The Role of Morphosyntax and Oral Narrative
in the Differential Diagnosis of Specific Language
Impairment

Submitted for the degree of Doctor of Philosophy

by

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# TABLE OF CONTENTS

ABSTRACT xii  
DECLARATION xiv  
ACKNOWLEDGEMENTS xv  
PUBLICATIONS xvii  
GLOSSARY xviii  

## CHAPTER 1: DIAGNOSTIC ISSUES FOR SPECIFIC AND NON-SPECIFIC LANGUAGE IMPAIRMENT 1

### Introduction 1  

### SLI as a Diagnostic Category 3  
- Purpose for a Differential Diagnosis of SLI 3  
- A Psychometric Model 4  

### Assumptions about SLI and their Impact on Diagnosis and Intervention 5  
- The Relationship between Cognition and Language (Assumption 1) 5  
  - Intelligence as a Single Property or Multiple Competencies 6  
  - Direction of Influence 6  
  - Summary 7  
- Potential for Development (Assumption 2) 7  
  - Use of Cognitive Referencing as a Prognostic Indicator 7  
  - Use of Cognitive Referencing for Determining Eligibility for Intervention 8  
  - Issues with Variation in Identification of Language Impairment 9  
  - Summary 11  
- Characteristics of SLI (Assumption 3) 11  
- Qualitative Differences (Assumption 4) 11  

### Heterogeneity 13  

### Explanations of SLI 14  
- Genetics 14  
- Neurological Accounts 15  
- Linguistic Deficit Accounts 16  
- Limited Processing Capacity Accounts 16  
- A Dynamic Interactional Model 18  
- Summary 19  

### LEVEL OF ANALYSIS 20  

### Research Aims 22
CHAPTER 2: THE ROLE OF MORPHOSYNTAX IN THE
DIAGNOSIS OF LANGUAGE IMPAIEMENT

Introduction

Morphosyntactic Accuracy in SLI

Age or MLU Referencing
Evidence from Age Peer Comparisons
Verb phrase errors
Noun phrase errors
Evidence from Language-matched Comparisons
Evidence for Verb Tense Omission as a Clinical Marker of SLI
Caution against Verb Tense as a Unique Clinical Marker of SLI
Difficulties beyond verb tense
Effective indicators of SLI
Alternative view of developmental patterns

General Language Measures and SLI

Verbal Productivity
Complexity

Morphosyntactic Features of NLI and Other Language Impairments

Non-specific Language Impairment
Language Impairments associated with Identified Aetiologies

Explanations for Morphosyntactic Deficits in Language Impairment

Linguistic Deficit Accounts
Grammatical rule deficits
Extended optional infinitive (EOI) account
Processing Capacity Accounts
Working memory accounts
Surface (low phonetic substance) account
Contributions to Explanation from Cross-linguistic, English as a Second Language and
Dialectic Studies

Summary

Hypotheses AND QUESTIONS

CHAPTER 3: THE ROLE OF ORAL NARRATIVE IN THE
DIFFERENTIAL DIAGNOSIS OF SLI

Introduction

Narrative Features of SLI

Narrative Structure
Framework for analysis
Specific language impairment
Character Introduction
CHAPTER 5: METHODOLOGY: ANALYSIS AND RELIABILITY

