a research assistant, the data collecting process and the recording of data.

6.3. Clinical implications

This study has several clinical implications. Firstly when working in a country like South Africa with a heterogeneous population it is important to remember that different individuals' cultural backgrounds have an influence on the way they perceive and interact with different graphic symbols.

Secondly when working with children it is imperative not to assume that they interpret graphic symbols the same way therapists, teachers or the developers of graphic symbols do. This does not mean that graphic symbols cannot be used when working with these populations; it rather means that the individuals might need more instruction or explanation on the graphic symbols than merely the labelling of the graphic symbols.

Practitioners who wish to introduce AAC into schools need to make sure that the teachers or therapists they train to implement and use AAC in the schools understand the above point and that they will not assume that the children they work with will perceive the graphic symbols they same as they do.

As both South African language groups were more accurate with the selection of *angry* and *afraid* than with *sad*, care should be taken on making assumptions on developmental models developed in other countries, according to which *sad* develops almost simultaneously (months before or months after) to *angry* and before *afraid* (Denham, 1989; Camras & Allison, 1985; Wang, 2003; Widen & Russell, 2003; 2008a).

In the development of graphic symbols representing different emotions it might be necessary to use research like Ekman and Friessen (1975); Kohler, et al. (2004) and MacDonald and Kirkpatrick (1997) as the foundation for further developing graphic symbols.

6.4. Evaluation of the study

The following are considered strengths of the study:

- All participants understood the four emotions used in the study (this was established by implementing a pre-assessment task that all participants had to pass before taking part in the study).

- The use of a combination of back translation, the committee approach and pre-test procedures (Brislin, 1980; Haupt, 2001; Retief, 1988) in the translation of the material from Afrikaans to Sepedi, ensuring that the differences observed between the two language groups cannot be attributed to possible differences in the material.

- The procedural integrity of the presentation of the protocol to the participants by the researcher (to Afrikaans speaking participants) and of the research assistant (to Sepedi speaking participants) was established. The procedural integrity score for both the Afrikaans and Sepedi speaking participants were 99%.

- The symbols presented on the overlays were randomized for each overlay. This forced the participants to scan all the symbols each time they were presented with an overlay.

The limitations of the study:

- Although the researcher in the current study additionally wanted to investigate a possible link between the intensities of emotions elicited by the vignettes and the choice of symbols to represent the emotions; no such link was observed. The vignettes might not have been sensitive enough to pick up possible differences in intensity. It is also possible that the children were too young to differentiate grading of emotions.

- As the sample size was relatively small (n=90), care must be taken when interpreting results. It might not be possible to generalize results to the larger population.

6.5. Recommendations for future research

- A similar study exploring the influence of age on the symbols chosen to determine whether the recognition of the graphic symbols representing emotions increases with age.

- Studies to investigate the grading (from experiencing for example 'a little angry' through to 'very, very, angry') of emotions to establish at what age South African children are able to successfully grade the emotions they are experiencing.

- Further research to establish a possible link between the intensity of the emotion in a vignette and the choice of vignettes. In such a study great care must be taken to ensure that vignettes are sensitive to changes in intensity. Another possibility would be merely asking participants to indicate, on an overlay with graphic symbols depicting emotions, which symbols shows 'little angry', 'angry' or 'very angry'.

- Research to compare visual perception of facial expression and different graphic symbols to investigate how participants perceive graphic symbols from other sets and systems representing emotions, i.e. to see if these findings are related to specific graphic symbols, or if there would be a pattern emerging in comparing different graphic symbol sets e.g. Bliss, etc.

- The study was the first study where results from two different language groups in South Africa were statistically compared. The study can be seen as a preliminary study. As this study showed significant statistical differences between the two language groups, more comparative studies between different language groups are warranted to more clearly understand the nature of the differences that can emerge in different cultural contexts.

6.6. Summary

This chapter presented a summary of the main findings in describing South African grade R children's choice of graphic symbols when depicting *happy*; *sad*; *afraid* and *angry*. Clinical implications, the strengths and weaknesses of the study as well as recommendations for further research were presented.

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APPENDIX A

COPY OF THE ETHICAL CLEARANCE DOCUMENT RECEIVED FROM THE HUMANITIES ETHICS COMMITTEE

APPENDIX B

COPY OF THE LETTER TO THE RELEVANT AUTHORITIES REQUESTING PERMISSION TO CONDUCT THE STUDY IN THE WATERBERG DISTRICT OF THE LIMPOPO PROVINCE.

PO Box 127
Mokopane
0600

27 June 2008

Dear Ms Malumane,

Research into the iconicity of symbols

I am a speech therapist and audiologist working for the Limpopo Department of Health and Social Development at Voortrekker District Hospital in Mokopane. As telephonically discussed I am busy with my PhD degree in the field of Alternative and Augmentative Communication at the University of Pretoria. I have submitted my proposal to the Research Ethics Committee (Resethics) of the Faculty of Humanities. Permission to conduct the study was conditionally granted pending the permission from your office (please see a copy of this letter attached).

Alternative and Augmentative Communication strategies refer to intervention for people who are unable to learn to speak, take long to learn to speak or lose the ability to speak to assist them in finding different ways of expressing themselves. One such strategy would be to make a communication board containing picture-like symbols to represent objects, ideas or feelings. The individual using the communication board, points to these pictures to indicate what he/she wants to communicate.

The degree to which a symbol is visually representative of its referent is called iconicity. Research has shown that it is easy for individuals to learn to use highly iconic symbols. Most of the symbol sets currently in use in South Africa were developed in the United States of America. Further research has found that iconicity is culture bound. This would imply that people from different cultures (and countries) would view the same symbol differently. In South Africa we therefore cannot simply use American symbols without taking into the account our various different cultures.

In 2001 Lize Haupt investigated the iconicity of a certain set of symbols, the Picture Communication Symbols (PCS), for Zulu speaking children aged ten. For my masters degree (2003-2004) I partly repeated Haupt's study with another population, i.e. Afrikaans speaking 6 year olds. I further investigated the learnability of this symbol set. For my PhD I am interested in investigating the iconicity of certain PCS symbols depicting emotions. The targeted population is 5:00 to 5:11 year old Sepedi and

Afrikaans speaking children. Attached please find a copy of the proposal, which describes the study in more detail, including the material to be used.

I hereby ask permission to conduct research in certain preprimary schools and crèches in the Waterberg district in Limpopo Province. All information gathered in the process will be regarded as confidential, and the results of the study will be made available to you if you so wish. No contact with the learners will be made before receiving final permission from the Department of Health and Social Development or the Research Ethics Committee (Resethics) of the Faculty of Humanities, University of Pretoria. As we have a deadline to meet a reply as sson as possible would be appreciated.

Thank you for your time.

Regards,

H.M. Basson
Chief Speech Therapist and Audiologist
Voortrekker District Hospital
082 925 4198
015 409 1706
magdelphd@webmail.co.za

APPENDIX C

COPY OF THE DOCUMENT RECEIVED FROM THE DEPARTMENT OF HEALTH AND SOCIAL DEVELOPMENT GRANTING PERMISSION TO CONDUCT STUDY IN THE WATERBERG DISTRICT OF THE LIMPOPO PROVINCE

APPENDIX D

LETTER TO SCHOOLS TO INTRODUCE STUDY AND OBTAIN PERMISSION TO CONDUCT STUDY IN SCHOOLS

Date

Dear sir/madam,

I am the Chief Speech, Language Therapist and Audiologist at Voortrekker District Hospital and am currently busy with my PhD in Augmentative and Alternative Communication (AAC) at the University of Pretoria. My study leader is Prof E. Alant at the Centre for Augmentative and Alternative Communication (CAAC) at the University. The Limpopo Department of Health and Social Development has granted me permission to undertake my study in certain preschools and crèches in the Waterberg District of the province (find a copy of the official letter attached). You are however under no obligation to take part in the study and it is your choice whether or not learners from your school participate. With this letter I ask permission for learners to take part in my study. These children should be between the ages of **5 years and 5 years 11 months** and speak **Sepedi** at home.

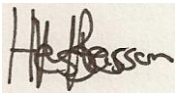
Not all children are able to communicate verbally, and will thus need an alternative way of expressing their needs and feelings. Augmentative and Alternative Communication (AAC) is a branch of Speech Therapy that focuses on giving these children an alternative means of communication. Some of the strategies are using sign language, computers and communication boards.

Communication boards are relatively cheap and use pictures (symbols) placed on a board. The user will point to a certain symbol to indicate to his/her communication partner what he/she wants to communicate. There are a number of symbol systems and it is important to get information about how children perceive and understand the symbols used. In South Africa very little research is available with regard to this issue. The aim of this study is to see which intensity **5 to 6 year old Sepedi and Afrikaans children** perceive an emotion story to have and which symbols they choose to indicate this intensity.

The study requires the learners who adhere to the selection criteria to go with the Researcher and a Research assistant to a separate room. The children will be seen individually and the session will be tape recorded. The Researcher will need a separate room with child friendly table and chairs. I would further appreciate a class list with learners' birth dates. All information will be kept **anonymous** and treated as **highly confidential**.

If you decided to take part in the study, I will bring consent forms for the parents of possible participants as it is their right to choose whether or not their child take part in the study. **Please feel free to contact me at 082 925 4198 should you have any questions.**

Thank you



Ms. H.M. Basson
PhD student
Chief Speech, Language Therapist and Audiologist
Voortrekker District Hospital

Prof Erna Alant
Study leader
Director: Centre for AAC
University of Pretoria

- -

With this I, the head teacher/principal/owner of _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ give permission to Ms. H.M. Basson to conduct her study in my school/crèche.

- - - - - - - - - - - - - - - - - - -

The head teacher/principal/owner

APPENDIX E
ENGLISH, AFRIKAANS AND SEPEDI VERSION OF THE LETTER AND QUESTIONNAIRE SENT TO PARENTS

APPENDIX E1
ENGLISH VERSION

Dear parent/guardian

Thank you for taking the time to read the folowig information. I am employed as chief speech therapist and audiologist at Voortrekker Hospital and am currently busy with my PhD degree in Augmentative and Alternative Communication at the University of Pretoria. I hereby reques permission for your child's participation in this research study.

Not all children are able to communicate verbally, and will therefore need an alternative way of expressing their needs and feelings. Augmentative and Alternative Communication (AAC) is a branch of Speech-Language Therapy that focuses on providing these children with an alternative means of communication. Some of the strategies for accomplishing this include using sign language, computers and communication boards.

Communication boards are relatively cheap and use pictures (symbols) placed on a board. The user will point to a certain symbol to indicate to his/her communication partner what he/she wants to communicate. There are a number of symbol systems and it is important to get information about how children perceive and understand the symbols used. In South Africa very little research is available with regard to this issue. The aim of this study is to find which intensity **5 to 6 year old children** perceive an emotion story to have and which symbols they choose to indicate this intensity.

The session with your child will be tape recorded and these records will be retained for academic writing purposes for three years. As part of the process each participant's hearing will be screened. All information will be kept **anonymous** and treated as **highly confidential**. Should you decide to grant permission for your child to take part in this

study, please complete the attached return slip and questionnaire and send it back to your child's school by **_____ 2008.**

If I do not receive the return slip and questionnaire I will assume that you grant permission that your child may take part in the study. **Please feel free to contact me at 082 925 4198 should you have any questions.**

Thank You

Ms. H.M. Basson
PhD student
Chief Speech, Language Therapist and Audiologist
Voortrekker District Hospital

Prof Erna Alant
Study leader
Director: Centre for AAC
University of Pretoria

With this I _____ **grant permission** that my child _____ may take part in this pilot study.
With this I _____ **DO NOT grant permission** that my child _____ take part in the research study.

_____
Signature parent/guardian
If your child is allowed to take part in the study, PLEASE answer the following questions.

1. Child's birth date.	1.		
2. Child's gender (indicate the appropriate)	2.	male	
		female	
3.1. Does your child have any problems with hearing? (indicate the appropriate)	3.1.	YES	
		NO	
If you answered 'YES' to 3.1. please answer question 3.2.			
3.2. Was anything done with regard to this problem? (indicate the appropriate)	3.2.	YES	
		NO	
If you answered 'YES' to 3.2. please answer question 3.3.			
3.3. What was done with regard to this problem? (indicate the appropriate)	3.3.	Hearing aid	
		Cochlear implant	
		Operation	
		Nothing	
		Something else	
If something else was doen, please describe:			
4.1. Does your child have any problems with vision? (indicate the appropriate)	4.1.	YES	
		NO	
If you answered 'YES' to 4.1. please answer question 4.2.			
4.2. Was anything done with regard to this problem? (indicate the appropriate)	4.2.	YES	
		NO	
If you answered 'YES' to 4.2. please answer question 4.3.			
4.3. What was done with regard to this problem? (indicate the appropriate)	4.3.	Spectacles/glasses	
		Contact lenses	
		Operation	
		Nothing	
		Something else	

If something else was done, please describe:			
5.1. Which lamguage do you speak at home? (if you speak more than one language, please indicate the main language)	5.1.		
5.2. Which other languages are spoken?	5.2.		
5.3. What is the father's mother tongue?	5.3.		
5.4. What is the mother's mother tongue?	5.4.		
6.1. Is your child receiving any kind of therapy? (indicate the appropriate)	6.1.	YES	
		NO	
6.2. Have your child previously received any kind of therapy? (indicate the appropriate)	6.2.	YES	
		NO	
If you answered yes at 6.1.or 6.2. please answer question 6.3.			
6.3. Which type of therapy did your child receive? (indicate the appropriate)	6.3.	Occupational therapy	
		Physiotherapy	
		Speech Therapy	
		Langauge Therapy	
		Auditory Perception Therapy	
If something else was doen, please describe:			
7.1. Did the father complete primary education (grade 1 to grade 7)? (indicate the appropriate)	7.1.	YES	
		NO	

7.2. Did the father complete secondary education (grade 8 to grade 12)? (indicate the appropriate)	7.2.	YES	
		NO	
7.3. Did the father complete secondary education (diploma or degree)? (indicate the appropriate)	7.3.	YES	
		NO	
7.4. Did the mother complete primary education (grade 1 tot grade 7)? (indicate the appropriate)	7.4.	YES	
		NO	
7.5. Did the mother complete secondary education (grade 8 to grade 12)? (indicate the appropriate)	7.5.	YES	
		NO	
7.6. Did the mother complete secondary education (diploma or degree)? (indicate the appropriate)	7.7.	YES	
		NO	
8.1. What is the father's ocupation?	8.1.		
8.2. What is the mother's ocupation?	8.2.		

APPENDIX E2
AFRIKAANS VERSION

Geagte ouer/voog,

Dankie dat u die tyd neem om die onderstaande inligting deur te lees. Ek werk as hoof spraak-taalterapeut en oudioloog by Voortrekker Hospitaal en is tans besig met my PhD graad in Aanvullende en Alternatiewe Kommunikasie aan die Universiteit van Pretoria onder leiding van Prof. E. Alant. Met hierdie skrywe versoek u u toestemming vir u kind se deelname aan my navorsingstudie.

Nie alle kinders is in staat om deur middel van spraak te kommunikeer nie. Hierdie kinders moet van alternatiewe maniere gebruik maak om hul behoeftes en gevoelens bekend te maak. Aanvullende en Alternatiewe Kommunikasie (AAK) is ‘n afdeling van Spraak-Taalterapie wat daarop toegespits is om aan hierdie kinders ander maniere van kommunikasie te bied. Van die metodes wat gebruik word is o.a. die aanleer van gebaretaal, die gebruik van rekenaars en die gebruik van kommunikasieborde.

Kommunikasieborde is relatief goedkoop en behels dat prente (simbole) op ‘n bord geplaas word en die gebruiker na spesefieke simbole wys om so die kommunikasievenoot te laat weet wat hy/sy wil hê. Daar is verskeie simboolstelsels en dit is belangrik dat ons inligting insamel oor onder andere die akkuraatheid waarmee kinders die betekenis van die simbole wat ons gebruik kan raai. Daar bestaan min navorsing hieroor in Suid-Afrika. Hierdie studie se doel is om uit te vind hoe intens **5 tot 6 jarige** kinders emosies in stories ervaar en watter simbole hulle sal kies om hierdie intensitieit aan te dui.

Die sessie sal opgeneem word en hierdie opnames sal vir drie jaar vir akademiese skryfdoeleindes geberg word. As deel van die studie sal elke deelnemer gehoorsifting ondergaan. Die inligting wat verkry word uit ‘n kind se deelname aan die studie is **anoniem** en sal as **streng vertroulik** hanteer word. As u toestemming verleen dat u kind aan die studie mag deelneem, voltooi asseblief die aangehegte strokie en vraelys en besorg dit so gou moontlik aan die kind se onderwyseres terug. Indien ek nie die

afskeurstrokie terug ontvang nie, sal ek aanvaar dat u toestemming verleen dat u kind aan die studie mag deelneeem. **Indien u enige vrae het, is u welkom om my te kontak by 082 925 4198.**

Baie dankie

Me H.M. Basson
PhD student
Hoof Spraak, Taal Terapeut en Oudioloog
Voortrekker Distriks Hospitaal

Prof Erna Alant
Studie leier
Direkteur: Sentrum vir AAK
Universiteit of Pretoria

Hiermee gee ek _____ ouer van _____
toestemming dat my kind aan die studie mag deelneem.
Hiermee gee ek _____ ouer van _____ **NIE**
toestemming dat my kind aan die studie mag deelneem **NIE**.

