

**THE CHILD, THE PROCESS & THE  
EXPERTISE:  
IDENTIFICATION OF PRIORITY CHILDREN  
FROM PRESCHOOL REFERRALS TO  
SPEECH AND LANGUAGE THERAPY**

**A thesis submitted for the degree of Doctor of Philosophy**

**by**

**Susan Elizabeth Roulstone**

**Department of Computer Science  
Brunel University**

**September 1995**

## ABSTRACT

This study concerns the decisions and expertise of speech and language therapists (slts) working with preschool children, in particular, the selection and prioritisation of newly referred youngsters for therapy.

The literature review covers three aspects: the difficulties of identifying communication disorders in preschool children; the nature of speech & language therapy knowledge; the nature of the selection and prioritisation task. These three aspects provide the theoretical foundations of the study and gave rise to the selection of a multimethod and predominantly qualitative methodology.

Using a series of knowledge elicitation tasks, the selection and prioritisation decision was explored. A small group of expert slts participated in semistructured interviews, case history analyses, focus group discussions and card sorting exercises. The results are summarised under three headings: the child, the process and the expertise.

The study identifies areas considered significant in the discrimination of priority children. In particular, the co-consideration of the child's communication skills and the supporting communicative context emerged as the key categories. Features within these categories associated with priority and nonpriority children were identified.

The process emerged as one whereby slts collected and evaluated baseline descriptions of the child and context. As these findings accumulated, they were judged as to their diagnostic and prognostic significance, as evidence of progress and as potential causes for slt concern.

Substantial consensus was demonstrated between slts suggesting that the knowledge elicited emanated from a body of knowledge rather than being idiosyncratic. Even where variation occurred, patterns were evident, reflecting the possible existence of theories-of-action related to differing working contexts.

The results are presented as theories-of-action which underpin slts decisions. As such they will be of support to junior slts in their understanding of the selection and prioritisation task and to more experienced slts in making their own decisions explicit.

# CONTENTS

|                            |   |          |
|----------------------------|---|----------|
| List of figures and tables |   |          |
| Acknowledgements           |   |          |
| Dedication                 |   |          |
| List of acronyms           |   |          |
| <b>Chapter 1</b>           | <b>Introduction</b>   | <b>1</b> |
| <b>Part 1</b>              | <b>The Study Area and Development of Methodology</b>  |          |
| <b>Chapter 2</b>           | <b>Identification of Preschool Children for Speech and Language Therapy: Context and Complexities</b> |          |
| 2.0                        | Introduction  | 8        |
| 2.1                        | Resources   | 8        |
| 2.2                        | Changing National Health Services Ethic   | 9        |
| 2.3                        | Difficulties of early identification  | 9        |
| 2.3.1                      | Effectiveness of intervention   | 10       |
| 2.3.2                      | No 'gold standard'  | 12       |
| 2.3.3                      | Difficulties in obtaining representative samples  | 13       |
| 2.3.4                      | High recovery rate  | 14       |
| 2.3.5                      | Difficulties in identifying predictive indicators   | 15       |
| 2.3.5                      | Multifactorial; causation   | 15       |
| 2.4                        | Conclusions   | 15       |
| <b>Chapter 3</b>           | <b>The Nature of Expertise: Implications for Methodology</b>  |          |
| 3.0                        | Introduction  | 18       |
| 3.1                        | Characterising expertise  | 18       |
| 3.2                        | The nature of knowledge   | 19       |
| 3.2.1                      | Speech & language therapy - Science or not?   | 20       |
| 3.2.2                      | Underlying traditions of SLT  | 21       |
| 3.2.3                      | Parallels in Artificial Intelligence  | 21       |
| 3.2.4                      | Contextual influences on SLT knowledge  | 23       |
| 3.3                        | Tacit thinking  | 24       |
| 3.3.1                      | What is made explicit?  | 24       |
| 3.3.2                      | The nature of tacit knowledge   | 25       |
| 3.3.3                      | Turning know-how into know-what   | 25       |
| 3.4                        | Intuitive decisions   | 26       |
| 3.4.1                      | Factors influencing cognitive mode  | 27       |
| 3.5                        | Complex knowledge structures  | 29       |
| 3.6                        | The search for shared meanings and structures   | 33       |
| 3.7                        | The existence of expertise  | 33       |
| 3.7.1                      | Specialisation  | 33       |
| 3.7.2                      | Experience  | 34       |
| 3.7.3                      | New knowledge   | 34       |
| 3.7.4                      | Public acclaim  | 34       |
| 3.7.5                      | Professional structures   | 34       |
| 3.7.6                      | Superior judgements   | 35       |
| 3.7.7                      | Consensus   | 36       |
| 3.8                        | Evaluation by consensus   | 38       |