LINGUISTIC Analysis

Transcription

Morphosyntactic Coding and Analysis

Obligatory Contexts and Calculation of Accuracy

Morphology

Syntax and clause complexity

Narratives Coding and Analysis

Narrative components

Structural level

Organisational level

Key event and information scores

Character cohesion

Reliability

Statistical Analysis of group comparisons

Discriminant Function Analysis

Rationale

Analysis Procedure

Summary

CHAPTER 6: RESULTS: GROUP COMPARISONS

Number of Utterances

Morphosyntactic Characteristics

Obligatory Contexts

Grammatical Morpheme Accuracy

Variance and Distribution of Morpheme Accuracy

Summary

Utterance Complexity and Errors

Clausal Structure

Utterance Errors

Summary

Narrative Structure and Organisation

Structural Level

Organisation Level

Summary

Key Event and Information Scores

Character Cohesion

Adequacy

Adequacy of Cohesive Strategies

Summary
CHAPTER 7: DISCUSSION: GROUP COMPARISONS

Introduction

Process for Examination of the Results

Differentiation of SLI from NLI

Morphosyntax

Narrative

Differentiation and Identification of Language Impairment

Morphosyntax

Narrative

Summary

Differentiation of Delay or Disorder

Morphosyntax

Narrative

Implications

Summary

Differentiation of Developmental Differences

Morphosyntax

Narrative

Summary

Obligatory Contexts for Grammatical Morphemes

Summary

CHAPTER 8: RESULTS AND DISCUSSION: EFFECTIVENESS OF VARIABLES IN CLASSIFYING LANGUAGE IMPAIRMENT

Selection of variables

Individual variables

Combinations of variables

Combinations of Morphosyntactic Variables

Combinations of Narrative Variables

Combinations of Morphosyntactic and Narrative Variables

Diagnostic Effectiveness

The Benefits of Single or Multiple Variables

The Combined Roles of Morphosyntax and Oral Narrative

Summary
CHAPTER 9: DISCUSSION: IMPLICATIONS FOR DIFFERENTIAL DIAGNOSIS AND INTERVENTION

The role of non-verbal cognition

Explanations of LI
- Evidence for linguistic and processing capacity deficits
- Extended optional infinitive account
- Working and episodic memory
- Domain indexes
- Evidence for contributions from learning experience and maturation
- Summary

Unique clinical marker or universal vulnerability

Effective Measures for assessment and diagnosis
- Variability and Individual Differences
- Broad versus Narrow Measures
- Strength of Multiple Variable Assessment
- Progress over Time

Intervention

Limitations of the research
- Sample Selection and Size
- Reliability

SUMMARY

CHAPTER 10: CONCLUSION

Theoretical Implications

Importance of the Findings

Future Directions

APPENDICES

Appendix A: LITERATURE SUMMARY
Appendix B: BACKGROUND INFORMATION
Appendix C: LANGUAGE SAMPLE ELICITATION
Appendix D: CODING CONVENTIONS FOR MORPHOSYNTAX
Appendix E: CODING CONVENTIONS FOR NARRATIVE STRUCTURE
Appendix F: CODING CONVENTIONS FOR CONTENT
Appendix G: CODING CONVENTIONS FOR COHESION
Appendix H: STATISTICAL TABLES FOR RESULTS
Appendix I: DISCRIMINANT FUNCTION ANALYSIS
LIST OF TABLES

TABLE 2.1. SUMMARY OF STUDIES INVESTIGATING ACCURACY OF VERB PHRASE MORPHEMES 26

TABLE 2.2. SUMMARY OF STUDIES INVESTIGATING ACCURACY OF NOUN PHRASE MORPHEMES 27

TABLE 3.1 SUMMARY OF STUDIES INVESTIGATING ORAL NARRATIVE DEFICITS IN SLI 49

TABLE 4.1. PARTICIPANT AND GROUP CHARACTERISTICS: SHOWING MEANS, STANDARD DEVIATIONS AND RANGES FOR AGE, LANGUAGE AND NON-VERBAL COGNITIVE ABILITY RESULTS 68

TABLE 4.2. LANGUAGE DOMAIN INDEXES 72

TABLE 4.3. GROUP EFFECTS FOR LANGUAGE DOMAIN INDEXES 73

TABLE 4.4. GROUP EFFECTS AMONG LANGUAGE DOMAIN INDEXES 73

TABLE 4.5. DESCRIPTION OF SOCIO-ECONOMIC INDEXES FROM THE AUSTRALIAN BUREAU OF STATISTICS. 74

TABLE 4.6. MEDIAN SOCIO-ECONOMIC INDEXES FOR PARTICIPANTS’ PLACE OF RESIDENCE POSTCODE AREA (INTERQUARTILE RANGE IN BRACKETS) 74