_____
Handtekening ouer/voog
Beantwoord die volgende vrae slegs indien u kind aan die studie mag deelneem..

1. Kind se geboortedatum	1.		
2. Kind se geslag (dui toepaslike antwoord aan)	2.	Manlik	
		Vroulik	
3.1. Het u kind enige gehoorprobleme waarvan u bewus is? (dui toepaslike antwoord aan)	3.1.	JA	
		NEE	
Indien u 'JA' geantwoord het op 2.1. beantwoord asseblief vraag 3.2.			
3.2. Is daar enige iets aan die probleem gedoen?	3.2.	JA	
		NEE	
Indien u 'JA' geantwoord het op 2.2. beantwoord asseblief vraag 3.3.			
3.3. Wat is gedoen? (dui toepaslike antwoord aan)	3.3.	Gehoorapparaat	
		Kogleêre implanting	
		Operasie	
		Niks	
		Iets anders	
Indien iets anders gedoen is, beskryf kortliks wat:			
4.1. Het u kind enige probleme met visie waarvan u bewus is? (dui toepaslike antwoord aan)	4.1.	JA	
		NEE	
Indien u 'JA' geantwoord het op 4.1. beantwoord asseblief vraag 4.2.			
4.2. Is daar enige iets aan die probleem gedoen?	4.2.	JA	
		NEE	
Indien u 'JA' geantwoord het op 3.2. beantwoord asseblief vraag 4.3.			
4.3. Wat is gedoen? (dui toepaslike antwoord aan)	4.3.	Bril	
		Kontaklense	
		Operasie	
		Niks	
		Iets anders	
Indien iets anders gedoen is, beskryf kortliks wat:			

5.1. Watter taal praat u tuis? (Indien u meer as een taal tuis praat dui asseblief aan watter taal u hooftaal is)	5.1.		
5.2. Watter ander tale word tuis gepraat?	5.2.		
5.3. Wat is die vader se moedertaal?	5.3.		
5.4. Wat is die moeder se moedertaal?	5.4.		
6.1. Ontvang u kind tans enige terapie? (dui toepaslike antwoord aan)	5.1.	JA	
		NEE	
6.2. Het u kind van te vore enige terapie ontvang? (dui toepaslike antwoord aan)	5.2.	JA	
		NEE	
Indien u 'JA' geantwoord het op 6.1. of 6.2. beantwoord asseblief vraag 6.3.			
6.3. Watter terapie ontvang u kind / het u kind ontvang?	5.3.	Arbeidsterapie	
		Fisioterapie	
		Spraakterapie	
		Taalterapie	
		Ouditiewe perseptuele terapie	
Indien iets anders gedoen is, beskryf kortliks wat:			

7.1. Het die vader primêre opleiding (graad 1 tot graad 7)? (dui toepaslike antwoord aan)	7.1.	JA	
		NEE	
7.2. Het die vader sekondêre opleiding (graad 8 tot graad 12)? (dui toepaslike antwoord aan)	7.2.	JA	
		NEE	
7.3. Het die vader tersiêre opleiding (diploma of graad)? (dui toepaslike antwoord aan)	7.3.	JA	
		NEE	
7.4. Het die moeder primêre opleiding (graad 1 tot graad 7)? (dui toepaslike antwoord aan)	7.4.	JA	
		NEE	
7.5. Het die moeder sekondêre opleiding (graad 8 tot graad 12)? (dui toepaslike antwoord aan)	7.5.	JA	
		NEE	
7.7. Het die moeder tersiêre opleiding (diploma of graad)? (dui toepaslike antwoord aan)	7.7.	JA	
		NEE	
8.1. Wat is die vader se beroep?	8.1.		
8.2. Wat is die moeder se beroep?	8.2.		

APPENDIX E3

SEPEDI VERSION

Motswadi yo a hlomphegago.

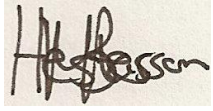
Re rata go go leboga ge o iphile nako ya go bala tshedimošo ye e latelago. Nna ke šoma bjale ka Speech, language Therapist and Audiologist kua bookelong bja Voortrekker. Ke tšwetša dithuto tša-ka pele tša grada ya PhD le Unibesithi ya Pitoria ka fase ga hlahlo yo Prof E. Alant. Mo letlakaleng le, ke rata go hwetša tumello gore ngwana wagago a tšee karolo.

Ga se bana ka moka bao ba kgonago go boledišana le ba bangwe. AAK ke lesolo leo le ikemišeditšego go thuša bana ka mekgwa e mengweya poledišano ka ntle le go bolela. Go na le mekgwa ye mentšhi ya go ithuta go ka lekanetša polelo bjalo ka go šomiša dikhomphuta le go šomiša poledišano ka matsogo.

Maikemišetšo a thubo ye, ke go nyakišiša gore naa bana ba mengwaga ya gare ga 5 le ba tswalangantšha bjang maikutlo le diswantšo. Tshedimošo yeo e humanwago mo ngwaneng ge a tšea karolo ga e tsebjwe gape e tla ba sephiri. Ge o fa ngwana wagago tumelelo ya gore a tšee karola, tlatša foromo yeo e lego ka fase gomme o e buše pele ga __/__/2009 gomme o efe teacher.

Ge re sa hwetše feromo ye, re tla tšea gore gao dumelele ngwana wag ago go tšsea karolo. Ge o na le dipotšiso 082 925 4198.

Re a leboga



Ms. H.M. Basson
PhD student
Chief Speech, Language Therapist and Audiologist
Voortrekker District Hospital

Prof Erna Alant
Study leader
Director: Centre for AAC
University of Pretoria

- - - -

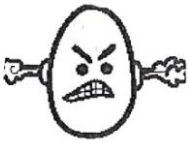
1. Matswalo a ngwana.	1.		
2.	2.	mosemane	
		ngwana	
3.1. Naa ngwana wa gago o na le bothata bja go kwa?	3.1.	EE	
		AOWA	
Ge o arabile 3.1 ka eng, go-na araba 3.2.			
3.2. Go na le seo se dirilwego mabapi le bothata bjoo.	3.2.	EE	
		AOWA	
Ge o arabile 3.2 ka eng, go-na araba 3.3.			
3.3. Wat is gedoen? (dui toepaslike antwoord aan)	3.3.		
		Hearing aid	
		Operation	
Ge ele gore go dirilwe se sengwe kantle le hearing aid le operation hlaloša gore go dirilwe eng.			
4.1. Naa ngwana wa gago o na le bothata bja go bona?	4.1.	EE	
		AOWA	
Ge o arabile 4.1 ka eng, go-na araba 4.2.			
4.2. Go na le seo se dirilwego mabapi le bothata bjoo.	4.2.	EE	
		AOWA	
Ge o arabile 4.2 ka eng, go-na araba 4.3.			
4.3. Go dirilwe eng? (Hlaloša)	4.3.	Glases	
		Contact lenses	
		Operation	
Ge ele gore go dirilwe se sengwe kantle le glasses le operation hlaloša gore go dirilwe eng.			

5.1. Le bolela leleme le fe ka gae? Ge le bolela maleme a go fapana, leleme la tswalo ke le fe.	5.1.		
5.2. Maleme la tswalo ke fe.	5.2.		
5.3. Tatago o bolela leleme lefe.	5.3.		
5.4. Mmago o bolela leleme lefe.	5.4.		
6.1. Naa ngwana wa gago o na le terapi (therapy) yeo a e hwetšago?	5.1.	EE	
		AOWA	
6.2. Naa ngwana wa gago o ile terapi pele?	5.2.	EE	
		AOWA	
Ge o araba “ee” gona araba 6.3.			
6.3. Watter terapie ontvang u kind / het u kind ontvang?	5.3.		
		Occupational therapy	
		Physiotherapy	
		Terapi ya leleme	
		Terapi ya polelo	
Ge ele gore go dirilwe se sengwe kantle hlaloša gore go dirilwe eng.			

7.1. Tatago o tsene sekolo (mphato wa 1 go fihla mphato 7).	7.1.	EE	
		AOWA	
7.2. Tatago o tsene sekolo (mphato wa 8 go fihla mphato 12).	7.2.	EE	
		AOWA	
7.3. Tatago o tšweditše dithuto tša gagwe pele maroga mphato wa 12 (o na le tiploma goba tikrii)	7.3.	EE	
		AOWA	
7.4. Mmago o tsene sekolo (mphato wa 1 go fihla mphato 7).	7.4.	EE	
		AOWA	
7.5. Mmago o tsene sekolo (mphato wa 8 go fihla mphato 12).	7.5.	EE	
		AOWA	
7.7. Mmago o tšweditše dithuto tša gagwe pele maroga mphato wa 12 (o na le tiploma goba tikrii)	7.7.	EE	
		AOWA	
8.1. Tatago o šoma go dira eng?	8.1.		
8.2. Mmago o šoma go dira eng?	8.2.		

APPENDIX F

SYMBOLS USED IN VISSER (2006)

Happy	Sad	Afraid	Angry
Face 1 (PCS)	Face 5 (PCS)	Face 9 (PCS)	Face 13 (PICSYMS)
Face 2 (PCS)	Face 6 (PCS)	Face 10 (PCS)	Face 14 (Makaton)
Face 3 (PCS)	Face 7 (PCS)	Face 11 (PCS)	Face 15 (PCS)
			
Face 4 (PCS)	Face 8 (PCS)	Face 12 (PCS)	Face 16 (PCS)

This table is a copy of Table 3 used by Visser (2006).

APPENDIX G:
SYNONYMS

HAPPY: (adj)

Happy	**3**
Pleased	0
Delighted	0
Glad	**1**
Joyous	0
Joyful	0
Overjoyed	0
Jubilant	0
Cheerful	0
Cheery	0
Blithe	0
Blithesome	0
Light-hearted	0
Contented	0
(Content 3)	
Exhilarated	0
Exultant	0
Cock-a-hoop	0
Elated	0
Exuberant	0
Thrilled	**1**
Gleeful	0
Euphoric	0
Ecstatic	0
Satisfied	**1**
Gratified	0

Boardmaker: symbols

Happy	**3**
Excited	**1**
Thrilled	**1**
Content	**3**
Okay	**2**
Good	**4**
Glad	**1**

SAD: (adj)

Sad	**5**
Unhappy	**4**
Melancholy	0
Downcast	0
Dejected	0
Depressed	**1**
Low	0
Sorrowful	0
Gloomy	0
Morose	0
Glum	0
Lugubrious	0
Mournful	0
Heartsick	0
Crestfallen	0
Chapfallen	0
Dishearted	0
Downhearted	0
Blue	0
Despondent	0
Broken-hearted	0
Heartbroken	0
Woebegone	0
Miserable	0

Boardmaker: symbols

Sad	**5**
Depressed	**1**
Unhappy	**4**
Disappointed	**1**
Upset	**7**
Hurt	**1**

ANGRY: (adj)

Angry	**3**
Enraged	0
Furious	**1**
Irate	0
Resentful	0
Ireful	0
Wrathful	0
Piqued	0
Incensed	0
Infuriated	0
Fuming	0

Irritated	0
Annoyed	0
Vexed	0
Irascible	0
Provoked	0
Indignant	0
Exasperated	0
Splenetic	0

Boardmaker: symbols	
Angry	**3**
Mad	**3**
Furious	**1**
Frustrated	**1**
Upset	**7**
Hard	**1**

AFRAID: (adj)

Afraid	**2**
Fearful	0
Frightened	**1**
Scared	**2**
Intimidated	0
Apprehensive	0
Lily-livered	0
White-livered	0
Terrified	**1**
Panic-striken	0
Faint-hearted	0
Weak-kneed	0

Boardmaker: symbols	
Afraid	**2**
Scared	**2**
Worried	**3**
Anxious	**3**
Surprised	**2**
Frightened	**1**

Urdang, L. (1991). *The Oxford Thesaurus.* Oxford University Press.

APPENDIX H

SYMBOLS WITH ALL POSSIBLE LABELS

Symbol	Terms assigned by Boardmaker Version 6 Demo (© 1981-2007 Mayer-Johnson)
1	Happy Thrilled Excited
2	Happy Content Okay Good
3	Happy Glad Good
4	Content Satisfied Okay
5	Content
6	Good

Symbol	Terms given by Boardmaker version 6 demo (© 1981-2007 Mayer-Johnson)
7	Good
8	Sad Unhappy Depressed
9	Sad Unhappy Disappointed Upset
10	Sad Hurt Upset
11	Sad Unhappy Upset
12	Sad Unhappy Upset
13	Upset Angry Mad Hard

Symbol	Terms given by Boardmaker version 6 demo (© 1981-2007 Mayer-Johnson)
14	Upset Angry Mad
15	Upset Worried
16	Angry Mad Furious
17	Afraid Scared Worried Anxious
18	Afraid Frightened Scared Surprised
19	Terrified
20	Worried

Symbol	Terms given by Boardmaker version 6 demo (© 1981-2007 Mayer-Johnson)
21	Surprised

APPENDIX I

POSSIBLE SYMBOLS FOR HAPPY

Symbol	1	2	3	4	5	6	7
Happy Thesaurus							
Glad Thesaurus							
Content Thesaurus							
Thrilled Thesaurus							
Satisfied Thesaurus							
Excited Boardmaker							
Okay Boardmaker							
Good Boardmaker							

APPENDIX J

POSSIBLE SYMBOLS FOR NEGATIVE EMOTIONS

SAD														
Symbol	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Sad Thesaurus														
Unhappy Thesaurus														
Depressed Thesaurus														
Disappointed Boardmaker														
Hurt Boardmaker														
Upset Boardmaker														

ANGRY

Symbol	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Angry Thesaurus														
Furious Thesaurus														
Mad Boardmaker														
Frustrated Boardmaker														
Upset Boardmaker														
Hard Boardmaker														

AFRAID

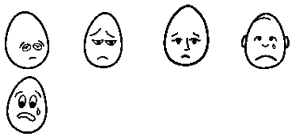
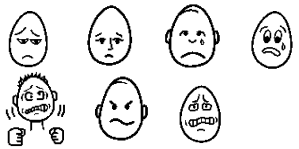
Symbol	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Afraid Thesaurus														
Frightend Thesaurus														
Scared Thesaurus														
Terrified Thesaurus														
Worried Boardmaker														
Anxious Boardmaker														

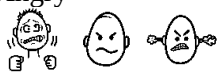
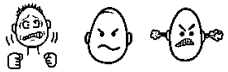
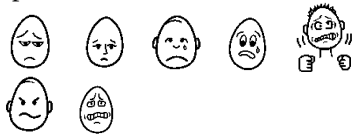
AFRAID														
Symbol	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Surprised Boardmaker														

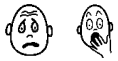
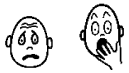
APPENDIX K

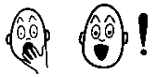
THE PROCESS OF SELECTING THE SIXTEEN SPECIFIC SYMBOLSTO REPRESENT EACH OF THE BASIC EMOTIONS

Basic emotion	Synonyms used and possible symbols identified	Possible Symbols	Symbols Selected
Happy	*Thesaurus synonyms:* Happy Glad Content Thrilled Satisfied *Boardmaker synonyms:* Excited Okay Good	• Three symbols representing the label happy (the formal label used in the study) were selected. These symbols were: [ ], [ ] and [ ]. • Looking at the symbols representing the Thesaurus synonyms, a fourth symbol was selected: [ ]. • To allow for possible comparison with the study by Visser, et al. (2008), a fifth symbol was identified using the Boardmaker synonyms: [ ]. According to Visser a panel of professionals working with young children indicated this symbol as appropriate. • A panel of eight teachers (4 Afrikaans- and 4 Sepedi-speaking teachers) working with grade R and assisting in the current study to validate the material agreed that symbols [ ], [ ], [ ] and [ ] represented happy and symbol [ ] did not represent happy.	

Basic emotion	*Synonyms used and possible symbols identified*	Possible Symbols	Symbols Selected
Sad	*Thesaurus synonyms:* Sad  Unhappy Depressed *Boardmaker synonyms:* Disappointed Hurt Upset 	• Five symbols representing the label sad (the formal label used in the study) were selected. These symbols were: [ ], [ ], [ ], [ ] and [ ]. • Four of the five symbols also represented the Thesaurus synonym unhappy: [ ], [ ], [ ] and [ ]. • These four symbols were taken to the panel of teachers. • The panel agreed that symbols [ ], [ ], [ ] and [ ] represented sad.	

Basic emotion	*Synonyms used and possible symbols identified*	Possible Symbols	Symbols Selected
Angry	*Thesaurus synonyms:* Angry  Furious *Boardmaker synonyms:* Mad  Frustrated Upset  Hard	• Three symbols representing the label angry (the formal label used in the study) were selected. These symbols were: [ ], [ ] and [ ]. • Symbols [ ] and [ ] have extra features. Since the current study is investigating the representation of emotion by graphic symbols and not exclusively by graphic symbols of faces, these symbols were deemed appropriate, even though they also contain other body parts (neck and hands) and elements that are not part of the human body (‘anger clouds’). • No extra symbols were identified when using the Thesaurus synonym furious. • No extra symbols were identified when using the Boardmaker synonyms mad, frustrated and hard. • When using the Boardmaker synonym upset, six extra symbols were identified: [ ], [ ], [ ], [ ], and [ ]. • Symbols [ ],[ ] and [ ] were previously identified as symbols representing sad and was eliminated as possible symbols for representing angry. • Symbols [ ] and [ ] were analysed according to the three facial components playing a role in the recognition of emotion in faces (Ekman and Friesen, 1975; Kohler; et. al., 2004; Sullivan and Kirkpatrick, 1996).	

Basic emotion	*Synonyms used and possible symbols identified*	Possible Symbols	Symbols Selected
Angry		• According to the three facial components symbol [ ] can be used to represent sad. • When used as a Boardmaker synonym symbol [ ] can represent either angry or afraid. appeared • According to the identified characteristics of the three facial features, symbol [ ] can be used to represent either angry or afraid. • The panel of teachers agreed that symbol [ ] represented angry.	
Afraid	*Thesaurus synonyms:* Afraid  Frightened Scared  Terrified	• Two symbols representing the label afraid (the formal label used in the study) were selected. These symbols were: [ ] and [ ]. • No extra symbols were identified when using the Thesaurus synonym s frightened and scared. • No extra symbols were identified when using the Thesaurus synonym furious. • When looking at the Thesaurus synonym, terrified, a third symbol was selected: [ ]. • When using the Boardmaker synonyms upset, two	

Basic emotion	*Synonyms used and possible symbols identified*	Possible Symbols	Symbols Selected
Afraid	*Boardmaker synonyms:* Worried Anxious Surprised 	extra symbols were identified: [ ] and [ ]. • Symbol [ ] has already been used for representing anger. • Symbol [ ] was chosen as the fourth symbol to represent afraid. • The panel of teachers agreed that symbols [ ] , [ ], [ ] and [ ] represented angry.	

APPENDIX L

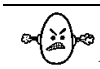
QUESTIONNAIRE TO TEACHERS TO RATE VIGNETTES FROM MOST TO LEAST FAMILIAR SITUATIONS

Thank you for your assistance. Please have a look at the following 16 pictures. Do you agree that the pictures can represent the emotion next to it. Please indicate whether you agree or not. If you don't agree please give a reason. While looking at these pictures please bear in mind that the children these pictures are intended for are Afrikaans-/Sepedi-speaking 5 to 6 year olds.

