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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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 2 ½ 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

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GLOSSARY

Abbreviation / Term	*Definition*
3S	Third person singular morpheme; e.g., run**s**
AM	Age-matched control group
ART	Article; e.g., a, the
AUX	Auxiliary; e.g., He **is** running.
BE	Verb 'to be', including copula and auxiliary forms; e.g., am, is, are, was, were (excludes auxiliary DO and HAVE)
CAT	Narratives produced for the single scene picture depicting two children and a cat in a tree.
CELF-P	Clinical Evaluation of Language Fundamentals – Preschool (Wiig et al., 1993)
CON	Conversation samples
COP	Copula; e.g., He **is** funny.
DO	Verb auxiliary 'do' and its forms; e.g., **Do** you want it? He **does**n't want to.
ED	Regular past tense morpheme; e.g., He jump**ed**.
EOI	Extended optional infinitive
ERRCOH	Percentage of erroneous cohesive ties
ESL	English as a second language
FRAG	Percentage of fragments (as percentage of all verbal utterances)
FROG	Narratives produced for the wordless picture book "Frog where are you?"
FTC	Finite tense composite – accuracy (percentage correct use) measure for the total of all finite tense morphemes; i.e., ED + 3S + AUX + COP
FTIC	Finite tense inflection composite; accuracy measure for finite tense inflections i.e., ED + 3S
GD	Goal directed
GEN	Possessive or genitive; e.g., John**'s** bike
HSLI	High specific language impairment; expressive percentile > 5
INFO	Narrative information score percentage
ING	Continuous aspect morpheme 'ing'; e.g., He is jump**ing**.
IQ	Intelligence quotient
IQR	Interquartile range, a non-parametric measure of variance, describing the middle 50% of distribution, from the 25^{th} to 75^{th} percentiles
LC	Low non-verbal cognition, and normally developing language
LI	Language impairment
LM	Language-matched control group
MLU	Mean length of utterance
MOD	Modal; e.g., can, might, should
NAR	Narrative samples
NDW	Number of different words
NGD	Non-goal directed
NLI	Non-specific language impairment
NPC	Noun phrase composite – accuracy measure for the total of targeted noun phrase morphemes; i.e., ART + PLS + GEN

NPIC	Noun phrase inflection composite – accuracy measure for noun inflections; i.e., PLS + GEN
NTVC	Non-tense verb composite – accuracy measure for the total of targeted non-finite verb morphemes; i.e., ING + MOD
NVCA	Non-verbal cognitive ability
OC	Obligatory contexts
ORG	Narrative organisation level: non-goal directed, goal directed or elaborated
RCPM	Raven's Coloured Progressive Matrices (Raven et al., 1995)
RDLS	Reynell Developmental Scales 3 (Edwards et al., 1997)
SALT	Systematic Analysis of Language Transcripts (computer software, Miller et al.)
SES	Socio-economic status
SLI	Specific language impairment
TDL	Typically developing language
TNW	Total number of words
WPB	Wordless picture book