TABLE 4.7. GROUP EFFECTS FOR SOCIO-ECONOMIC INDEXES 74

TABLE 5.1. SUMMARY OF ASPECTS OF NARRATIVE STRUCTURE ANALYSIS AND THEIR INTER-RELATIONSHIPS 89

TABLE 5.2. DEFINITION OF COHESIVE TIE ADEQUACY 92

TABLE 5.3. EXAMPLES OF ANAPHORIC, EXOPHORIC AND AMBIGUOUS REFERENCE IN CONTIGUOUS C-UNITS. 92

TABLE 5.4. PERCENTAGE OF AGREEMENT FOR TRANSCRIPTION AND CODING 94

TABLE 5.5. HOLM ADJUSTED $P$ VALUES FOR SIX GROUP COMPARISONS 95

TABLE 5.6. TYPES OF VARIABLES DERIVED FROM EACH SAMPLING CONTEXT 97

TABLE 6.1. NUMBER OF UTTERANCES 99

TABLE 6.2. GROUP EFFECTS FOR NUMBER OF UTTERANCES 99

TABLE 6.3. NUMBER OF PARTICIPANTS WITH MINIMUM OBLIGATORY CONTEXTS FOR COMPOSITE GRAMMATICAL MEASURES IN CONVERSATIONS AND NARRATIVES 100

TABLE 6.4. MEDIAN ACCURACY FOR GRAMMATICAL MORPHEME COMPOSITES IN CONVERSATIONS AND NARRATIVES 101

TABLE 6.5. GROUP EFFECTS FOR ACCURACY OF GRAMMATICAL MORPHEME COMPOSITES 101

TABLE 6.6. RANGE OF ACCURACY MEASURES FOR COMPOSITE GRAMMATICAL MEASURES IN PLAY CONVERSATIONS (EXPRESSED AS MINIMUM AND MAXIMUM PERCENTAGE CORRECT USE) 102