	Picture	Agree	Don't agree	Why don't you agree
HAPPY	1			
	2			
	4			
	5			
SAD	8			
	9			
	11			
	12			
AFRAID	17			
	18			
	19			
	20			
ANGRY	14			
	16			
	13			
	15			

APPENDIX M

TEACHERS' AGREEMENT ON SYMBOLS

		Sepedi speaking teachers				Afrikaans speaking teachers			
	Symbol nr. as in Appendix F.	S1	S2	S3	S4	A1	A2	A3	A4
HAPPY	1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	2	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	4	Yes	Yes	**NO** smiling not clear	Yes	Yes	Yes	Yes	Yes
	5	**NO** not happy	**NO** not happy	**NO** Shape of eyes	**NO** Smile & eyes	Yes	Yes	**NO** more sad	Yes
SAD	8	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	9	Yes	Yes	Yes	Yes	Yes	Yes	**NO** angry	Yes
	11	Yes	Yes	Yes	Yes	Yes	Yes	yes	Yes
	12	Yes	Yes	Yes	Yes	Yes	Yes	**NO** surprised	Yes
AFRAID	17	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	18	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	19	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	20	Yes	Yes	**NO** unclear	**NO** unclear	Yes	Yes	Yes	Yes
ANGRY	14	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	 16	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	13	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	15	Yes	Yes	**NO** unclear	**NO** unclear	Yes	Yes	**NO** Scared / afraid	Yes

Boyatzis, Chazen & Ting (1993)	McDonald & Kirkpatrick (1996)	Visser (2006)	Wang (2003)	Widen & Russell (2004)
		Happy		
Tommy just got an ice-cream cone. Tommy is happy. Today is Tommy's birthday, and he will get lots of presents. Tommy is happy.	Johnny (Suzy) wanted his [her] friends to come over to play. So he [she] asked them and they came to play with him [her] at his [her] house, and he [she] was happy. At Christmas Johnny got a new toy house that he wanted, and he was happy.	It is Peter's birthday. He got a big present. He is very happy. Show me where the **happy** face is. Peter is playing with his new toy truck. He is happy about his toy truck. Show me where the **happy** face is. Peter is going to play at his friend's house. He is very happy. Show me where the **happy** face is.	***Birthday***. Today is Jake's birthday. He gets many gifts. He also eats birthday cake and eats his favourite chocolate ice cream. ***Winning a competition***. One day Jake is running in a race with other kids. He runs very hard and comes first. He gets a gold trophy. ***Adult award for a good deed***. One evening, mommy is cooking dinner. She is very busy. But the garbage-bag is full. So Jake helps mommy take out the garbage. Mommy says he is a good child. ***Playing with best friend***. Jake's favorite toy is a big truck. One afternoon, his back friend Tommy comes over. The two boys play with the truck together. ***Getting attention from others***. One day, Jake is wearing his new jacket. This jacket is so great that everyone likes it. They all comment that Jake looks very cute.	

Boyatzis, Chazen & Ting (1993)	McDonald & Kirkpatrick (1996)	Visser (2006)	Wang (2003)	Widen & Russell (2004)
		Sad		
Tommy lost his favorite teddy bear. Tommy is sad. Tommy's puppy ran away. Tommy is sad.	Johnny and his sister have a pet dog. The dog is sick and is going to die, and Johnny is sad. Johnny's friend, who he really liked to play with, moved away. Johnny couldn't play with his friend anymore, and he was sad.	Peter cannot find his mommy/daddy. He is very sad. Show me the **sad** face. Peter has lost his new ball. He is very sad. Show me the **sad** face. Peter cannot play with his new friend. He is very sad. S how me the **sad** face.	***Losing favorite toy***. Jake's parents bought him a Teddy bear. Jake likes the bear a lot. One day, Jake takes the bear out to play and looses it. ***Separation from a loved one***. Monday morning, Jake's Mommy is going to a city very far away on a business trip. Jake can't go there with Mommy. He has to stay at home. ***A loved one being sick***. Jake has a puppy whose name is Lu-Lu. Jake loves Lu-Lu a lot. One day Lu-Lu eats some bad things and gets very sick. ***Adult breaking promise***. Jake's Daddy has promised to take him to the amusement park this Saturday. But today, Daddy tells Jake that Daddy is going fishing this Saturday and can't take him to the amusement park. ***Social rejection***. At the playground, Jake sees his three friends building a big	… while D was in the living room, something happened that made him feel a certain way. D walked slowly over to a chair and sat down. Tears came to his eyes. He didn't want to talk to anyone.

Boyatzis, Chazen & Ting (1993)	McDonald & Kirkpatrick (1996)	Visser (2006)	Wang (2003)	Widen & Russell (2004)
		Sad		
			sandcastle together. He goes over and wants to join them. But his friends don't play with him. ***Being denied a desirable object***. One day, Jake goes to the market with Mommy. He sees a big cake on the counter and wants it really bad. But Mommy says the cake is too big and too expensive, and she won't buy it for him.	
		Afraid		
Tommy hears a mean dog barking behind the fence. Tommy is scared. Tommy sees a scary monster on TV. Tommy is scared.	Johnny was dreaming about a monster in his nightmare, and he was afraid. Johnny and his little brother were in their room at night. It was dark, and they saw a tree outside that looked like a person with a hand about to come in he window, and they were afraid.	Peter is alone in the house and it is dark around him. He is very scared/afraid. Show me **scared**. There is a thief in the house and Peter is scared/afraid. Show me **scared**. There is a spider on the wall and Peter is very scared/afraid. Show me **scared**	***Nightmare***. One night, Jake has a nightmare. He dreams of a big monster chasing him. The monster has a very big head, very long nose, and very sharp teeth. ***Getting a shot***. One day, Jake is sick. His Mommy takes him to see the doctor. The doctor says that he needs a shot in order to get well soon. ***Running into a stranger***. One day, Jake is playing alone in the yard. A	… while D was in the park, something happened to D that made him feel a certain way. It made D scream. He ran as fast as he could. D kept looking back to see if he was being followed. He just wanted to get home where he was safe.

Boyatzis, Chazen & Ting (1993)	McDonald & Kirkpatrick (1996)	Visser (2006)	Wang (2003)	Widen & Russell (2004)
		Afraid		
			strange adult comes over and says to him, "Hi, can I play with you?" ***Getting lost in a store***. Sunday afternoon, Jake goes to the market with Mommy. There are so many toys in the store! Jake can't keep his eyes off them. Then he gets lost and can't find Mommy. ***Potential adult punishment***. Jake gets a new ball. One morning he is throwing the ball in his room and breaks a big mirror. Daddy hears the crash and rushes to see what's wrong.	
		Angry		
Tommy saw someone taking I favorite toy. Tommy is mad. Tommy sees someone breaking his new crayons. Tommy is mad.	Johnny's little brother broke his favorite toy on purpose, and Johnny was angry. Johnny was trying to tell his mother something exciting, but his sister kept interrupting and Johnny was angry.	Peter's friend hit him on the shoulder. He is very angry/cross/mad at his friend. Show me **angry**. Peter was very naughty and his dad is angry/cross/mad. Show me **angry**.	***Being forced to do something***. Mommy bought Jake a new hat. Jake thinks the hat is really ugly. But Mommy insists that he wears it when he goes out. ***Being frustrated by an adult demand***. One day, Jake's friend Daniel comes	… while D was at school, something happened that made him feel a certain way. It made D yell and hit another kid. He clenched his fist and stomped his feet. He yelled really loud.

Boyatzis, Chazen & Ting (1993)	McDonald & Kirkpatrick (1996)	Visser (2006)	Wang (2003)	Widen & Russell (2004)
		Afraid		
		Another boy took Peter's toy car. He is very angry/cross/mad. Show me **angry**.	to ask him out to play. They are just about to leave when Jake's Mommy stops them. "Jake, clean up your room first before you go out. ***Adult false accusation***. There's a little kitten in Jake's house. One day, the kitten is jumping around and breaks a vase. Daddy comes home. He thinks Jake broke the vase. Then Jake gets grounded. ***Peer aggression***. One day, Jake is biking in the yard. The next-door neighbour, Max comes over and wants to ride his bike. Jake asks him to wait for a minute. But Max pushes Jake off the bike.	

APPENDIX O

QUESTIONNAIRES HANDED OUT DURING THE DEVELOPMENT OF VIGNETTES

APPENDIX O1

QUESTIONNAIRE HANDED OUT TO PROFESSIONALS WITH RESEARCH BACKGROUND

A. Please read the following short stories about an event in a child's live. For each story please indicate what emotion you think a child of 5 to 7 years will experience. Then indicate how intense the participants will experience the specific emotion (1 = a little; 2 = middle; 3 = very)

1. Lebo is alone in the house and it is dark around him. Lebo is_____.

1 2 3

2. Another boy took Lebo's food. Lebo is_____.

1 2 3

3. Lebo cannot play with his new friend. Lebo is_____..

1 2 3

4. Lebo cannot find his mommy/daddy. Lebo is_____.

1 2 3

5. There is a spider on the wall and Lebo is_____.

1 2 3

6. Lebo's cat had kittens. Lebo is_____..

1 2 3

7. A boy hit Lebo on the shoulder. Lebo is_____.

1 2 3

8. Some one broke Lebo's toy. Lebo is_____.

1 2 3

9. Lebo walked home after school. Suddenly he saw a big, angry dog. Lebo is_____.

1 2 3

10. Lebo is going to play at his friend's house. Lebo is_____.

1 2 3

11. There is a thief in the house and Lebo is_____.

1 2 3

12. Lebo is playing with his new toy. Lebo is_____.

1 2 3

13. Lebo has lost his new ball. Lebo is_____.

1 2 3

14. Lebo helped his grandmother. She thanks him with an apple. Lebo is_____.

1 2 3

15. Lebo had a bad dream. Lebo is_____.

1 2 3

16. Lebo sang a song at church. Every one clapped hands when he finished. Lebo is_____.

1 2 3

17. Lebo's grandmother died. Lebo is_____.

1 2 3

B. Are there any other scenarios/contexts/stories you can think of that would typically elicit happy/sad/afraid /angry? If so, please write it down:

Happy:

_____
_____
_____

Sad:

_____
_____
_____

Afraid:

_____
_____
_____

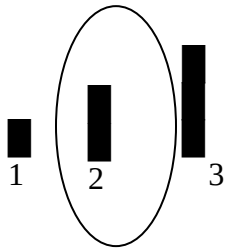
Angry:

_____
_____
_____

APPENDIX O2

QUESTIONNAIRE HANDED OUT TO SIX SPEECH AND LANGUAGE THERAPISTS

- Please read the following short stories about an event in a child's live.
- After each story the emotion the child is feeling is offered.
- Please indicate how intense **the child** (age 5 to 6 years old) will experience this specific emotion (1 = a little; 2 = middle; 3 = very).
- Indicate by circling the relevant graph.



1. Lebo's brother broke his bicycle. Lebo is feeling sad.

1.	

(for official use)

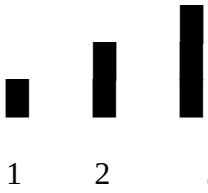
2. Lebo's mom took him to the park. Lebo is feeling happy.

2.	

3. Lebo is alone in the house and it is dark around him. Lebo is feeling afraid.

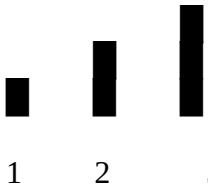
3.	

4. Another boy took Lebo's food. Lebo is feeling angry.



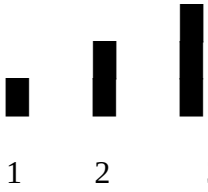
4.	

5. Lebo cannot play with his new friend. Lebo is feeling sad.



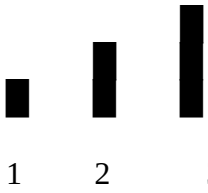
5.	

6. Lebo cannot find his mommy/daddy. Lebo is feeling afraid.



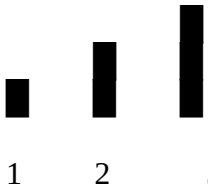
6.	

7. There is a spider on the wall and Lebo is feeling afraid.



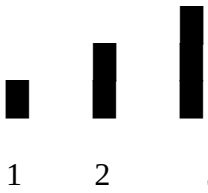
7.	

8. Lebo's cat had kittens. Lebo is feeling is happy.



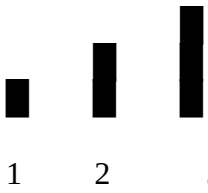
8.	

9. Lebo broke the neighbours' window. Lebo is feeling afraid.



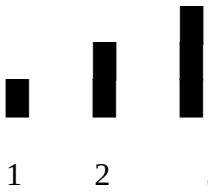
9.	

10. A boy hit Lebo on the shoulder. Lebo is feeling angry.



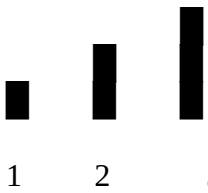
10.	

11. Some one broke Lebo's toy. Lebo is feeling angry.



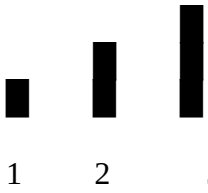
11.	

12. Lebo walked home after school. Suddenly he saw a big, angry dog. Lebo is feeling afraid.



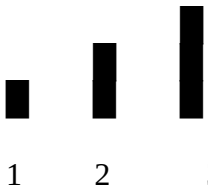
12.	

13. Lebo is going to play at his friend's house. Lebo is feeling happy.



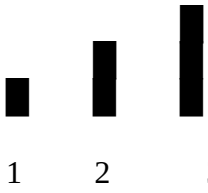
13.	

14. Lebo lost R5 down the drain. Lebo is feeling sad.



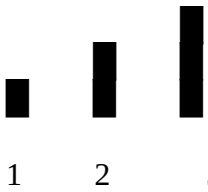
14.	

15. There is a thief in the house and Lebo is feeling scared



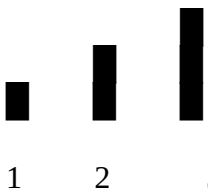
15.	

16. Lebo is playing with his new toy. Lebo is feeling happy.



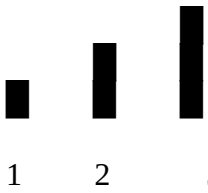
16.	

17. Lebo's sister lost his crayons. Lebo is feeling angry.



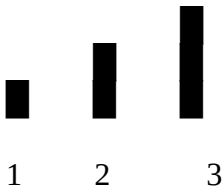
17.	

18. There is a storm with lightning and thunder. Lebo is feeling afraid.



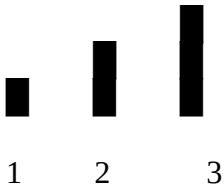
18.	

19. Father Christmas brought Lebo a new toy. Lebo is feeling happy.



19.	

20. Lebo has lost his new ball. Lebo is feeling sad.

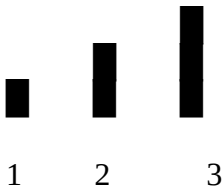


20.	

21. Lebo helped his grandmother. She thanks him with an apple. Lebo is feeling happy.

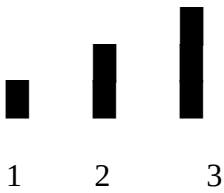
21.	

22. Lebo had a bad dream. Lebo is feeling afraid.



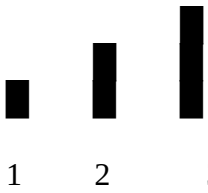
22.	

23. Lebo sang a song at church. Every one clapped hands when he finished. Lebo is feeling happy.



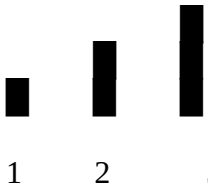
23.	

24. Lebo's grandmother died. Lebo is feeling sad.



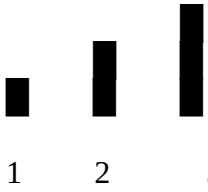
24.	

25. Mommy took Lebo to MacDonald's Lebo is feeling happy.



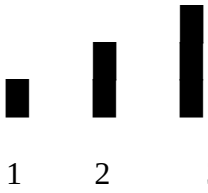
25.	

26. Lebo is going to the movies. Lebo is feeling happy.



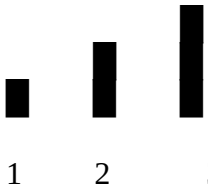
26.	

27. Lebo is eating an ice-cream. Lebo is feeling happy.



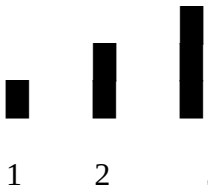
27.	

28. School closes for the holidays today. Lebo is feeling happy.



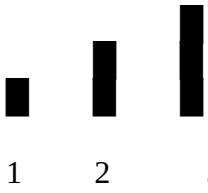
28.	

29. Granny forgot Lebo's birthday. Lebo is feeling sad.



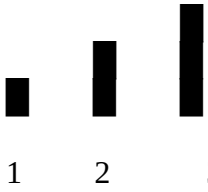
29.	

30. Lebo is going on holiday. Lebo is feeling happy.



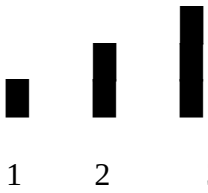
30.	

31. Lebo's friends all have a bicycle. Lebo does not. Lebo is feeling sad.



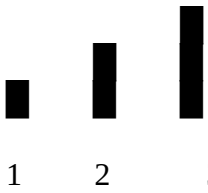
31.	

32. Lebo's friend is playing with other friends and does not want to play with him anymore. Lebo is feeling sad.



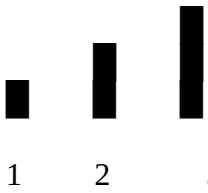
32.	

33. Lebo could not watch TV because it was broken. Lebo is feeling sad.



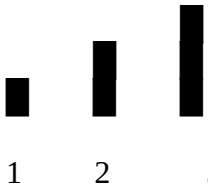
33.	

34. Someone stole Lebo's lunch. Lebo is feeling angry.



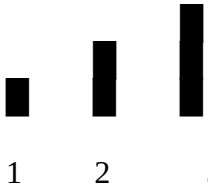
34.	

35. Lebo saw a man being knocked over. Lebo is feeling afraid.



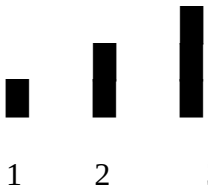
35.	

36. Lebo broke the window while playing ball Lebo is feeling scared.



36.	

37. Lebo's brother blamed him for something he had done himself. Lebo is feeling angry.



37.	

Are there any other stories you can think of that would typically elicit the feelings of happy/sad/afraid /angry? If so, please write it down:

happy_____
_____
_____
_____
_____
_____

sad_____
_____
_____
_____
_____
_____

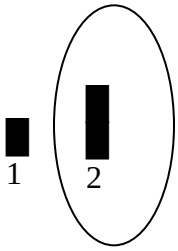
afraid_____
_____
_____
_____
_____
_____

angry_____
_____
_____
_____
_____
_____

APPENDIX O3

QUESTIONNAIRE HANDED OUT TO TEACHERS

- Please read the following short stories about an event in a child's live.
- After each story the emotion the child is feeling is offered.
- Please indicate how intense **<u>the child</u>** (age 5 to 6 years old) will experience this specific emotion (1 = a little; 2 = very).
- Indicate by circling the relevant graph.



1. Lebo's brother broke his bicycle. Lebo is feeling sad.

1.	

(for official use)

2. Lebo's mom took him to the park. Lebo is feeling happy.

2.	

3. Lebo is alone in the house and it is dark around him. Lebo is feeling afraid.

3.	

4. Another boy took Lebo's food. Lebo is feeling angry.

1 2

4.	

5. Lebo cannot play with his new friend. Lebo is feeling sad.

1 2

5.	

6. Lebo cannot find his mommy/daddy. Lebo is feeling afraid.

1 2

6.	

7. There is a spider on the wall and Lebo is feeling afraid.

1 2

7.	

8. Lebo's cat had kittens. Lebo is feeling is happy.

1 2

8.	

9. Lebo broke the neighbours' window. Lebo is feeling afraid.

1 2

9.	

10. A boy hit Lebo on the shoulder. Lebo is feeling angry.

1 2

10.	

11. Some one broke Lebo's toy. Lebo is feeling angry.

1 2

11.	

12. Lebo walked home after school. Suddenly he saw a big, angry dog. Lebo is feeling afraid.

1 2

12.	

13. Lebo is going to play at his friend's house. Lebo is feeling happy.

1 2

13.	

14. Lebo lost R5 down the drain. Lebo is feeling sad.

1 2

14.	

15. There is a thief in the house and Lebo is feeling scared

1 2

15.	

16. Lebo is playing with his new toy. Lebo is feeling happy.

1 2

16.	

17. Lebo's sister lost his crayons. Lebo is feeling angry.

1 2

17.	

18. There is a storm with lightning and thunder. Lebo is feeling afraid.

1 2

18.	

19. Father Christmas brought Lebo a new toy. Lebo is feeling happy.

1 2

19.	

20. Lebo has lost his new ball. Lebo is feeling sad.

1 2

20.	

21. Lebo helped his grandmother. She thanks him with an apple. Lebo is feeling happy.

1 2

21.	

22. Lebo had a bad dream. Lebo is feeling afraid.

1 2

22.	

23. Lebo sang a song at church. Every one clapped hands when he finished. Lebo is feeling happy.

1 2

23.	

24. Lebo's grandmother died. Lebo is feeling sad.

1 2

24.	

25. Mommy took Lebo to MacDonald's Lebo is feeling happy.

1 2

25.	

26. Lebo is going to the movies. Lebo is feeling happy.

1 2

26.	

27. Lebo is eating an ice-cream. Lebo is feeling happy.

1 2

27.	

28. School closes for the holidays today. Lebo is feeling happy.

1 2

28.	

29. Granny forgot Lebo's birthday Lebo is feeling sad.

1 2

29.	

30. Lebo is going on holiday. Lebo is feeling happy.

1 2

30.	

31. Lebo's friends all have a bicycle. Lebo does not. Lebo is feeling sad.

1 2

31.	

32. Lebo's friend is playing with other friends and does not want to play with him anymore. Lebo is feeling sad.

1 2

32.	

33. Lebo could not watch TV because it was broken. Lebo is feeling sad.

1 2

33.	

34. Someone stole Lebo's lunch. Lebo is feeling angry.

1 2 3

34.	

35. Lebo saw a man being knocked over. Lebo is feeling afraid.

1 2

35.	

36. Lebo broke the window while playing ball Lebo is feeling scared.

1 2

36.	

37. Lebo's brother blamed him for something he had done himself. Lebo is feeling angry.

1 2

37.	

Are there any other stories you can think of that would typically elicit the feelings of happy/sad/afraid /angry. If so please write it down:

happy:

_____

_____

sad:

_____

_____

afraid:
_____
_____

angry:
_____
_____

APPENDIX P

QUESTIONNAIRE TO SPEECH, LANGUAGE THERAPIST TO CHECK TRANSLATION FROM ENGLISH TO AFRIKAANS

Thank you for your assistance. Please look at the following 37 stories. The stories were translated from English to Afrikaans. Please indicate whether you agree with the translation or not. If you do not agree, please indicate at the bottom how you would translate it differently.

	Stories	Agree	Do not agree
1	Lebo's brother broke his bicycle. Lebo is feeling sad. Johan se boetie het sy fiets gebreek. Johan voel hartseer.		
2	Lebo's mom took him to the park. Lebo is feeling happy. Johan se mamma het hom park toe gevat. Johan voel gelukkig.		
3	Lebo is alone in the house and it is dark around him. Lebo is feeling afraid. Johan is alleen by die huis en dit is baie donker. Johan voel bang.		
4	Another boy took Lebo's food. Lebo is feeling angry. 'n Ander seunjie het Johan se kos gevat. Johan voel kwaad.		
5	Lebo cannot play with his new friend. Lebo is feeling sad. Johan kannie met sy nuwe maatjie speel nie. Johan voel hartseer.		
6	Lebo cannot find his mommy. Lebo is feeling afraid. Johan kannie sy mamma kry nie. Johan voel bang.		
7	There is a spider on the wall and Lebo is feeling afraid. Daar is 'n spinnekop teen die muur en Johan voel bang.		
8	Lebo's cat had kittens. Lebo is feeling is happy. Johan se kat het kleinjies gekry. Johan voel gelukkig.		
9	Lebo broke the neighbours' window. Lebo is feeling afraid. Johan het die bure se venster gebreek. Johan voel bang.		
10	A boy hit Lebo on the shoulder. Lebo is feeling angry. 'n Ander seun het Johan op die skouer geslaan. Johan voel kwaad.		

	Stories	Agree	Do not agree
11	Someone broke Lebo's toy. Lebo is feeling angry. Iemand het Johan se speelding gebreek. Johan voel kwaad.		
12	Lebo walked home after school. Suddenly he saw a big, angry dog. Lebo is feeling afraid. Oppad huis toe na skool sien Johan 'n groot, kwaai hond. Johan voel bang.		
13	Lebo is going to play at his friend's house. Lebo is feeling happy. Johan gaan by 'n maatjie speel. Johan voel gelukkig.		
14	Lebo lost R5 down the drain. Lebo is feeling sad. Johan het R5 in die waterpyp verloor. Johan voel hartseer.		
15	There is a thief in the house and Lebo is feeling scared. Daar is 'n dief in die huis en Johan voel bang.		
16	Lebo is playing with his new toy. Lebo is feeling happy. Johan speel met sy nuwe speelding. Johan voel gelukkig.		
17	Lebo's sister lost his crayons. Lebo is feeling angry. Johan se sussie het sy kryte weggegooi. Johan voel kwaad.		
18	There is a storm with lightning and thunder. Lebo is feeling afraid. Daar is 'n storm met donderweer en blitse. Johan voel bang.		
19	Father Christmas brought Lebo a new toy. Lebo is feeling happy. Kersvader het vir Johan 'n nuwe speelding gebring. Johan voel gelukkig.		
20	Lebo has lost his new ball. Lebo is feeling sad. Johan se nuwe bal het weggeraak. Johan voel hartseeer.		
21	Lebo helped his grandmother. She thanks him with an apple. Lebo is feeling happy. Johan het sy ouma gehelp. Sy het vir hom 'n appel gegee om dankie te sê. Johan voel gelukkig.		
22	Lebo had a bad dream. Lebo is feeling afraid. Johan het 'n slegte droom gehad. Johan vol bang.		

	Stories	Agree	Do not agree
23	Lebo sang a song at church. Every one clapped hands when he finished. Lebo is feeling happy. Johan het 'n liedjie by die kerk gesing. Alma het vir hom hande geklap. Johan voel gelukkig.		
24	Lebo's grandmother died. Lebo is feeling sad. Johan se ouma is dood. Johan voel hartseer.		
25	Mommy took Lebo to Wimpy. Lebo is feeling happy. Mamma het vir Johan Wimpy toe gevat. Johan voel gelukkig.		
26	Lebo is going to the movies. Lebo is feeling happy. Johan het gaan fliek. Johan voel gelukkig		
27	Lebo is eating an ice-cream. Lebo is feeling happy. Johan eet 'n roomys. Johan voel gelukkig.		
28	School closes for the holidays today. Lebo is feeling happy. Die skool het gesluit en Johan voel gelukkig.		
29	Granny forgot Lebo's birthday. Lebo is feeling sad. Ouma het Johan se verjaarsdag vergeet. Johan voel hartseer.		
30	Lebo is going on holiday. Lebo is feeling happy. Johan gaan met vakansie. Johan voel gelukkig.		
31	Lebo's friends all have a bicycle. Lebo does not. Lebo is feeling sad. Al Johan se maatjies het fietse. Johan het nie 'n fiets nie. Johan voel hartseer.		
32	Lebo's friend is playing with other friends and does not want to play with him anymore. Lebo is feeling sad. Johan se maatjie speel met ander maatjie en wil nie met Johan speel nie. Johan voel hartseer.		
33	Lebo could not watch TV because it was broken. Lebo is feeling sad. Johan kannie televisie kyk nie, want die krag is af. Johan voel hartseer.		
34	Someone stole Lebo's lunch. Lebo is feeling angry. Iemand het Johan se middagete gevat. Johan voel kwaad.		

	Stories	Agree	Do not agree
35	Lebo saw a man being knocked over. Lebo is feeling afraid. Johan het gesien hoe ‘n man omgery word. Johan voel bang.		
36	Lebo broke the window while playing ball. Lebo is feeling scared. Johan het die venster gereek terwyl hy bal gespeel het. Johan voel bang.		
37	Lebo's brother blamed him for something he had done himself. Lebo is feeling angry. Johan se broer het hom die skuld gegee vir iets wat hy self gedoen het. Johan voel kwaad.		

Suggested changes:

APPENDIX Q

QUESTIONNAIRE TO TEACHERS TO RATE VIGNETTES FROM MOST TO LEAST FAMILIAR SITUATIONS

Thank you for your assistance. Please have a look at the following 37 stories. The stories are presented in four groups, depending on which emotion they represent. Please look at each group separately (as presented in table form) and rate the stories from most to least familiar situation. While rating these stories please bear in mind that the children these stories are intended for are Afrikaans-/Sepedi-speaking 5 to 6 year olds.

HAPPY		**Rating**
1	Lebo's mom took him to the park. Lebo is feeling happy.	
2	Lebo's cat had kittens. Lebo is feeling is happy.	
3	Lebo is going to play at his friend's house. Lebo is feeling happy.	
4	Lebo is playing with his new toy. Lebo is feeling happy.	
5	Father Christmas brought Lebo a new toy. Lebo is feeling happy.	
6	Lebo helped his grandmother. She thanks him with an apple. Lebo is feeling happy.	
7	Lebo sang a song at church. Every one clapped hands when he finished. Lebo is feeling happy.	
8	Mommy took Lebo to Wimpy. Lebo is feeling happy.	
9	Lebo is going to the movies. Lebo is feeling happy.	
10	Lebo is eating an ice-cream. Lebo is feeling happy.	
11	School closes for the holidays today. Lebo is feeling happy.	
12	Lebo is going on holiday. Lebo is feeling happy.	

SAD		**Rating**
1	Lebo's brother broke his bicycle. Lebo is feeling sad.	
2	Lebo cannot play with his new friend. Lebo is feeling sad.	
3	Lebo lost R5 down the drain. Lebo is feeling sad.	
4	Lebo has lost his new ball. Lebo is feeling sad.	
5	Lebo's grandmother died. Lebo is feeling sad.	
6	Granny forgot Lebo's birthday Lebo is feeling sad.	
7	Lebo's friends all have a bicycle. Lebo does not. Lebo is feeling sad.	
8	Lebo's friend is playing with other friends and does not want to play with him anymore. Lebo is feeling sad.	
9	Lebo could not watch TV because there was a power failure. Lebo is feeling sad.	

	AFRAID	Rating
1	Lebo is alone in the house and it is dark around him. Lebo is feeling afraid.	
2	Lebo cannot find his mommy/daddy. Lebo is feeling afraid.	
3	There is a spider on the wall and Lebo is feeling afraid.	
4	Lebo broke the neighbours' window. Lebo is feeling afraid.	
5	Lebo walked home after school. Suddenly he saw a big, angry dog. Lebo is feeling afraid.	
6	There is a thief in the house and Lebo is feeling scared	
7	There is a storm with lightning and thunder. Lebo is feeling afraid.	
8	Lebo had a bad dream. Lebo is feeling afraid.	
9	Lebo saw a man being knocked over. Lebo is feeling afraid.	
10	Lebo broke the window while playing ball Lebo is feeling scared.	

	ANGRY	Rating
1	Another boy took Lebo's food. Lebo is feeling angry.	
2	A boy hit Lebo on the shoulder. Lebo is feeling angry	
3	Someone broke Lebo's toy. Lebo is feeling angry.	
4	Lebo's sister lost his crayons Lebo is feeling angry.	
5	Someone stole Lebo's lunch. Lebo is feeling angry.	
6	Lebo's brother blamed him for something he had done himself. Lebo is feeling angry.	

APPENDIX R

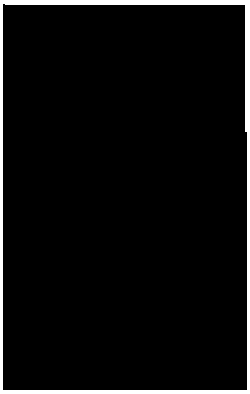
THE 24 VIGNETTES TO BE USED IN THE CURRENT STUDY.

HAPPY
Lebo's mom took him to the park.
Lebo is going to play at his friend's house.
Lebo is playing with his new toy.
Dad brought Lebo a new toy for Christmas.
Lebo sang a song at church. Every one clapped hands when he finished.
Lebo is going to the movies.
SAD
Lebo's brother broke his bicycle.
Lebo lost R5.
Lebo has lost his new ball.
Lebo's grandmother died.
Lebo's friends all have a bicycle. Lebo does not.
Lebo's friend is playing with other friends and does not want to play with him anymore.
AFRAID
Lebo is alone in the house and it is dark around him.
Lebo cannot find his mommy.
Lebo walked home after school. Suddenly he saw a big, angry dog.
There is a thief in the house.
There is a storm with lightning and thunder.
Lebo broke the window while playing ball.
ANGRY
Another boy took Lebo's food.
A boy hit Lebo on the shoulder.
Some one broke Lebo's toy.
Lebo lost his crayons.
Someone stole Lebo's lunch.
Lebo's brother blamed him for something he had done himself.

APPENDIX S

INTENSITY SCALE

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA



APPENDIX T

CHANGES MADE TO THE PROTOCOL DURING PILOT PROCESS

The differences that were noted by the rater between the two Afrikaans transcripts were discussed with Translator 1 and the following changes were made:

1. Changes were made to vignettes 2, 3, 5, 12, 15, 18, 20 and 24 to ensure the Afrikaans and Sepedi were equivalent.
2. “Ye ntswa” and “se se ntswa” were included in vignettes 2 and 3 respectively indicating the ball (nr 2) and the toy (nr 3) to be new.
3. With vignette 5 “mmago” (meaning 'mother') was replaced with “koko” (meaning 'grandmother') to mean the same as the Afrikaans “ouma” (grandmother).
4. The Afrikaans of vignette 12 was changed to “Lebo kry nie sy mamma nie.” Meaning: 'Lebo cannot find his mommy' instead of saying 'Lebo cannot find his mommy or daddy'.
5. As it was very difficult to translate Father Christmas, vignette 15 was changed for both Afrikaans and Sepedi to mean: 'Dad brought Lebo a present for Christmas'.
6. “Motaga” (chalk/crayon) was changed to “metaga” indicating plural as in the Afrikaans (vignette 18).
7. Vignette 18: The Afrikaans “se sussie” was removed. The vigneete nows reads: 'Lebo lost her crayons' instead of 'Lebo’s sister lost her crayons'.
8. Vignette 20: “Hlakane” was changed to “bone” meaning “gesien” ('saw') in Afrikaans.
9. Although “paesekopeng” is the official Sepedi word for movie, it is an archaic word not known to young children. “Paesekopeng” was changed to “filimi” a word better known by young children.

Sepedi speaking teachers indicated that three of the Sepedi emotion words were archaic and other words were chosen:

1. The word “mahlatse” was replaced with “thaba”. Both words mean 'happy'.
2. The word “befetšwe” was replaced with “kwata”. Both words mean 'angry'.
3. “Bohloko” was replaced with “swabile”; “swabile” is seen as the opposite of “thaba”, where “bohloko” has more to do with physical pain.

APPENDIX U

MINOR CHANGES MADE TO THE PRE-ASSESSMENT

During the initial Afrikaans data collection a large number of participants did not pass the pre-assessment (12 out of 50); with a further one not being able to follow the instructions. Most of these participants attended one particular school. Minor changes to the pre-assessment were made and those participants who failed the pre-assessment at that school were tested again. Retesting was only done if the participants still complied with the set selection criteria. The minor changes made are presented in Table form. The changes will only be given in English and only the changes for the girls are indicated. The same changes were made to the pre-assessment for the boys.

Pre-assessment before changes	Pre-assessment after changes
Hallo, my name is teacher Magdel. How old are you? **This tape recorder is to make sure that I listen to what you tell me.** **Now I want us to listen to some stories. These stories are about a girl and things that happened to her. You must help me decide how she feels about these things that happened to her.** **Let's listen to the stories.** (Each story will be read as presented below.)	**Hallo, my name is teacher Magdel. How old are you?** **This tape recorder is to make sure that I listen to what you tell me.** **Today we are going to talk about and listen to stories. Tell me if mommy gives you a big hug. How do you feel about mommy? Yes, ….** Give comment on participant's answer **Now I want us to listen to some stories. These stories are about a girl and things that happened to her. You must help me decide how she feels about these things that happened to her.** **Let's listen to the stories.** (Each story will be read as presented below.)
1. HAPPY: **Once upon a time there was a little girl. For her birthday her mommy and daddy gave her a beautiful doll. It was a very pretty doll.** (Take out and show car to the participant) **How do you think the girl felt about her pretty new doll?** 1. Response ***happy:*** **Yes, she felt happy**. 2. If the participant does not respond or is unsure, the vignette will be repeated and a choice given. **Once upon a time there was a little girl. For her birthdy her mommy and daddy gave her a beautiful doll. It was a very pretty doll. How do you think the little girl felt about her pretty doll? Was she HAPPY or ANGRY?**	**1. HAPPY:** **Once upon a time there was a little girl. For her birthday her mammy and daddy gave her a beautiful doll. It was a very pretty doll.** (Take out and show car to the participant) **How do you think the girl felt about her pretty new doll?** 1. Response ***happy:*** **Yes, she felt happy**. 2. Response ***glad:*** **Yes, she felt glad. Did you know that there is another word for glad? That word is happy.** **3.** ***Any other response:*** **You think she felt EMOTION. Why did she feel EMOTION?** Comment on participant's answer with something like **Yes, I would also feel EMOTION.**