TABLE 6.7. PERCENTAGE OF PARTICIPANTS WITH HIGH ACCURACY LEVELS FOR GRAMMATICAL COMPOSITES (> 70%). 103
TABLE B-5. PAIRWISE COMPARISONS BETWEEN LANGUAGE DOMAIN INDEXES 169
TABLE B-6. PAIR-WISE COMPARISONS FOR SOCIO-ECONOMIC STATUS 170
TABLE C-1. TOYS FOR PLAY SESSIONS 171
TABLE C-2. FROG NARRATIVE PROMPTS: 177
TABLE C-3. CAT NARRATIVE PROMPTS 177
TABLE C-4. BACKGROUND INFORMATION SHEET 178
TABLE D-1. TRANSCRIPTION ENTRY CONVENTIONS 179
TABLE D-2. ADDITIONAL BOUND MORPHEME TRANSCRIPTION AND CODING CONVENTIONS 179
TABLE D-3. WORD LEVEL MORPHOSYNTACTIC CODING CONVENTIONS 180
TABLE D-4. UTTERANCE LEVEL MORPHOSYNTACTIC CODING CONVENTIONS 180
TABLE E-1. NON-GOAL DIRECTED NARRATIVE COMPONENTS 181
TABLE E-2. GOAL DIRECTED NARRATIVE COMPONENTS 182
TABLE E-3. NARRATIVE LEVELS AND DESCRIPTORS 185
TABLE E-4. NARRATIVE LEVEL DECISION TREE 186
TABLE F-1. INFORMATION SCORE GUIDELINES FOR FROG NARRATIVE 187
TABLE F-2. INFORMATION SCORING GUIDELINES FOR CAT NARRATIVE 189
TABLE F-3. KEY EVENT SCORE GUIDELINES FOR FROG NARRATIVE 192
TABLE F-4. KEY EVENT SCORE GUIDELINES FOR CAT NARRATIVE 192
TABLE G-1. CONVENTIONS FOR CODING COHESIVE DEVICES 193
TABLE G-2. ADEQUACY FOR TYPE OF COHESIVE TIE OPPORTUNITY 194
TABLE G-3. ACCEPTABLE ANIMAL NAMES FOR FROG NARRATIVES 195
TABLE H-1. PAIRWISE COMPARISONS FOR NUMBER OF UTTERANCES 196
TABLE H-2. MEDIAN NUMBER OF OBLIGATORY CONTEXTS (OCS) FOR GRAMMATICAL MORPHEME COMPOSITE MEASURES IN CONVERSATIONS AND NARRATIVES 196
TABLE H-3. PAIRWISE COMPARISONS OF ACCURACY FOR GRAMMATICAL MORPHEME COMPOSITE MEASURES IN CONVERSATIONS AND NARRATIVES 197
TABLE H-4. PAIRWISE COMPARISONS OF CLAUSAL COMPLEXITY MEASURES AND UTTERANCE ERRORS FOR CONVERSATIONS AND NARRATIVES 197
TABLE H-5. PAIR-WISE COMPARISONS FOR NARRATIVE STRUCTURAL AND ORGANISATION LEVEL AND KEY EVENT AND INFORMATION SCORES 198
TABLE H-6. MEDIAN NUMBER OF COHESIVE TIES PER C-UNIT (INTERQUARTILE RANGE IN BRACKETS) 198
TABLE H-7. PAIR-WISE COMPARISONS FOR ADEQUACY OF COHESIVE TIES 199
TABLE I-1. PERCENTAGES AND TOTAL NUMBER OF CHILDREN CORRECTLY CLASSIFIED FROM INDIVIDUAL CONVERSATION SAMPLE VARIABLES 200
TABLE I-2. PERCENTAGES AND TOTAL NUMBER OF CHILDREN CORRECTLY CLASSIFIED FROM INDIVIDUAL NARRATIVE SAMPLE VARIABLES 200
TABLE I-3 PERCENTAGES AND TOTAL NUMBER OF CHILDREN CORRECTLY CLASSIFIED FOR COMBINATIONS OF MORPHOSYNTACTIC VARIABLES FROM CONVERSATION AND COMBINED NARRATIVE SAMPLES 201
TABLE I-4. PERCENTAGES AND TOTAL NUMBER OF CHILDREN CORRECTLY
CLASSIFIED FROM COMBINATIONS OF NARRATIVE VARIABLES 201

TABLE I-5. PERCENTAGES AND TOTAL NUMBER OF CHILDREN CORRECTLY
CLASSIFIED FROM COMBINATIONS OF CONVERSATION SAMPLE VARIABLES AND
FROG NARRATIVE MEASURES 201

TABLE I-6. PERCENTAGES AND TOTAL NUMBER OF CHILDREN CORRECTLY
CLASSIFIED FROM COMBINATIONS OF CONVERSATION AND CAT NARRATIVE
CONTEXTS 202

TABLE I-7. PERCENTAGES AND TOTAL NUMBER OF CHILDREN CORRECTLY
CLASSIFIED FROM COMBINATIONS OF NARRATIVE SAMPLE VARIABLES
(INCLUSIVE OF BOTH FROG AND CAT STORIES). 202

TABLE I-8. PERCENTAGES AND TOTAL NUMBER OF CHILDREN CORRECTLY
CLASSIFIED FROM COMBINATIONS OF CONVERSATION SAMPLE VARIABLES AND
BOTH FROG AND CAT NARRATIVES 202

FIGURE C-1. FROG NARRATIVE PICTURES (FROG, WHERE ARE YOU? MAYER, 1969) 172

FIGURE C-2. CAT NARRATIVE STIMULUS 176
ABSTRACT

Many researchers and clinicians describe a broad range of language features as characteristic of specific language impairment (SLI), while some researchers have attempted to define a narrower set of language features as clinical markers of SLI. However, how SLI is distinguished from other language impairments that fall outside the psychometric diagnostic criteria for SLI, based on language features is not clear. This thesis is concerned with determining which language features, if any, are capable of differentiating children with SLI from children with non-specific language impairment (NLI). Children with NLI, differ psychometrically from SLI only on their non-verbal cognitive abilities.