Pre-assessment before changes	Pre-assessment after changes
1. HAPPY:	**1. HAPPY:** **Do you think she could feel something else than EMOTION? Let us listen to the story again and then I want you to tell me whether she felt EMOTION or happy. Once upon a time there was a little girl. For her birthday her mommy and daddy gave her a beautifull doll. It was a very pretty doll. How do you think the little girl felt about her pretty doll? Was she EMOTION or happy?**
2. SAD: **That evening when she went to bed, she took her new doll with her. When she woke up, her doll was gone. How do you think the girl felt?** 1. Response ***sad:*** **Yes, she felt sad**. 2. If the participant does not respond or is unsure, the vignette will be repeated and a choice given. **That evening when she went to bed, she took her new doll with her. When she woke up, her doll was gone. How do you think the girl felt?** **Was she happy or sad?**	**2. SAD:** **That evening when she went to bed, she took her new doll with her. When she woke up, her doll was gone. How do you think the girl felt?** 1. Response ***sad:*** **Yes, she felt sad**. 2. Response ***bad:*** **Yes, se felt bad. Did you know that there is another word for bad? That word is sad.** **3.** ***Any other response:*** **You think she felt EMOTION. Why did she feel EMOTION?** Comment on participant's answer with something like **Yes I would also feel EMOTION.** **Do you think she could feel something else than EMOTION? Let us listen to the story again and then I want you to tell me whether she felt EMOTION or sad. That evening when she went to bed, he took her new doll with her. When she woke up, her doll was gone. How do you think the girl felt? Was she EMOTION or sad?**
3. AFRAID: **She decided to go look for her doll. She opened the door. It was dark and she was alone. She walked to her sister's room. How do you think the girl felt while she was alone in the dark?** 1. Response ***afraid:*** **Yes, she felt afraid**. 2. If the participant does not respond or is unsure the vignette will be repeated and a choice given. **She decided to go look for her doll. She opened the door. It was dark and she was alone. She walked to her sister's room. How do you think the girl felt while she was alone in the dark? Was she afraid or happy?**	**3. AFRAID:** **She decided to go and look for her doll. She opened the door. It was dark and she was alone. She walked to her sister's room. How do you think the girl felt while she was alone in the dark?** 1. Response ***afraid:*** **Yes, she felt afraid**. 2. Response ***scared:*** **Yes, she felt scared. Did you know that there is another word for scared? That word is afraid.** **3.** ***Any other response:*** **You think she felt EMOTION. Why did she feel EMOTION?** Comment on participant's answer with something like **Yes I would also feel EMOTION.** **Do you think she could feel something else than EMOTION? Let us listen to the story again and then I want you to tell me whether she felt EMOTION or afraid. She decided to go and look for her doll. She opened the door. It was dark and she was alone. She walked to her sister's room. How do you think the girl felt while she was alone in the dark? Was she EMOTION or afraid?**

Pre-assessment before changes	Pre-assessment after changes
4. ANGRY: **When she opened her sister's room, she saw her doll. Her sister stole her doll. "My sister stole my doll." How do you think does the girl felt?** 1. Response ***angry:*** **Yes, she feels angry**. Continue with pretest vignette 2. If the participant does not respond or is unsure, the vignette will be repeated and a choice given. **When she opened her sister's room, she saw her doll. Her sister stole her doll. "My sister stole my doll." How do you think the girl felt?** **Was she afraid or angry?**	**4. ANGRY:** **When she opened her sister's room, she saw her doll. Her sister stole her doll. "My sister stole my doll." How do you think the girl felt?** 1. Response ***angry:*** **Yes, she felt angry**. 2. ***Any other response:*** **You think she felt EMOTION. Why did she feel EMOTION?** Comment on participant's answer with something like **Yes I would also feel EMOTION.** **Do you think she could feel something else than EMOTION? Let us listen to the story again and then I want you to tell me whether she felt EMOTION or angry. When she opened her sister's room, she saw her doll. Her sister stole her doll. "My sister stole my doll." How do you think the girl felt? Was she EMOTION or angry?**

APPENDIX V
RECORD SHEET

1 sad (hartseer)

a) ■ 1 ■ 2 | 1a
b) | 1b

5	16	14	12
8	6	10	2
13	11	7	3
4	9	15	1

2 sad (hartseer)

a) ■ 1 ■ 2 | 2a
b) | 2b

12	3	10	5
7	4	1	2
14	6	16	11
15	8	13	9

3 happy (gelukkig)

a) ■ 1 ■ 2 | 3a
b) | 3b

2	9	10	5
6	13	15	8
7	11	12	1
3	14	16	4

4 afraid (bang)

a) ■ 1 ■ 2 | 4a
b) | 4b

7	13	2	5
1	15	6	12
11	10	9	14
8	3	16	4

5 sad (hartseer)

a) ■ 1 ■ 2 | 5a
b) | 5b

13	6	11	10
9	2	14	12
15	16	5	4
8	7	1	3

6 afraid (bang)

a) ■ 1 ■ 2 | 6a
b) | 6b

12	8	6	1
10	5	2	7
11	9	13	4
14	15	3	16

7 afraid (bang)

a) ■ 1 ■ 2 | 7a
b) | 7b

15	13	1	5
2	10	6	7
12	11	14	3
16	8	4	9

8 angry (kwaad)

a) ■ 1 ■ 2 | 8a
b) | 8b

16	9	3	4
5	1	12	15
6	11	2	13
8	7	10	14

9 happy (gelukkig)

a) ■1 ■2 — 9a
b) — 9b

9	8	5	6
2	1	16	15
7	10	3	12
4	11	13	14

10 happy (gelukkig)

a) ■1 ■2 — 10a
b) — 10b

3	13	5	9
8	7	16	4
12	1	11	6
15	10	2	14

11 angry (kwaad)

a) ■1 ■2 — 11a
b) — 11b

6	3	4	1
8	5	10	13
2	15	12	11
14	9	7	16

12 afraid (bang)

a) ■1 ■2 — 12a
b) — 12b

12	13	14	9
8	1	16	2
3	10	4	5
11	7	15	6

13 sad (hartseer)

a) ■1 ■2 — 13a
b) — 13b

9	6	10	7
4	8	15	13
11	5	1	12
2	16	3	14

14 sad (hartseer)

a) ■1 ■2 — 14a
) — 14b

3	15	1	13
8	11	5	14
9	16	12	4
7	2	10	6

15 happy (gelukkig)

a) ■1 ■2 — 15a
b) — 15b

14	6	10	5
11	9	15	2
7	1	12	8
3	13	16	4

16 sad (hartseer)

a) ■1 ■2 — 16a
b) — 16b

3	8	11	12
15	10	4	14
2	1	9	5
13	16	6	7

17 afraid (bang)

a) ■ 1 ■ 2 | 17a
b) | 17b

13	3	4	16
1	14	10	5
7	9	12	8
6	2	11	15

18 angry (kwaad)

a) ■ 1 ■ 2 | 18a
b) | 18b

13	8	12	7
10	3	11	1
2	5	6	15
16	14	4	9

19 happy (gelukkig)

a) ■ 1 ■ 2 | 19a
b) | 19b

14	1	3	6
8	9	2	11
12	10	7	16
13	4	15	5

20 afraid (bang)

a) ■ 1 ■ 2 | 20a
b) | 20b

3	15	16	4
2	5	8	6
14	1	10	13
12	7	9	11

21 angry (kwaad)

a) ■ 1 ■ 2 | 21a
b) | 21b

7	6	1	16
15	8	4	13
9	14	3	5
2	12	11	10

22 angry (kwaad)

a) ■ 1 ■ 2 | 22a
b) | 22b

13	4	12	7
11	3	8	9
14	15	16	5
2	1	10	6

23 angry (kwaad)

a) ■ 1 ■ 2 | 23a
b) | 23b

4	7	14	10
11	2	9	16
1	15	13	8
5	6	12	3

24 happy (gelukkig)

a) ■ 1 ■ 2 | 24a
b) | 24b

7	14	11	13
4	1	16	10
2	8	9	15
5	12	6	3

APPENDIX W

ENGLISH, AFRIKAANS AND SEPEDI VERSIONS OF THE PROTOCOL

APPENDIX W1

ENGLISH VERSION

GIRLS:

Switch tape recorder on.
Hallo, my name is teacher Magdel. How old are you?
This tape recoder is to make sure that I listen to what you tell me.
Today we are going to talk about and listen to stories. Tell me if mommy gives you a big hug. How do you feel about mommy? Yes, …. Give comment on participant's answer
Now I want us to listen to some stories. These stories are about a girl and things that happened to her. You must help me decide how she feels about these things that happened to her.

Pre test:
The rationale behind the pre-test is to make sure the participant knows the four emotions used in the study.
Let's listen to the stories. (Each story will be read as presented below.)
1. HAPPY:
Once upon a time there was a little girl. For her birthday her mommy and daddy gave her a beautiful doll. It was a very pretty doll, (Take out and show doll to the participant)
How do you think the girl felt about her pretty new doll?

4. Response ***happy:*** **Yes, she felt happy**. Continue with pretest vignette 2.
5. Response ***glad:*** **Yes, she felt glad. Did you know that there is another word for glad? That word is happy.**
6. ***Any other response:*** **You think she felt EMOTION. Why did she feel EMOTION?** Comment on participant's answer with something like **Yes I would also feel EMOTION.**

Do you think she could feel something else than EMOTION? Let us listen to the story again and then I want you to tell me whether she feels EMOTION or happy. Once upon a time there was a little girl. For her birthday her mommy and daddy gave her a beautifull doll. It was a very pretty doll. How do you think the little girl felt about her pretty doll? Was she EMOTION or happy?

7. Repeat and record answer
8. Continue with pretest vignette 2

2. SAD:
That evening when she went to bed, she took her new doll with her. When she woke up, her doll was gone. How do you think the girl felt?

1. Response ***sad:*** **Yes, she felt sad**. Continue with pretest vignette 2.
4. Response ***bad:*** **Yes, se felt bad. Did you know that there is another word for bad? That word is sad.**

5. ***Any other response:*** **You think she feels EMOTION. Why does she feel EMOTION?** Comment on participant's answer with something like **Yes I would also feel EMOTION.**

Do you think she could feel something else than EMOTION? Let us listen to the story again and then I want you to tell me whether she feels EMOTION or sad. That evening when she went to bed, she took her new doll with her. When she woke up, her doll was gone. How do you think does the girl felt?
Was she EMOTION or sad?

6. Repeat and record answer.
7. Continue with pretest vignette 3.

3. AFRAID:
She decided to go and look for her doll. She opened the door. It was dark and she was alone. She walked to her sister's room. How do you think the girl felt while she was alone in the dark?

1. Response ***afraid:*** **Yes, she felt afraid**. Continue with pretest vignette 4.
2. Response ***scared:*** **Yes, she felt scared. Did you know that there is another word for scared? That word is afraid.**
3. ***Any other response:*** **You think she felt EMOTION. Why did she feel EMOTION?** Comment on participant's answer with something like **Yes I would also feel EMOTION.**

Do you think she could feel something else than EMOTION? Let us listen to the story again and then I want you to tell me whether she feels EMOTION or afraid. She decided to go look for her doll. She opened the door. It was dark and she was alone. She walked to her sister's room. How do you think did the girl feel while she was alone in the dark? Was she EMOTION or afraid?

4. Repeat and record answer.
5. Continue with pretest vignette 4.

4. ANGRY:
When she opened her sister's room, she saw her doll. Her sister stole her doll. "My sister stole my doll." How do you think the girl felt?

1. Response ***angry:*** **Yes, she felt angry**. Continue with pretest vignette 2.
2. ***Any other response:*** **You think she feels EMOTION. Why did she feel EMOTION?** Comment on participant's answer with something like **Yes I would also feel EMOTION.**

Do you think she could feel something else than EMOTION? Let us listen to the story again and then I want you to tell me whether she felt EMOTION or angry. When she opened her sister's room, she saw her doll. Her sister stole her doll. "My sister stole my doll." How do you think the girl felt?
Was she EMOTION or angry?

3. Repeat and record answer.

- If participant does not pass pre-test: **Thanks for helping me.** Give child a sticker/star. **You can go back to class.** Switch tape recorder off.
- If participant passed the pre-test: **Good job, now we are going to listen to other stories. These stories are about Sarie and things that happened to her. You must help me to choose pictures which match with the stories.**
- Show participant the intensity scale. **Look, the picture shows normal** (point to shortest bar) **and a lot** (point to longest bar). Open overlay file at overlay 1.
- Start with vignette 1.

- If participant is unable to answer, repeat the vignette once. Each vignette may only be repeated once.
- Give feedback as indicated

1	**Sarie's brother broke her bicycle.** **a) If you were Sarie, would you have been just sad or very sad?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
2	**Sarie lost her new ball.** **a) If you were Sarie, would you have been just sad or very sad?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
3	**Sarie is playing with her new toy.** **a) If you were Sarie, would you have been just happy or very happy?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question. **GOOD**
4	**Sarie is alone in the house and it is dark.** **a) If you were Sarie, would you have been just scared or very scared?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
5	**Sarie's grandmother died.** **a) If you were Sarie, would you have been just sad or very sad?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
6	**There is a storm with lightning and thunder.** **a) If you were Sarie, would you have been just scared or very scared?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
7	**There is a thief in the house.** **a) If you were Sarie, would you have been just scared or very scared?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question. **YES**
8	**Another girl took Sarie's food.** **a) If you were Sarie, would you have been just angry or very angry?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
9	**Sarie is going to play at her friend's house.** **a) If you were Sarie, would you have been just happy or very happy?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.

10	**Sarie's mom took her to the park.** **a) If you were Sarie, would you have been just happy or very happy?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
11	**Sarie's brother blamed her for something she did not do.** **a) If you were Sarie, would you have been just angry or very angry?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
12	**Sarie cannot find her mommy.** **a) If you were Sarie, would you have been just scared or very scared?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
13	**Sarie's friend is playing with other friends and does not want to play with her anymore.** **a) If you were Sarie, would you have been just sad or very sad?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
14	**Sarie's friends all have bicycles. Sarie does not have one** **a) If you were Sarie, would you have been just sad or very sad?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
15	**Daddy brought Sarie a new toy for Christmas.** **a) If you were Sarie, would you have been just happy or very happy?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
16	**Sarie lost her R5.** **a) If you were Sarie, would you have been just sad or very sad?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question. **YES**
17	**Sarie broke the window while playing ball.** **a) If you were Sarie, would you have been just scared or very scared?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
18	**Sarie lost her crayons.** **a) If you were Sarie, would you have been just angry or very angry?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.

19	**Sarie sang a song in church. Every one applauded.** **a) If you were Sarie, would you have been just happy or very happy?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question. **ALMOST FINISHED**
20	**Sarie walked home after school. Suddenly she saw a big angry dog.** **a) If you were Sarie, would you have been just scared or very scared?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
21	**Someone stole Sarie's lunch.** **a) If you were Sarie, would you have been just angry or very angry?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
22	**A girl hit Sarie on the shoulder.** **a) If you were Sarie, would you have been just angry or very angry?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
23	**Someone broke Sarie's toy.** **a) If you were Sarie, would you have been just angry or very angry?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
24	**Sarie is going to the movies.** **a) If you were Sarie, would you have been just happy or very happy?** Show to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question. **GOOD**

Thanks for helping me. Give child a sticker/star. **You can go back to class.** Switch tape recorder off.

BOYS:

Switch on tape recorder.
Hallo, my name is teacher Magdel. How old are you?
This tape recoder is to make sure that I listen to what you tell me.
Today we are going to talk about and listen to stories. Tell me if mommy gives you a big hug. How do you feel about mommy? Yes, …. Give comment on participant's answer
Now I want us to listen to some stories. These stories are about a boy and things that happened to him. You must help me decide how he feels about these things that happened to him.

Pre test:
The rationale for the pre-test is to make sure the participant knows the four emotions used in the study.

Let's listen to the stories. (Each story will be read as presented below.)

1. HAPPY:

Once upon a time there was a boy. For his birthday his mommy and daddy gave him a beautiful car. It was a very nice car, (Take out and show car to participant) **How do you think the boy felt about his nice new car?**

1. Response ***happy:*** **Yes, he feels happy**. Continue with pretest vignette 2.
2. Response ***glad:*** **Yes, he feels glad. Did you know that there is another word for glad? That word is happy.**
3. ***Any other response:*** **You think he feels EMOTION. Why does he feel EMOTION?** Comment on participant's answer with something like **Yes I would also feel EMOTION.**

Do you think she could feel something else than EMOTION? Let us listen to the story again and then I want you to tell me whether he felt EMOTION or happy. Once upon a time there was a boy. For his birthday his mommy and daddy gave him a beautiful car. It was a very nice car. (Take out and show car to the participant) **How do you think the boy felt about his nice new car? Was he EMOTION or happy?**

4. Repeat and record answer
5. Continue with pretest vignette 2.

2. SAD:

That evening when he went to bed, he took his new car with him. When he woke up, his car was gone. How do you think the boy felt?

1. Response ***sad:*** **Yes, he felt sad**. Continue with pretest vignette 3.
2. Response ***bad:*** **Yes, he felt bad. Did you know that there is another word for bad? That word is sad.**
3. ***Any other response:*** **You think he felt EMOTION. Why did he feel EMOTION?** Comment on participant's answer with something like **Yes I would also feel EMOTION.**

Do you think he could feel something else than EMOTION? Let us listen to the story again and then I want you to tell me whether he felt EMOTION or sad. That evening when he went to bed, he took his new car with him. When he woke up, his car was gone. How do you think the boy felt? Was he EMOTION or sad?

4. Repeat and record answer.
5. Continue with pretest vignette 3.

3. AFRAID:

He decided to go and look for his car. He opened the door. It was dark and he was alone. He walked to his brother's room. How do you think the boy felt while alone in the dark?

1. Response ***afraid:*** **Yes, he felt afraid**. Continue with pretest vignette 4.
2. Response ***scared:*** **Yes, he felt scared. Did you know that there is another word for scared? That word is afraid.**
3. ***Any other response:*** **You think he felt EMOTION. Why does he feel EMOTION?** Comment on participant's answer with something like **Yes I would also feel EMOTION.**

Do you think he could feel something else than EMOTION? Let us listen to the story again and then I want you to tell me whether he feels EMOTION or afraid. He decided

to go look for his car. He opened the door. It was dark and he was alone. He walked to his brother's room. How do you think the boy felt while alone in the dark? Was he EMOTION or afraid?

4. Repeat and record answer.
5. Continue with pretest vignette 4.

4. ANGRY:

When he opened his brother's room, he saw his car. His brother stole his car. "My brother stole my car." How do you think the boy felt?

1. Response ***angry:*** **Yes, he felt angry**. Continue with pretest vignette 2.
2. ***Any other response:*** **You think he felt EMOTION. Why does he feel EMOTION?** Comment on participant's answer with something like **Yes I would also feel EMOTION.**

Do you think he could feel something else than EMOTION? Let us listen to the story again and then I want you to tell me whether he felt EMOTION or angry? Was he EMOTION or angry?

3. Repeat and record answer.

2. Repeat and record answer.

- If participant does not pass pre-test: **Thanks for helping me.** Give child a sticker/star. **You can go back to class.** Switch tape recorder off.
- If participant passed the pre-test: **Good job, now we are going to listen to other stories. These stories are about John and things that happened to him. You must help me to choose pictures which match with the stories.**
- Show participant the intensity scale. **Look, this picture shows normal** (point to shortest bar) **and a lot** (point to longest bar). Open overlay file at overlay 1.
- Start with vignette 1.
- If participant is unable to answer, repeat the vignette once. Each vignette may only be repeated once.
- Give feedback as indicated

1	**John's brother broke his bicycle.** **a) If you were John, would you have been just sad or very sad?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
2	**John lost his new ball.** **a) If you were John, would you have been just sad or very sad?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
3	**John is playing with his new toy.** **a) If you were John, would you have been just happy or very happy?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question. **GOOD**

4	**John is alone in the house and it is dark.** **a) If you were John, would you have been just scared or very scared?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
5	**John's grandmother died.** **a) If you were John, would you have been just sad or very sad?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
6	**There is a storm with lightning and thunder.** **a) If you were John, would you have been just scared or very scared?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
7	**There is a thief in the house.** **a) If you were John, would you have been just scared or very scared?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question. **YES**
8	**Another boy took John's food.** **a) If you were John, would you have been just angry or very angry?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
9	**John is going to play at his friend's house.** **a) If you were John, would you have been just happy or very happy?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
10	**John's mom took him to the park.** **a) If you were John, would you have been just happy or very happy?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
11	**John's brother blamed him for something he did not do.** **a) If you were John, would you have been just angry or very angry?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
12	**John cannot find his mommy.** **a) If you were John, would you have been just scared or very scared?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.