Conversation and oral narrative language samples, and verbal responses to probes, were collected from seventy five children aged 2½ to 6 years comprising four research groups: 21 participants with SLI, 13 participants with NLI, 21 age-matched participants with typically developing language and 20 younger language-matched participants with typically developing language. Matching for group comparisons required that the SLI and NLI groups had similar levels of language ability on a standardised assessment and mean length of utterance (MLU), which reduced the SLI group to 15 participants for these comparisons. The language-matched group was also matched to the SLI and NLI groups on MLU. A wide range of language variables from the conversation and narrative samples were analysed, covering the domains of general sample measures, morphosyntactic accuracy and complexity, narrative structure, information and cohesion.

The SLI and NLI groups performed similarly in all domains and could not be differentiated diagnostically on the measures examined. The most consistent group differences were for comparisons between the age-matched and language-matched groups, which demonstrated the effects of maturation and development. The language impairment (LI) and language-matched groups could not be differentiated on the majority of general language sample or morphosyntactic measures but the SLI group produced narratives that were structurally more complex and cohesive than the language-matched group.

Language tasks varied in their effectiveness in differentiating groups. More consistent group differences for the grammatical accuracy measures were obtained from the conversations than the narratives, and from composite measures compared to individual measures. Targeted elicitation tasks were more effective than the
conversations or narratives in producing consistent group differences for accuracy of individual verb tense morphemes. More consistent group differences for the narrative features were obtained from a wordless picture book than a single scene picture. A discriminant function analysis showed that LI was most effectively identified using a combination of key morphosyntactic measures from the conversations and key narrative feature measures from the two narratives.

The results have implications for diagnostic practices, intervention practices and theoretical constructs and explanations of SLI and NLI. In particular, a broad, holistic view of LI is supported, as an impairment that impacts on all domains of language which interact with each other and must be considered collectively, rather than as individual, splintered skills.
DECLARATION

I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

Signed: ___________________________ Date: ____________

Wendy M. Pearce
ACKNOWLEDGEMENTS

This thesis, begun in 1997, represents a long journey in a quest to gain a better understanding of the nature of language impairments in young children. Many people and experiences from my work in preschools and schools spanning more than 20 years have contributed to the development of my research questions and motivation to pursue them. Their questions, situations and insights have contributed as much to my understanding of the topic as the literature cited in this thesis, albeit from perhaps more practical, real-life clinical perspectives.