13	**John's friend is playing with other friends and does not want to play with him anymore.** **a) If you were John, would you have been just sad or very sad?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
14	**John's friends all have bicycles. John does not have one** **a) If you were John, would you have been just sad or very sad?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
15	**Daddy brought John a new toy for Christmas.** **a) If you were John, would you have been just happy or very happy?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
16	**John lost his R5.** **a) If you were John, would you have been just sad or very sad?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question. **YES**
17	**John broke the window while playing ball.** **a) If you were John, would you have been just scared or very scared?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
18	**John lost his crayons.** **a) If you were John, would you have been just angry or very angry?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
19	**John sang a song in church. Everyone applauded.** **a) If you were John, would you have been just happy or very happy?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question. **ALMOST FINISHED**
20	**John walked home after school. Suddenly he saw a big angry dog.** **a) If you were John, would you have been just scared or very scared?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
21	**Someone stole John's lunch.** **a) If you were John, would you have been just angry or very angry?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.

22	**A boy hit John on the shoulder.** **a) If you were John, would you have been just angry or very angry?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
23	**Someone broke John's toy.** **a) If you were John, would you have been just angry or very angry?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question.
24	**John is going to the movies.** **a) If you were John, would you have been just happy or very happy?** Point to respective bars when asking the question. **b) Which picture do you think shows** (participant's answer at a)**?** Facilitate scanning by pointing to each symbol while asking question. **GOOD**

Thanks for helping me. Give child a sticker/star. **You can go back to class.** Switch tape recorder off.

APPENDIX W2
AFRIKAANS VERSION

GIRLS
Switch tape recorder on.
"Hallo, my naam is tannie Magdel. Sê vir my, hoe oud is jy?"

Ons gaan vandag bietjie gesels en na stories luister. Sê bietjie vir my, as mamma jou 'n stywe drukkie gee, hoe voel jy oor mamma? "Ja, …." Give comment on participant's answer ("so, as mamma jou 'n drukkie gee voel jy lief vir haar"). If the participant gives a seemingly unrelated answer, ask him other why ("so, jy sal kwaad voel as mamma vir jou 'n drukkie gee. Hoekom voel jy kwaad?")
Nou wil ek hê ons moet na 'n paar stories luister. Hierdie stories gaan oor 'n dogtertjie en goed wat met haar gebeur. Jy moet my help besluit hoe die dogtertjie voel nadat die goed met haar gebeur.

Pre test:
The rationale for the pre-test is to make sure the participant knows the four emotions used in the study.
Goed kom ons luister na die stories. (Each story will be read as presented below.)

1. HAPPY: "gelukkig/bly":
"Eendag was daar 'n dogtertjie. Vir haar verjaardag het sy 'n pragtige pop by haar pappa en mamma gekry. Dit was 'n baie mooi pop." (Take out and show doll to the participant) **"Hoe dink jy voel die dogtertjie oor haar nuwe mooi pop?**

9. Response ***"gelukkig":*** **Ja, sy voel gelukkig**. Continue with pretest vignette 2.
10. Response ***"bly":*** **"Ja, sy voel bly. Het jy geweet dat daar nog 'n woord vir bly is. Die ander woord is "gelukkig".**
11. ***Any other response:*** **"Jy dink sy voel EMOTION. Hoekom voel sy EMOTION "gevoel?"** Comment on participant's answer with some thing like "**Ja, ek sou ook EMOTION gevoel het."**

"Dink jy dat die dogtertjie iets anders as EMOTION kan voel? Kom ons luister weer na die storie en dan vertel jy my of sy gelukkig of kwaad voel. Eendag was daar 'n dogtertjie. Vir haar verjaardag het sy 'n pragtige pop by haar pappa en mamma gekry. Dit was 'n baie mooi pop. Hoe dink jy voel die dogtertjie oor haar nuwe mooi pop? Was sy gelukkig of kwaad?"

12. Repeat and record answer
13. Continue with pretest vignette 2.

2. SAD: "hartseer/ongelukkig":
"Daardie aand toe sy gaan slaap, is haar pop saam met haar bed toe. Toe sy wakker word kon sy die pop nêrens kry nie. Hoe dink jy het die dogtertjie gevoel?"

1. Response ***"hartseer":*** "**Ja, sy voel hartseer**." Continue with pretest vignette 3.
2. Response ***"ongelukkig":*** **"Ja, sy voel ongelukkig**. **Het jy geweet dat daar nog 'n woord vir ongelukig is. Die ander woord is 'hartseer'".**Continue with pretest vignette 3.

3. ***Any other response:*** **"Jy dink sy voel EMOTION. Hoekom voel sy EMOTION?"** Comment on participant's answer with some thing like "**Ja, ek sou ook EMOTION gevoel het."**

"Dink jy dat die dogtertjie iets anders as EMOTION kan voel? Kom ons luister weer na die storie en dan vertel jy my of sy gelukkig of hartseer voel. Daardie aand toe sy gaan slaap, is haar pop saam met haar bed toe. Toe sy wakker word kon sy die pop nêrens kry nie. Hoe dink jy het die dogtertjie gevoel? Was sy gelukkig of hartseer?"

4. Repeat and record answer
5. Continue with pretest vignette 3.

3. AFRAID: "bang"

"Sy besluit om haar pop te gaan soek. Sy maak haar kamerdeur oop. Dit was baie donker en sy was alleen. Sy het na haar sussie se kamer geloop. Hoe dink jy het sy gevoel terwyl sy alleen in die donker was?"

1. Response ***"bang":*** **Ja, sy voel bang**" Continue with pretest vignette 4.
2. ***Any other response:*** **"Jy dink sy voel EMOTION. Hoekom voel sy EMOTION?"** Comment on participant's answer with some thing like "**Ja, ek sou ook EMOTION gevoel het."**

"Dink jy dat die dogtertjie iets anders as EMOTION kan voel? Kom ons luister weer na die storie en dan vertel jy my of sybang of gelukkig voel. Sy besluit om haar pop te gaan soek. Sy maak haar kamerdeur oop. Dit was baie donker en sy was alleen. Sy het na haar sussie se kamer geloop. Hoe dink jy het sy gevoel terwyl sy alleen in die donker was? Was sy bang of gelukkig?

3. Repeat and record answer
4. Continue with pretest vignette 4.

4. ANGRY: "kwaad"

"Toe sy haar jonger sussie se kamer oopmaak sien sy haar pop daar lê. Haar sussie het haar pop gesteel. 'My sussie het my pop gesteel!' Hoe dink jy het die dogterjie gevoel?"

1. Response ***"kwaad":*** "**Ja, sy voel kwaad**."
2. ***Any other response:*** **"Jy dink sy voel EMOTION. "Hoekom voel sy EMOTION?"** Comment on participant's answer with some thing like "**Ja, ek sou ook EMOTION gevoel het."**

"Dink jy dat die dogtertjie iets anders as EMOTION kan voel? Kom ons luister weer na die storie en dan vertel jy my of sy bang of kwaad voel. Toe sy haar jonger sussie se kamer oopmaak sien sy haar pop daar lê. Haar sussie het haar pop gesteel. 'My sussie het my pop gesteel!" Hoe dink jy het die dogterjie gevoel? Was sy bang of kwaad?Repeat and record answer

3. Repeat and record answer

- If participant does not pass pre-test: "**Dankie dat jy my gehelp het. Jy kan maar teruggaan klas toe. Hier is vir jou 'n sterretjie om dankie te sê dat jy my so mooi gehelp het."** Switch tape recorder off. Participant receives a sticker.
- If participant passed the pre-test: "**Goed, nou gaan ons na nog stories luister. Hierdie stories gaan oor Sarie en goed wat met haar gebeur het. Na ons na die storie geluister het, moet jy my help om prentjies te kies wat jy dink by die storie pas."** Show participant the intensity scale. "**Sien jy, hierdie prentjie wys gewoon".** (point to shortest bar) **en baie** (point to longest bar). Open overlay file at overlay 1.

- Start with vignette 1.
- If participant is unable to answer, repeat the vignette once. Each vignette may only be repeated once.
- Give feedback as indicated

1	"Sarie se boetie het haar fiets gebreek." a) "As jy Sarie was, sou jy net **hartseer** of **baie hartseer** gevoel het?" b) "Watter prentjie dink jy wys **(participants's answer at a)**?"
2	"Sarie het haar nuwe bal verloor." a) "As jy Sarie was, sou jy net **hartseer** of **baie hartseer** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
3	"Sarie speel met haar nuwe speelding." a) "As jy Sarie was, sou jy net **gelukkig** of **baie gelukkig** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
4	Sarie is alleen in die huis en dit is donker om haar. a) "As jy Sarie was, sou jy net **bang** of **baie bang** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
5	"Sarie se ouma is dood." a) "As jy Sarie was, sou jy net **hartseer** of **baie hartseer** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
6	"Daar is 'n donderstorm met weerlig." a) "As jy Sarie was, sou jy net **bang** of **baie bang** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
7	"Daar is 'n dief in die huis." a) "As jy Sarie was, sou jy net **bang** of **baie bang** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
8	"'n Ander seun het Sarie se kos gevat." a) "As jy Sarie was, sou jy net **kwaad** of **baie kwaad** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
9	"Sarie gaan by haar maatjie se huis speel." a) "As jy Sarie was, sou jy net **gelukkig** of **baie gelukkig** gevoel het?" b) Watter prentjie dink jy wys **(kind se antwoord by a)**?
10	"Sarie se ma het haar parkie toe gevat." a) "As jy Sarie was, sou jy net **gelukkig** of **baie gelukkig** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
11	"Sarie se boetie het Sarie die skuld gegee vir iets wat Sarie nie gedoen het nie." a) "As jy Sarie was, sou jy net **kwaad**of **baie kwaad** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
12	"Sarie kry nie haar mamma nie." a) "As jy Sarie was, sou jy net **bang** of **baie bang** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
13	"Sarie se maatjie speel met ander maatjies en wil nie meer met haar speel nie." a) "As jy Sarie was, sou jy net **hartseer** of **baie hartseer** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
14	"Sarie se maatjies het almal fietse. Sarie het nie een nie." a) "As jy Sarie was, sou jy net **hartseer** of **baie hartseer** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
15	"Pappa het vir Sarie 'n nuwe speelding vir Kersfees gebring." a) "As jy Sarie was, sou jy net **gelukkig** of **baie gelukkig** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**

16	"Sarie het haar R 5 verloor." a) "As jy Sarie was, sou jy net **hartseer** of **baie hartseer** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
17	"Sarie het die venster gebreek terwyl sy bal gespeel het." a) "As jy Sarie was, sou jy net **bang** of **baie bang** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
18	"Sarie se sussie haar kryte verloor." a) "As jy Sarie was, sou jy net **kwaad**of **baie kwaad** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
19	"Almal het vir Sarie hande geklap nadat sy in die kerk gesing het." a) "As jy Sarie was, sou jy net **gelukkig** of **baie gelukkig** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
20	"Sarie het na skool huis toe gestap. Skielik het sy 'n groot, kwaai hond gesien." a) "As jy Sarie was, sou jy net **bang** of **baie bang** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
21	"Iemand het Sarie se middagete gesteel." a) "As jy Sarie was, sou jy net **kwaad**of **baie kwaad** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
22	"'n Seun het Sarie op die skouer geslaan." a) "As jy Sarie was, sou jy net **kwaad**of **baie kwaad** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
23	"Iemand het Sarie se speelding gebreek." a) "As jy Sarie was, sou jy net **kwaad**of **baie kwaad** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
24	"Sarie gaan fliek." a) "As jy Sarie was, sou jy net **gelukkig** of **baie gelukkig** gevoel het?" b) "Watter prentjie dink jy wys **(kind se antwoord by a)**?

BOYS
Switch tape recorder on.
"Hallo, my naam is tannie Magdel. Sê vir my, hoe oud is jy?
Ons gaan vandag bietjie gesels en na stories luister. Sê bietjie vir my, as mamma jou 'n stywe drukkie gee, hoe voel jy oor mamma? Ja, …." Give comment on participant's answer ("so, as mamma jou 'n drukkie gee voel jy lief vir haar"). If the participant gives a seemingly unrelated answer, ask him other why ("so, jy sal kwaad voel as mamma vir jou 'n drukkie gee. Hoekom voelo jy kwaad?")
"Nou wil ek hê ons moet na 'n paar stories luister. Hierdie stories gaan oor 'n seuntjie en goed wat met hom gebeur. Jy moet my help besluit hoe die seuntjie voel nadat die goed met hom gebeur."

Pre test:
The rationale for the pre-test is to make sure the participant knows the four emotions used in the study.
The pre-test stories will be scored as follows:
Participant will receive a one for using each of happy, sad, scared and angry or predetermined synonyms (1 = understand) . If participant was given a choice and then chose the "correct" one the participant will receive a two (2 = understand, choice given). If participant was given a choice and then chose the "wrong" one the participant will receive a three (3 = does not understand). If a participant receives a three he will not participate in the study.

For the vignette 2 and 4 of the pre-test 'sad' and 'angry' can be possible answers for both questions. The importance is that both of these were chosen.

"Goed, kom ons luister na die stories." (Each story will be read as presented below.)

1. HAPPY: "gelukkig/bly":
"Eendag was daar 'n seuntjie. Vir sy verjaardag het hy 'n pragtige karretjie by sy pappa en mamma gekry. Dit was 'n baie mooi karetjie. (Take out and show "karretjie" to the participant) **Hoe dink jy voel die seuntjie oor sy nuwe mooi karretjie?**

14. Response *"**gelukkig":*** "**Ja, hy voel gelukkig**." Continue with pretest vignette 2.
15. Response *"**bly":*** **"Ja, hy voel bly. Het jy geweet dat daar nog 'n woord vir bly is? Die ander woord is 'gelukkig'".**
16. ***Any other response:*** **"Jy dink hy voel EMOTION. Hoekom voel hy EMOTION?"** Comment on participant's answer with some thing like "**Ja, ek sou ook EMOTION gevoel het."**

"Dink jy dat die seuntjie iets anders as EMOTION kan voel? Kom ons luister weer na die storie en dan vertel jy my of hy gelukkig of kwaad voel. Eendag was daar 'n seuntjie. Vir sy verjaardag het hy 'n pragtige karretjie by sy pappa en mamma gekry. Dit was 'n baie mooi karretjie. Hoe dink jy voel die seuntjie oor sy nuwe mooi karretjie? Was hy gelukkig of kwaad?

17. Repeat and record answer
18. Continue with pretest vignette 2.

2. SAD: "hartseer/ongelukkig":
"Daardie aand toe hy gaan slaap, is sy karretjie saam met hom bed toe. Toe hy wakker word kon hy die karretjie nêrens kry nie. Hoe dink jy het die seuntjie gevoel?"

1. Response *"**hartseer":*** **"Ja, hy voel hartseer**." Continue with pretest vignette 2.
2. Response *"**ongelukkig":*** **"Ja, hy voel ongelukkig. Het jy geweet dat daar nog 'n woord vir ongelukkig is? Die ander woord is 'hartseer'".**
3. ***Any other response:*** **"Jy dink hy voel EMOTION. Hoekom voel hy EMOTION?"** Comment on participant's answer with some thing like "**Ja, ek sou ook EMOTION gevoel het."**

Dink jy dat die seuntjie iets anders as EMOTION kan voel? Kom ons luister weer na die storie en dan vertel jy my of hy gelukkig of hartseer voel. Daardie aand toe hy gaan slaap, is sy karretjie saam met hom bed toe. Toe hy wakker word kon hy die karretjie nêrens kry nie. Hoe dink jy het die seuntjie gevoel? Was hy gelukkig of hartseer?"

4. Repeat and record answer
5. Continue with pretest vignette 3.

3. AFRAID: "bang":
"Hy besluit om sy karretjie te gaan soek. Hy maak sy kamerdeur oop. Dit was baie donker en hy was alleen. Hy het na sy boetie se kamer geloop. Hoe dink jy het hy gevoel terwyl hy alleen in die donker was?"

1. Response *"**bang":*** "**Ja, hy voel bang**". Continue with pretest vignette 4.
2. ***Any other response:*** **"Jy dink hyvoel EMOTION. Hoekom voel sy EMOTION?** Comment on participant's answer with some thing like :**Ja, ek sou ook EMOTION gevoel het."**

"Dink jy dat die seuntjie iets anders as EMOTION kan voel? Kom ons luister weer na die storie en dan vertel jy my of hy bang of gelukkig voel. Hy besluit om sy karretjie te gaan soek. Hy maak sy kamerdeur oop. Dit was baie donker en hy was alleen. Hy het na sy boetie se kamer geloop. Hoe dink jy het hy gevoel terwyl hy alleen in die donker was? Was hy bang of gelukkig?"

3. Repeat and record answer
4. Continue with pretest vignette 4.

4. ANGRY: "kwaad":

"Toe hy sy jonger boetie se kamer oopmaak sien hy sy karretjie daar lê. Sy boetie het sy karretjie gesteel. 'My boetie het my karretjie gesteel!' Hoe dink jy het die seuntjie gevoel?"