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PUBLICATIONS


**GLOSSARY**

<table>
<thead>
<tr>
<th>Abbreviation / Term</th>
<th>Definition</th>
</tr>
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<tbody>
<tr>
<td>3S</td>
<td>Third person singular morpheme; e.g., runs</td>
</tr>
<tr>
<td>AM</td>
<td>Age-matched control group</td>
</tr>
<tr>
<td>ART</td>
<td>Article; e.g., a, the</td>
</tr>
<tr>
<td>AUX</td>
<td>Auxiliary; e.g., He is running.</td>
</tr>
<tr>
<td>BE</td>
<td>Verb ‘to be’, including copula and auxiliary forms; e.g., am, is, are, was, were (excludes auxiliary DO and HAVE)</td>
</tr>
<tr>
<td>CAT</td>
<td>Narratives produced for the single scene picture depicting two children and a cat in a tree.</td>
</tr>
<tr>
<td>CELF-P</td>
<td>Clinical Evaluation of Language Fundamentals – Preschool (Wiig et al., 1993)</td>
</tr>
<tr>
<td>CON</td>
<td>Conversation samples</td>
</tr>
<tr>
<td>COP</td>
<td>Copula; e.g., He is funny.</td>
</tr>
<tr>
<td>DO</td>
<td>Verb auxiliary ‘do’ and its forms; e.g., Do you want it? He doesn’t want to.</td>
</tr>
<tr>
<td>ED</td>
<td>Regular past tense morpheme; e.g., He jumped.</td>
</tr>
<tr>
<td>EOI</td>
<td>Extended optional infinitive</td>
</tr>
<tr>
<td>ERRCOH</td>
<td>Percentage of erroneous cohesive ties</td>
</tr>
<tr>
<td>ESL</td>
<td>English as a second language</td>
</tr>
<tr>
<td>FRAG</td>
<td>Percentage of fragments (as percentage of all verbal utterances)</td>
</tr>
<tr>
<td>FROG</td>
<td>Narratives produced for the wordless picture book “Frog where are you?”</td>
</tr>
<tr>
<td>FTC</td>
<td>Finite tense composite – accuracy (percentage correct use) measure for the total of all finite tense morphemes; i.e., ED + 3S + AUX + COP</td>
</tr>
<tr>
<td>FTIC</td>
<td>Finite tense inflection composite; accuracy measure for finite tense inflections i.e., ED + 3S</td>
</tr>
<tr>
<td>GD</td>
<td>Goal directed</td>
</tr>
<tr>
<td>GEN</td>
<td>Possessive or genitive; e.g., John’s bike</td>
</tr>
<tr>
<td>HSLI</td>
<td>High specific language impairment; expressive percentile &gt; 5</td>
</tr>
<tr>
<td>INFO</td>
<td>Narrative information score percentage</td>
</tr>
<tr>
<td>ING</td>
<td>Continuous aspect morpheme ‘ing’; e.g., He is jumping.</td>
</tr>
<tr>
<td>IQ</td>
<td>Intelligence quotient</td>
</tr>
<tr>
<td>IQR</td>
<td>Interquartile range, a non-parametric measure of variance, describing the middle 50% of distribution, from the 25th to 75th percentiles</td>
</tr>
<tr>
<td>LC</td>
<td>Low non-verbal cognition, and normally developing language</td>
</tr>
<tr>
<td>LI</td>
<td>Language impairment</td>
</tr>
<tr>
<td>LM</td>
<td>Language-matched control group</td>
</tr>
<tr>
<td>MLU</td>
<td>Mean length of utterance</td>
</tr>
<tr>
<td>MOD</td>
<td>Modal; e.g., can, might, should</td>
</tr>
<tr>
<td>NAR</td>
<td>Narrative samples</td>
</tr>
<tr>
<td>NDW</td>
<td>Number of different words</td>
</tr>
<tr>
<td>NGD</td>
<td>Non-goal directed</td>
</tr>
<tr>
<td>NLI</td>
<td>Non-specific language impairment</td>
</tr>
<tr>
<td>NPC</td>
<td>Noun phrase composite – accuracy measure for the total of targeted noun phrase morphemes; i.e., ART + PLS + GEN</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
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<tr>
<td>--------------</td>
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</tr>
<tr>
<td>NPIC</td>
<td>Noun phrase inflection composite – accuracy measure for noun inflections; i.e., PLS + GEN</td>
</tr>
<tr>
<td>NTVC</td>
<td>Non-tense verb composite – accuracy measure for the total of targeted non-finite verb morphemes; i.e., ING + MOD</td>
</tr>
<tr>
<td>NVCA</td>
<td>Non-verbal cognitive ability</td>
</tr>
<tr>
<td>OC</td>
<td>Obligatory contexts</td>
</tr>
<tr>
<td>ORG</td>
<td>Narrative organisation level: non-goal directed, goal directed or elaborated</td>
</tr>
<tr>
<td>RCPM</td>
<td>Raven’s Coloured Progressive Matrices (Raven et al., 1995)</td>
</tr>
<tr>
<td>RDLS</td>
<td>Reynell Developmental Scales 3 (Edwards et al., 1997)</td>
</tr>
<tr>
<td>SALT</td>
<td>Systematic Analysis of Language Transcripts (computer software, Miller et al.)</td>
</tr>
<tr>
<td>SES</td>
<td>Socio-economic status</td>
</tr>
<tr>
<td>SLI</td>
<td>Specific language impairment</td>
</tr>
<tr>
<td>TDL</td>
<td>Typically developing language</td>
</tr>
<tr>
<td>TNW</td>
<td>Total number of words</td>
</tr>
<tr>
<td>WPB</td>
<td>Wordless picture book</td>
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