1. Response ***"kwaad":*** "**Ja, hy voel kwaad**." Continue with pretest vignette 3.
2. ***Any other response:*** **"Jy dink hy voel EMOTION. Hoekom voel hy EMOTION?** Comment on participant's answer with some thing like "**Ja, ek sou ook EMOTION gevoel het."**

"Dink jy dat die seuntjie iets anders as EMOTION kan voel? Kom ons luister weer na die storie en dan vertel jy my of hy bang of kwaad voel. Toe hy sy jonger boetie se kamer oopmaak sien hy sy karretjie daar lê. Sy boetie het sy karretjie gesteel. 'My boetie het my karretjie gesteel!' Hoe dink jy het die seuntjie gevoel? Was hy bang of kwaad?" Repeat and record answer

3. Repeat and record answer

- If participant does not pass pre-test: "**Dankie dat jy my gehelp het. Jy kan maar teruggaan klas toe Hier is vir jou 'n sterretjie om dankie te sê dat jy my so mooi gehelp het."** Switch tape recorder off. Participant receives a sticker.
- If participant passed the pre-test: "**Goed, nou gaan ons na nog stories luister. Hierdie stories gaan oorJohann goed wat met homgebeur het. Na ons na die storie geluister het, moet jy my help om 'n prentjie te kies wat jy dink by die storie pas."** Show participant the intensity scale. "**Sien jy, hierdie prentjie wys gewoon** (point to shortest bar) **en baie"** (point to longest bar). Open overlay file at overlay 1.
- Start with vignette 1.
- If participant is unable to answer, repeat the vignette once. Each vignette may only be repeated once.
- Give feedback as indicated

1	"Johan se boetie het sy fiets gebreek." a) "As jy Johan was, sou jy net **hartseer** of **baie hartseer** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
2	"Johan het sy nuwe bal verloor." a) "As jy Johan was, sou jy net **hartseer** of **baie hartseer** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
3	"Johan speel met sy nuwe speelding." a) "As jy Johan was, sou jy net **gelukkig** of **baie gelukkig** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
4	"Johan is alleen in die huis en dit is donker om hom." a) "As jy Johan was, sou jy net **bang** of **baie bang** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**

5	"Johan se ouma is dood." a) "As jy Johan was, sou jy net **hartseer** of **baie hartseer** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
6	"Daar is 'n donderstorm met weerlig." a) "As jy Johan was, sou jy net **bang** of **baie bang** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
7	"Daar is 'n dief in die huis." a) "As jy Johan was, sou jy net **bang** of **baie bang** gevoel het?" b)"Watter prentjie dink jy wys **(participant's answer at a)?"**
8	"'n Ander seun het Johan se kos gevat." a) "As jy Johan was, sou jy net **kwaad** of **baie kwaad** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
9	"Johan gaan by sy maatjie se huis speel." a) "As jy Johan was, sou jy net **gelukkig** of **baie gelukkig** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
10	"Johan se ma het hom parkie toe gevat." a) "As jy Johan was, sou jy net **gelukkig** of **baie gelukkig** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
11	"Johan se boetie het Johan die skuld gegee vir iets wat Johan nie gedoen het nie." a) "As jy Johan was, sou jy net **kwaad**of **baie kwaad** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
12	"Johan kry nie sy mamma nie. Johan voel bang." a) "As jy Johan was, sou jy net **bang** of **baie bang** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
13	"Johan se maatjie speel met ander maatjies en wil nie meer met hom speel nie." a) "As jy Johan was, sou jy net **hartseer** of **baie hartseer** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
14	"Johan se maatjies het almal fietse. Johan het nie een nie." a) "As jy Johan was, sou jy net **hartseer** of **baie hartseer** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
15	"Pappa het vir Johan 'n nuwe speelding vir Kersfees gebring." a) "As jy Johan was, sou jy net **gelukkig** of **baie gelukkig** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
16	"Johan het sy R 5 verloor." a) "As jy Johan was, sou jy net **hartseer** of **baie hartseer** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
17	"Johan het die venster gebreek terwyl hy bal gespeel het." a) "As jy Johan was, sou jy net **bang** of **baie bang** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
18	"Johan se sussie het sy kryte verloor." a) "As jy Johan was, jy sou jy net **kwaad**of **baie kwaad** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
19	"Almal het vir Johan hande geklap nadat hy in die kerk gesing het." a) "As jy Johan was, sou jy net **gelukkig** of **baie gelukkig** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
20	"Johan het na skool huis toe gestap. Skielik het hy 'n groot, kwaai hond gesien." a) "As jy Johan was, sou jy net **bang** of **baie bang** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**

21	"Iemand het Johan se middagete gesteel." a) "As jy Johan was, sou jy net **kwaad**of **baie kwaad** gevoel het?" b)" Watter prentjie dink jy wys **(participant's answer at a)?"**
22	"'n Seun het Johan op die skouer geslaan." a) "As jy Johan was, sou jy net **kwaad**of **baie kwaad** gevoel het?" b) Watter prentjie dink jy wys **(kind se antwoord by a)**?
23	"Iemand het Johan se speelding gebreek." a) "As jy Johan was, sou jy net **kwaad**of **baie kwaad** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**
24	"Johan gaan fliek." a) "As jy Johan was, sou jy net **gelukkig** of **baie gelukkig** gevoel het?" b) "Watter prentjie dink jy wys **(participant's answer at a)?"**

APPENDIX W3
SEPEDI VERSION

The pre-tests for males and females are different and are presented below. The main test is the same for both genders and is therefore presented only once.

GIRLS; BASETSANE:
Dumela, leina la ka ke Lydia, yo ke mmane Magdel. Leina la gago ke mang?
O na le mengwaga ye me kae?
Le seka la tshwenyega ka taperecorder ke ya Magdel ya go theeletša.
Lehono re ya go bolelo le go theeletša setori. Mpotše mo, na ge mma a ka go khabara, o ikwa bjang ka mma go wag.
Bjale a re theeletše. Setori ye e bolela ka ga mosetsana le tšeo di mo diragalelago. O swanetše go nthuša go tšea sephetho ka ga maikutlo a mosetsana morago ga ditiragalo tše.

Story 1: HAPPY; **THABA/THABILE** (Gabotse; Thakgetše)
Read the story to the child and ask the question:
Ka letsatši le le ngwe, go be go na le mosetsana. Ka letsatši la gagwe la matswalo, o filwe popi ke batswadi ba gagwe. E be e le popi ye botse kudu.
O gopola gore mosetsana yo o ikwa bjang ka popi ye ntshwa ye botse ye?

a. If the child answers: thaba/thabile
answer: **Ee, o ikwa a thabile.**

b. If the child answers: gaboetše (thakgetše)
answer: **Ee, o ikwa a gaboetše. O be o tseba gore go na le lentšu le lengwe lago gaboetše. Lona ke thabile.**

c. If the child answers something else, say:
O nagana gore o motsetsana yo o (child's answer).
Keng seo bontshago gore (child's answer)?
Listen to the child's answer and say:
Le nna ke ikwa ke (child's answer).

O nagana gore o motsetsana yo o ile a ikwa bjang ka tiragelo ye? Theeletšang setori gape le mpotše gore mosetsana yo o ikwa a thabile goba (child's answer).

Ka letsatši la gagwe la matswalo, o filwe popi ke batswadi ba gagwe. E be e le popi ye botse kudu. O be a thabile goba a (child's answer)?

Story 2: SAD; **SWABA / SWABILE** (Bohloko)
Read the story to the child and ask the question:
Mantšiboa ao o ile a robala le popi yeo, a ya robala go le yona bolaong. Ge a tsoga, o hweditše popi yela e se gona. O gopola gore mosetsana yo o ile a ikwa bjang?

a. If the child answers: swaba / swabile.
answer: Ee, o ikwa a swaba / swabile.

b. If the child answers: bohloko.

answer: **Ee, o ikwa a bohloko. O be o tseba gore go na le lentšu le lengwe la go bohloko. Lona ke swaba / swabile.**

c. If the child answers something else, say:
O nagana gore o motsetsana yo o (child's answer).
Keng seo bontshago gore (child's answer)?
Listen to the child's answer and say:
Le nna ke ikwa ke (child's answer).

O nagana gore o motsetsana yo o ile a ikwa bjang ka tiragelo ye? Theeletšang setori gape le mpotše gore mosetsana yo o ikwa a le swaba / swabile goba (child's answer).

Mantšiboa ao o ile a robala le popi yeo, a ya robala go le yona bolaong. Ge a tsoga, o hweditše popi yela e se gona. O gopola gore mosetsana yo o ile a ikwa bjang? O be a swaba / swabile goba a kwele (child's answer)?

Story 3: AFRAID; **TŠHOGILE**
Read the story to the child and ask the question:
O ile a gopola go yo nyaka popi ya gagwe. O ile a tswalela lebati la kamora ya gagwe. Go be go le leswiswi, gape mosetsana yo o be a le tee. O ile a ya kamoreng ya sesi wa gagwe. O gopola gore, mosetsana o be o ikwa bjang ge a be a sepela leswiswing a le noši?

a. If the child answers: tšhogile
answer: **Ee, o ikwa a tšhogile.**

b. If the child answers something else, say:
O nagana gore o motsetsana yo o (child's answer).
Keng seo bontshago gore (child's answer)?
Listen to the child's answer and say:
Le nna ke ikwa ke (child's answer).

O nagana gore o motsetsana yo o ile a ikwa bjang ka tiragelo ye? Theeletšang setori gape le mpotše gore mosetsana yo o ikwa a tšhogile goba (child's answer).

O ile a gopola go yo nyaka popi ya gagwe. O ile a tswalela lebati la kamora ya gagwe. Go be go le leswiswi, gape mosetsana yo o be a le tee. O ile a ya kamoreng ya sesi wa gagwe. O gopola gore, mosetsana o be o ikwa bjang ge a be a sepela leswiswing a le noši? O be a tšhogile goba a (child's answer).

4. ANGRY; **KWATA** (Befetšwe)
O rile ge a bula lebati la kamora ya sesi wa gagwe yo mo nnyane, a hwetša popi ya gagwe. O gopola gore mosetsana yo o be o ikwa bjang?

a. If the child answers: kwata.
answer: **Ee, o ikwa a kwata.**

b. If the child answers: befetšwe.
answer: **Ee, o ikwa a befetšwe. O be o tseba gore go na le lentšu le lengwe befetšwe. Lona ke kwata.**

c. If the child answers something else, say:
O nagana gore o motsetsana yo o (child's answer).
Keng seo bontshago gore (child's answer)?
Listen to the child's answer and say:
Le nna ke ikwa ke (Child's answer).

O nagana gore o motsetsana yo o ile a ikwa bjang ka tiragelo ye? Theeletšang setori gape le mpotše gore mosetsana yo o ikwa a kwata goba (child's answer).

O rile ge a bula lebati la kamora yo sesi wa gagwe yo mo nnyane, a hwetša popi ya gagwe. O gopola gore mosetsana yo o be o ikwa bjang? O be a le kwata goba a le (child's answer).

If participant does not pass pre-test: **Ke a leboga gobane le nthušitše. O ka boela phapošeng.**

- Switch tape recorder off. Participant receives a sticker.

If participant passed the pre-test: **Bjale re ya go theeletša dikanegelo tše dingwe gape. Dikanegelo tše o di bolela ka ga Lebo le tšeo di diregago ka yena.**
Show participant the intensity scale. **O a bona setswantšo se se bonagala se**

- **tlwaelegile** (point to shortest bar) **tlwaelegile kudu** (point to longest bar). Open overlay file at overlay 1.
- Start with vignette 1.
- If participant is unable to answer, repeat the vignette once. Each vignette may only be repeated twice.
- Give feedback as indicated

BOYS; BAŠEMANYANA:
Dumela, leina la ka ke Lydia, yo ke mmane Magdel. Leina la gago ke mang?
O na le mengwaga ye me kae?
Le seka la tshwenyega ka taperecorder ke ya Magdel ya go theeletša.
Lehono re ya go bolelo le go theeletša setori. Mpotše mo, na ge mma a ka go khabara, o ikwa bjang ka mma go wag.
Bjale a re theeletše. Setori ye e bolela ka ga mosetsana le tšeo di mo diragalelago. O swanetše go nthuša go tšea sephetho ka ga maikutlo a mosetsana morago ga ditiragalo tše.

Story 1: HAPPY; **THABA/THABILE** (Gabotse; Thakgetše)
Read the story to the child and ask the question:
Ka letsatši le le ngwe, go be go na le mošemanyana. O ile a fiwa koloyana ka letšatši la gagwe la matswalo. E be e le koloi ye botse kudu.
O gopola gore mošemanyana yoo o ikwa bjang ka koloyana ye ntshwa?

a. If the child answers: thaba/thabile
answer: **Ee, o ikwa a thabile.**

b. If the child answers: gabotse (**t**hakgetše)

answer: **Ee, o ikwa a gabotse. O be o tseba gore go na le lentšu le lengwe lago gabotse. Lona ke thabile.**

c. If the child answers something else, say:
O nagana gore o m mošemanyana yo o (child's answer).
Keng seo bontshago gore (child's answer)?
Listen to the child's answer and say:
Le nna ke ikwa ke (child's answer).

O nagana gore o mošemanyana yo o ile a ikwa bjang ka tiragelo ye? Theeletšang setori gape le mpotše gore mošemanyana yo o ikwa a thabile goba (child's answer).

Ka letsatši le le ngwe, go be go na le mošemanyana. O ile a fiwa koloyana ka letšatši la gagwe la matswalo. E be e le koloi ye botse kudu.
O be a thabile goba a (child's answer)?

Story 2: SAD; **SWABA / SWABILE** (Bohloko Nyama/nyamile)
Read the story to the child and ask the question:
Mantšiboa ao, ge a ya go robala, a ya a rubala go le yona bolaong. Ge a tsoga, a hwetša, koloyana e se gona.
O gopola gore mošemanyana o ile a kwa bjang?

a. If the child answers: swaba / swabile.
answer: **Ee, o ikwa a swaba / swabile.**

b. If the child answers: bohloko.
answer: **Ee, o ikwa a bohloko. O be o tseba gore go na le lentšu le lengwe la go bohloko. Lona ke swaba / swabile.**

c. If the child answers something else, say:
O nagana gore o mošemanyana yo o (child's answer).
Keng seo bontshago gore (child's answer)?
Listen to the child's answer and say:
Le nna ke ikwa ke (child's answer).

O nagana gore o mošemanyana yo o ile a ikwa bjang ka tiragelo ye? Theeletšang setori gape le mpotše gore mošemanyana yo o ikwa a le swaba / swabile goba (child's answer).

Mantšiboa ao, ge a ya go robala, a ya a rubolo le yona bolaong. Ge a tsoga, a hwetša, koloyana e se gona. O gopola gore mošemanyana o ile a kwa bjang? O be a (child's answer) goba a kwele swaba / swabile?

Story 3: AFRAID; **TŠHOGILE**
Read the story to the child and ask the question:
Yena o ile a gopola go yo nyaka koloyana. O ile a tswalela lebati la kamora ya gagwe. E be e le leswiswi gape a be o le tee. O ile a ya kamoreng ya buti wa gagwe.
O gopola gore o ile a ikwa bjang ge a be a sepela leswiwi a le tee?

a. If the child answers: tšhogile
answer: **Ee, o ikwa a tšhogile.**

b. If the child answers something else, say:
O nagana gore o mošemanyana yo o (child's answer).
Keng seo bontshago gore (child's answer)?
Listen to the child's answer and say:
Le nna ke ikwa ke (child's answer).

O nagana gore o mošemanyana yo o ile a ikwa bjang ka tiragelo ye? Theeletšang setori gape ie potše gore mošemanyana yo o ikwa a tšhogile goba (child's answer).

Yena o ile a gopola go yo nyaka koloyana. O ile a tswalela lebati la kamora ya gagwe. E be e le leswiswi gape o be o le tee. O ile a ya kamoreng ya buti wa gagwe. O gopola gore o ile a ikwa bjang ge a be a sepela leswiwi a le tee? O be a tšhogile goba a (child's answer).

4. ANGRY; **KWATA** (Befetšwe)
O rile ge a bula lebati la buti wa gagwe a hwetša koloyano. Buti wa gagwe o utswitše koloyana ya gagwe.
O gopola gore mošemanyana yoo o ilw a ikwa bjang?

a. If the child answers: kwata.
answer: **Ee, o ikwa a kwata.**

b. If the child answers: befetšwe.
answer: **Ee, o ikwa a befetšwe. O be o tseba gore go na le lentšu le lengwe befetšwe. Lona ke kwata.**

c. If the child answers something else, say:
O nagana gore o mošemanyana yo o (child's answer).
Keng seo bontshago gore (child's answer)?
Listen to the child's answer and say:
Le nna ke ikwa ke (child's answer).

O nagana gore o mošemanyana yo o ile a ikwa bjang ka tiragelo ye? Theeletšang setori gape le mpotše gore mošemanyana yo o ikwa a kwata goba (child's answer).

O rile ge a bula lebati la buti wa gagwe a hwetša koloyana. Buti wa gagwe o utswitše koloyana ya gagwe.
O gopola gore mošemanyana yoo o ilw a iile bjang?
O be a kwata goba a (child's answer).

If participant does not pass pre-test: **Ke a leboga gobane le nthušitše. O ka boela phapošeng.**

- Switch tape recorder off. Participant receives a sticker.

If participant passed the pre-test: **Bjale re ya go theeletša dikanegelo tše dingwe gape. Dikanegelo tše o di bolela ka ga Lebo le tšeo di diregago ka yena.**
Show participant the intensity scale. **O a bona setswantšo se se bonagala se**

- **tlwaelegile** (point to shortest bar) **tlwaelegile kudu** (point to longest bar). Open overlay file at overlay 1.
- Start with vignette 1.
- If participant is unable to answer, repeat the vignette once. Each vignette may only be repeated twice.
- Give feedback as indicated

1	Buti wa Lebo o robile paesekele ya Lebo. a) Ge nkabe o le Lebo, o be o tla kwa **bohloko** goba **bohloko kudu** na a? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(karabo ya a)**?
2	Lebo o timeditše kgwele ya gagwe. a) Ge nkabe o le Lebo, o be o tla kwa **bohloko** goba **bohloko kudu** na a? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(karabo ya a)**?
3	Lebo o raloka ka sebapadišane sa gagwe. a) Ge nkabe o le Lebo o be o tla ikwa o le **thaba** gobo **thaba kudu**? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(mo go karabo ya a)**?
4	Lebo o tee ka ntlong gape ke leswiswi gore a ka aba tee. a) Ge nkabe o le Lebo, o be o tla ikwa o **tšhogile** goba o **tšhogile kudu**? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(mo go karabo ya a)**?
5	Koko Lebo o hlokofetše. a) Ge nkabe o le Lebo, o be o tla kwa **bohloko** goba **bohloko kudu** na a? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(karabo ya a)**?
6	Go na le ledimo le le ntsho kua lefaufaung. a) Ge nkabe o le Lebo, o be o tla ikwa o **tšhogile** goba o **tšhogile kudu**? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(mo go karabo ya a)**?
7	Ga na le lehodu ka ntlong. a) Ge nkabe o le Lebo, o be o tla ikwa o **tšhogile** goba o **tšhogile kudu**? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(mo go karabo ya a)**?
8	Mosemane yo mo ngwe o tšeere dijo tša Lebo. a) Ge nkabe o le Lebo, o be o tla ikwa o **kwata** goba o **kwata kudu**? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(mo go karabo ya a)**?
9	Lebo o ya go raloka go mogwera wa gagwe. a) Genkabe o le Lebo o be o tla ikwa o le **thaba** goba **thaba kudu**? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(mo go karabo ya a)**?
10	Mmago Lebo o išitše Lebo phakeng. a) Ge nkabe o le Lebo o be o tla ikwa o le **thaba** gobo **thaba kudu**? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(mo go karabo ya a)**?
11	Buti wa Lebo o pharile Lebo ka molato, go seo Lebo a sego a se dira. . a) Ge nkabe o le Lebo, o be o tla ikwa o **kwata** goba o **kwata kudu**? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(mo go karabo ya a)**?
12	Lebo ga a humane mma goba papa wa gagwe. a) Ge nkabe o le Lebo, o be o tla ikwa o **tšhogile** goba o **tšhogile kudu**? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(mo go karabo ya a)**?
13	Mogwera wa Lebo o raloka le bangwera ba bangwe ebile ga a nyake go raloka le yena gape. a) Ge nkabe o le Lebo, o be o tla kwa **bohloko** goba **bohloko kudu** na a? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(karabo ya a)**?
14	Bagwera ba Lebo ba na le dipaesekele ka moka. Lebo ga a na yona. Lebo o kwa bohoko.

	a) Ge nkabe o le Lebo, o be o tla kwa **bohloko** goba **bohloko kudu** na a? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(karabo ya a)**?
15	Tate o tletše Lebo sebapadišane sa kresimose. a) Ge nkabe o le Lebo o be o tla ikwa o le **thaba** gobo **thaba kudu**? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(mo go karabo ya a)**?
16	Lebo o timeditše R5 (diranta tše hlano). a) Ge nkabe o le Lebo, o be o tla kwa **bohloko** goba **bohloko kudu** na a? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(karabo ya a)**?
17	Lebo o thubile lefasetere gae a raloka. a) Ge nkabe o le Lebo, o be o tla ikwa o **tšhogile** goba o **tšhogile kudu**? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(mo go karabo ya a)**?
18	Lebo o timeditše motaga wa gagwe. a) Ge nkabe o le Lebo, o be o tla ikwa o **kwata** goba o **kwata kudu**? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(mo go karabo ya a)**?
19	Batho ka moka ba phaphathetše Lebo matsogo, ka ge a opetše ka kerekeng. a) Ge nkabe o le Lebo o be o tla ikwa o le **thaba** gobo **thaba kudu**? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(mo go karabo ya a)**?
20	Ka morago ga sekolo, Lebo o ile gae ka maoto. O hlakane le mpya ye kgolo ya go tšhoša. a) Ge nkabe o le Lebo, o be o tla ikwa o **tšhogile** goba o **tšhogile kudu**? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(mo go karabo ya a)**?
21	Motho yo mongwe o utswitše dijo tša Lebo tša mosegare. a) Ge nkabe o le Lebo, o be o tla ikwa o **kwata** goba o **kwata kudu**? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(mo go karabo ya a)**?
22	Mosemane o bethile Lebo magetleng. a) Ge nkabe o le Lebo, o be o tla ikwa o **kwata** goba o **kwata kudu**? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(mo go karabo ya a)**?
23	Motho yo mongwe o thubile sebapadišane sa Lebo. a) Ge nkabe o le Lebo, o be o tla ikwa o **kwata** goba o **kwata kudu**? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(mo go karabo ya a)**?
24	Lebo o ya go boga filimi. a) Ge nkabe o le Lebo, o be o tla ikwa o le **thaba** goba **thaba kudu**? b) Ke seswantšho se fe se o gopolago gore se a bontšhwa **(mo go karabo ya a)**?

APPENDIX X

RATING FORMS USED BY INDEPENDANT RATERS

APPENDIX X1

AFRIKAANS VERSION

PROCEDURAL INTEGRITY CHECK

	AREA		
INTRODUCTION			
1	Researcher introduces herself, gives reason for tape recorder and explains reason for the interview - not to rate.		
PRE-ASSESSMENT			
4	Researcher / assistant presented the pre-test story to the participant as in protocol.		
	4.1. Does the participant understand the concept "happy" – **gelukkig**?	YES	NO
	4.2. Does the participant understand the concept "sad" – **hartseer** ?	YES	NO
	4.3. Does the participant understand the concept "afraid" – **bang**?	YES	NO
	4.4. Does the participant understand the concept "angry" – **kwaad**?	YES	NO
5	If participant were unable pass the pre-assessment, she was thanked and sent back to class – not to rate.		
MAIN TEST			
7	Instructions were given as per protocol.		
	7.1. If participant does not pass pre-test: **Dankie dat jy my gehelp het. Jy kan maar teruggaan klas toe.**	YES	NO
	7.2 If participant passed the pre-test: **Goed, nou gaan ons na nog stories luister. Hierdie stories gaan oor Sarie en goed wat met haar gebeur het.**	YES	NO
	7.3. **Sien jy, hierdie prentjie wys gewoon** (point to shortest bar) **en baie** (point to longest bar).	YES	NO
8	8.1. **Sarie se boetie het haar fiets gebreek. a) As jy Sarie was, sou jy net hartseer of baie hartseer gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.2. **Sarie het haar nuwe bal verloor. a) As jy Sarie was, sou jy net hartseer of baie hartseer gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.3. **Sarie speel met haar nuwe speelding. a) As jy Sarie was, sou jy net gelukkig of baie gelukkig gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO

	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.4. **Sarie is alleen in die huis en dit is donker om haar.** **a) As jy Sarie was, sou jy net bang of baie bang gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.5. **Sarie se ouma is dood.** **a) As jy Sarie was, sou jy net hartseer of baie hartseer gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.6. **Daar is 'n donderstorm met weerlig.** **a) As jy Sarie was, sou jy net bang of baie bang gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.7. **Daar is 'n dief in die huis.** **a) As jy Sarie was, sou jy net bang of baie bang gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.8. **'n Ander seun het Sarie se kos gevat.** **a) As jy Sarie was, sou jy net kwaad of baie kwaad gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.9. **Sarie gaan by haar maatjie se huis speel.** **a) As jy Sarie was, sou jy net gelukkig of baie gelukkig gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.10. **Sarie se ma het haar parkie toe gevat.** **a) As jy Sarie was, sou jy net gelukkig of baie gelukkig gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.11. **Sarie se boetie het Sarie die skuld gegee vir iets wat Sarie nie gedoen het nie.** **a) As jy Sarie was, sou jy net kwaadof baie kwaad gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.12. **Sarie kry nie haar mamma nie.** **a) As jy Sarie was, sou jy net bang of baie bang gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.13.	YES	NO

	Sarie se maatjie speel met ander maatjies en wil nie meer met haar speel nie. **a) As jy Sarie was, sou jy net hartseer of baie hartseer gevoel het?**		
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.14. **Sarie se maatjies het almal fietse. Sarie het nie een nie.** **a) As jy Sarie was, sou jy net hartseer of baie hartseer gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.15. **Pappa het vir Sarie 'n nuwe speelding vir Kersfees gebring.** **a) As jy Sarie was, sou jy net gelukkig of baie gelukkig gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.16. **Sarie het haar R 5 verloor.** **a) As jy Sarie was, sou jy net hartseer of baie hartseer gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.17. **Sarie het die venster gebreek terwyl sy bal gespeel het.** **a) As jy Sarie was, sou jy net bang of baie bang gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.18. **Sarie het haar kryte verloor.** **a) As jy Sarie was, sou jy net kwaadof baie kwaad gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.19. **Almal het vir Sarie hande geklap nadat sy in die kerk gesing het.** **a) As jy Sarie was, sou jy net gelukkig of baie gelukkig gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.20. **Sarie het na skool huis toe gestap. Skielik het sy 'n groot, kwaai hond gesien.** **a) As jy Sarie was, sou jy net bang of baie bang gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.21. **Iemand het Sarie se middagete gesteel.** **a) As jy Sarie was, sou jy net kwaadof baie kwaad gevoel het?**	YES	NO
	b) Watter prentjie dink jy wys (participant's answer at a)?	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO

	8.22. **<u>'n Seun het Sarie op die skouer geslaan.</u>** **<u>a) As jy Sarie was, sou jy net kwaadof baie kwaad gevoel het?</u>**	YES	NO
	<u>b) Watter prentjie dink jy wys (participant's answer at a)?</u>	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.23. **<u>Iemand het Sarie se speelding gebreek.</u>** **<u>a) As jy Sarie was, sou jy net kwaadof baie kwaad gevoel het?</u>**	YES	NO
	<u>b) Watter prentjie dink jy wys (participant's answer at a)?</u>	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.24. **<u>Sarie gaan fliek.</u>** **<u>a) As jy Sarie was, sou jy net gelukkig of baie gelukkig gevoel het?</u>**	YES	NO
	<u>b) Watter prentjie dink jy wys (participant's answer at a)?</u>	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
CLOSING			
9	At completion of task the participant was thanked and received a sticker.	YES	NO

APPENDIX X2

SEPEDI VERSION

PROCEDURAL INTEGRITY CHECK

	AREA		
INTRODUCTION			
1	Researcher introduces herself, gives reason for tape recorder and explains reason for the interview - not to rate.		
PRE-ASSESSMENT			
4	Researcher / assistant presented the pre-test story to the participant as in protocol.		
	4.1. Does the participant understand the concept "happy" – **thaba/thabile**?	YES	NO
	4.2. Does the participant understand the concept "sad" – **swaba/swabile**?	YES	NO
	4.3. Does the participant understand the concept "afraid" – **tšogile**?	YES	NO
	4.4. Does the participant understand the concept "angry" – **kwata**?	YES	NO
5	If participant were unable pass the pre-assessment, she was thanked and sent back to class – not to rate.		
MAIN TEST			
7	Instructions were given as per protocol.		
	7.1. If participant does not pass pre-test: **Ke a leboga gobane le nthušitše. O ka boela phapošeng.**	YES	NO
	7.2 If participant passed the pre-test: **Bjale re ya go theeletša dikanegelo tše dingwe gape. Dikanegelo tše o di bolela ka ga Lebo le tšeo di diregago ka yena.**	YES	NO
	7.3. **O a bona setswantšo se se bonagala se tlwaelegile** (point to shortest bar) **tlwaelegile kudu** (point to longest bar)	YES	NO
8	8.1. **Buti wa Lebo o robile paesekele ya Lebo.** **a) Ge nkabe o le Lebo, o be o tla kwa swaba / swabile goba swaba / swabile kudu na a?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.2. **Lebo o timeditše kgwele ya gagwe ye ntswa.** **a) Ge nkabe o le Lebo, o be o tla kwa swaba / swabile goba swaba / swabile kudu na a?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.3. **Lebo o raloka ka sebapadišane sa gagwe se se ntswa.** **a) Ge nkabe o le Lebo o be o tla ikwa o le thaba gobo thaba kudu?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.4. **Lebo o tee ka ntlong gape ke leswiswi gore a ka aba tee.** **a) Ge nkabe o le Lebo, o be o tla ikwa o tšhogile goba o tšhogile kudu?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO

	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.5. **Koko wa Lebo o hlokofetše.** **a) Ge nkabe o le Lebo, o be o tla kwa swaba / swabile goba swaba / swabile kudu na a?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.6. **Go na le ledimo le le ntsho la magadima.** **a) Ge nkabe o le Lebo, o be o tla ikwa o tšhogile goba o tšhogile kudu?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.7. **Ga na le lehodu ka ntlong.** **a) Ge nkabe o le Lebo, o be o tla ikwa o tšhogile goba o tšhogile kudu?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.8. **Mosemane yo mo ngwe o tšeere dijo tša Lebo.** **a) Ge nkabe o le Lebo, o be o tla ikwa o kwata goba o kwata kudu?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.9. **Lebo o ya go raloka go mogwera wa gagwe.** **a) Genkabe o le Lebo o be o tla ikwa o le thaba goba thaba kudu?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	Mmago Lebo o išitše Lebo phakeng. **a) Ge nkabe o le Lebo o be o tla ikwa o le thaba gobo thaba kudu?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.11. **Buti wa Lebo o pharile Lebo ka molato, go seo Lebo a sego a se dira.** **a) Ge nkabe o le Lebo, o be o tla ikwa o kwata goba o kwata kudu?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.12. **Lebo ga a humane mma wa gagwe.** **a) Ge nkabe o le Lebo, o be o tla ikwa o tšhogile goba o tšhogile kudu?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.13. **Mogwera wa Lebo o raloka le bangwera ba bangwe ebile ga a nyake go raloka le yena gape.** **a) Ge nkabe o le Lebo, o be o tla kwa swaba / swabile goba swaba /**	YES	NO

	swabile kudu na a?		
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.14. **Bagwera ba Lebo ba na le dipaesekele ka moka. Lebo ga a na yona.** **a) Ge nkabe o le Lebo, o be o tla kwa swaba / swabile goba swaba / swabile kudu na a?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.15. **Tate o tletše Lebo sebapadišane sa kresimose.** **a) Ge nkabe o le Lebo o be o tla ikwa o le thaba gobo thaba kudu?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.16. **Lebo o timeditše R5 (diranta tše hlano).** **a) Ge nkabe o le Lebo, o be o tla kwa swaba / swabile (bohloko) goba swaba / swabile (bohloko) kudu na a?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.17. **Lebo o thubile lefasetere gae a raloka.** **a) Ge nkabe o le Lebo, o be o tla ikwa o tšhogile goba o tšhogile kudu?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.18. **Lebo o timeditše metaga wa gagwe.** **a) Ge nkabe o le Lebo, o be o tla ikwa o kwata goba o kwata kudu?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.19. **Batho ka moka ba phaphathetše Lebo matsogo, ka ge a opetše ka kerekeng.** **a) Ge nkabe o le Lebo o be o tla ikwa o le thaba gobo thaba kudu?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.20. **Ka morago ga sekolo, Lebo o ile gae ka maoto. O bone le mpya ye kgolo ya go tšhoša.** **a) Ge nkabe o le Lebo, o be o tla ikwa o tšhogile goba o tšhogile kudu?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.21. **Motho yo mongwe o utswitše dijo tša Lebo tša mosegare.** **a) Ge nkabe o le Lebo, o be o tla ikwa o kwata goba o kwata kudu?**	YES	NO

	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.22. **Mosemane o bethile Lebo magetleng.** **a) Ge nkabe o le Lebo, o be o tla ikwa o kwata goba o kwata kudu?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.23. **Motho yo mongwe o thubile sebapadišane sa Lebo.** **a) Ge nkabe o le Lebo, o be o tla ikwa o kwata goba o kwata kudu?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
	8.24. **Lebo o ya go boga filimi.** **a) Ge nkabe o le Lebo, o be o tla ikwa o le thaba goba thaba kudu?**	YES	NO
	b) Ke seswantšho se fe seo o gopolago gore se a bontšhwa (mo go karabo ya a)**?**	YES	NO
	Participant was given sufficient time to answer (about 5 seconds).	YES	NO
CLOSING			
9	At completion of task the participant was thanked and received a sticker.	YES	NO

APPENDIX Y

TABELS PRESENTING EXPECTED AND UNEXPECTED SYMBOLS CHOSEN BY PARTICIPANTS TO REPRESENT BASIC EMOTIONS

Table 1 Expected and unexpected symbols selected by Afrikaans- and Sepedi-speaking participants to represent for happy

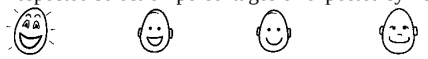
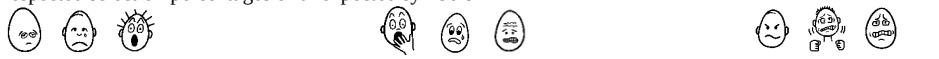
	Expected symbols	Unexpected symbols
Afrikaans speaking participants	Total selection percentage of expected symbols 93.18% Respected selection percentages of expected symbols  45.83% 21.21% 16.67% 9.47%	Total selection percentage of unexpected symbols 6.82% Respected selection percentages of unexpected symbols  1.14%, 1.14%, 1.14% 0.76%, 0.76%, 0.76% 0.38%, 0.38%, 0.38%
Sepedi speaking participants	Total percentage expected symbols 57.45% Respected selection percentages of expected symbols 22.18% 14.91% 13.45% 6.91%	Total percentage unexpected symbols 42.54% Respected selection percentages of unexpected symbols 4.73%, 4.73% 4.36% 4.00% 3.64% 3.27%, 3.27%, 3.27% 2.91%, 2.91%, 2.91%, 2.18%

Table 2 Expected and unexpected symbols selected by Afrikaans- and Sepedi-speaking participants to represent angry

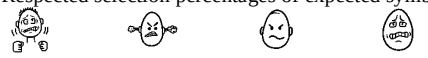
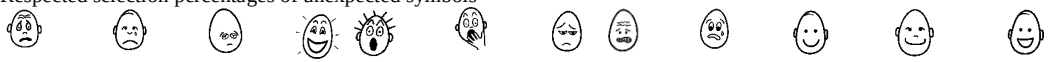
	Expected symbols	Unexpected symbols
Afrikaans speaking participants	Total selection percentage of expected symbols 84.79% Respected selection percentages of expected symbols 51.33% 20.91% 8.37% 4.18%	Total selection percentage of unexpected symbols 15.20% Respected selection percentages of unexpected symbols 3.04% 2.28% x 2 4.56 1.90% x 2 3.8% 1.52% 1.14% x 2 2.28%
Sepedi speaking participants	Total selection percentage of expected symbols 33.32% Respected selection percentages of expected symbols  12 8 4 16 10.87% 10.14% 6.88% 5.43%	Total selection percentage of unexpected symbols 66.68% Respected selection percentages of unexpected symbols  3 10 2 1; 11 7 6; 15 14 5 9 13 8.70% 7.97% 7.25% 6.16% x 2 12.32% 5.80% 5.07% x 2 11.4% 4.35% 3.99% 3.26% 2.90%

Table 3 Expected and unexpected symbols selected by Afrikaans- and Sepedi-speaking participants to represent afraid

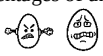
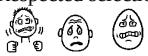
	Expected symbols				Unexpected symbols								
Afrikaans speaking participants	Total selection percentage of expected symbols 54.55% Respected selection percentages of expected symbols				Total selection percentage of unexpected symbols 45.47% Respected selection percentages of unexpected symbols								
	17.05%	15.53%	14.39%	7.58%	14.02%	7.58%	6.06%, 6.06%	3.03%	2.65	2.27	1.52	1.14%, 1.14%	
Sepedi speaking participants	Total selection percentage of expected symbols 29.09% Respected selection percentages of expected symbols				Total selection percentage of unexpected symbols 71.91% Respected selection percentages of unexpected symbols								
														
	10.55%	8.36%	7.27%	2.91%	10.18%	9.82%	7.27%, 7.27%	6.81%	6.18%	5.45%	4.73%, 4.73%	3.64%	2.91%	1.82%

Table 4 Expected and unexpected symbols selected by Afrikaans- and Sepedi-speaking participants to represent sad

	Expected symbols				Unexpected symbols								
Afrikaans speaking participants	Total selection percentage of expected symbols 52.65% Respected selection percentages of expected symbols				Total selection percentage of unexpected symbols 47.35% Respected selection percentages of unexpected symbols								
													
	20.08%	17.42%	9.85%	5.30%	10.23%, 10.23%, 10.23%			6.82%	3.03%, 3.03%		1.89%	0.76% , 0.76%	0.38%
Sepedi speaking participants	Total selection percentage of expected symbols 26.08% Respected selection percentages of expected symbols				Total selection percentage of unexpected symbols 73.92% Respected selection percentages of unexpected symbols								
	7.97%	6.88%	6.52%	4.71%	9.78%	8.70%	7.97%	7.16%	6.52% , 6.52%	6.16%	5.80%	5.07%	3.99%	2.90% , 2.90%