|  |    |
|--|----|
| 3.9 Conclusions  | 38 |
| <b>Chapter 4 The Nature of the Task: What is Already Known</b> |    |
| 4.0 Introduction   | 41 |
| 4.1 Selecting and prioritising children for SLT                | 41 |
| 4.2 Underlying models  | 41 |
| 4.3 Flow charts and decision trees                             | 43 |
| 4.4 Prioritisation guides                                      | 46 |
| 4.4.1 Short-cutting experts' decisions                         | 46 |
| 4.4.2 Explanations   | 48 |
| 4.5 Statistical analyses                                       | 49 |
| 4.6 A linear or iterative process?                             | 51 |
| 4.7 A competence model   | 52 |
| 4.7.1 The task analysis  | 52 |
| 4.7.2 Reasoning knowledge                                      | 54 |
| 4.7.3 Findings   | 54 |
| 4.7.4 Hypotheses   | 55 |
| 4.7.5 Hypothesis generation                                    | 56 |
| 4.7.6 Hypothesis testing                                       | 56 |
| 4.7.7 Hypothesis evaluation                                    | 56 |
| 4.7.8 Hypothesis reasoning                                     | 57 |
| 4.8 Conclusions  | 58 |
| <b>Chapter 5 Aims</b>  |    |
| 5.0 Introduction   | 61 |
| 5.1 Aims   | 61 |
| 5.2 Specific Questions   | 61 |
| 5.3 Theoretical issues   | 62 |
| <b>Chapter 6 Methodology</b>                                   |    |
| 6.0 Introduction   | 65 |
| 6.1 Methodological issues                                      | 65 |
| 6.1.1 Descriptive knowledge                                    | 65 |
| 6.1.2 Building a theoretical model                             | 65 |
| 6.1.3 Single context   | 66 |
| 6.1.4 A qualitative emphasis                                   | 66 |
| 6.1.5 Technical versus epistemological                         | 66 |
| 6.1.6 Multimethod  | 67 |
| 6.1.7 Triangulation  | 67 |
| 6.1.8 Grounded Theory  | 68 |
| 6.1.9 Respondent validation                                    | 71 |
| 6.1.10 Personal involvement                                    | 71 |
| 6.2 Knowledge elicitation issues                               | 72 |
| 6.2.1 Qualitative emphasis                                     | 72 |
| 6.2.2 Observation and discussion, concurrent or retrospective  | 72 |
| 6.2.3 Knowledge types and knowledge elicitation                | 73 |
| 6.2.4 Evaluation of techniques                                 | 73 |
| 6.3 Sample   | 75 |
| 6.3.1 Single versus multiple experts                           | 75 |
| 6.3.2 Sample size  | 75 |



|                            |    |
|----------------------------|----|
| 6.3.3 Selection of experts | 75 |
| 6.4 Consensus agreement    | 77 |
| 6.5 Conclusions            | 78 |

## **Part 2 The Field Work**

### **Chapter 7 Initial Data Collection: The Semistructured Interviews and Respondent Validation**

|  |    |
|--|----|
| 7.0 Introduction   | 80 |
| 7.1 Aims   | 80 |
| 7.2 Methodological considerations                                  | 81 |
| 7.2.1 Interviewing as a knowledge elicitation technique            | 81 |
| 7.2.2 Observation and immediate verbal reporting                   | 81 |
| 7.2.3 Personal Construct Theory                                    | 82 |
| 7.2.4 Researcher skills  | 83 |
| 7.3 Procedure  | 84 |
| 7.3.1 Sample   | 84 |
| 7.3.2 Questioning techniques: laddering                            | 84 |
| 7.3.3 Questioning techniques: pyramiding                           | 84 |
| 7.3.4 Reflective comments  | 84 |
| 7.3.5 Interview format   | 85 |
| 7.4 Results  | 86 |
| 7.4.1 Clinical factors   | 86 |
| 7.4.2 Nonclinical factors and management options                   | 87 |
| 7.4.3 Factors and their related constructs                         | 88 |
| 7.4.4 Priority and nonpriority factors                             | 89 |
| 7.5 Respondent validation  | 91 |
| 7.5.1 Respondent validation: 1 Transcripts                         | 91 |
| 7.5.2 Respondent validation: 2 Main factors questionnaire          | 91 |
| 7.5.3 Respondent validation: 3 Detailed description of factors     | 91 |
| 7.6 Respondent validation: summary of the main results             | 92 |
| 7.6.1 Coverage   | 92 |
| 7.6.2 Relevant items   | 92 |
| 7.6.3 Agreement  | 93 |
| 7.6.4 Priority or nonpriority                                      | 94 |
| 7.7 Discussion   | 94 |
| 7.7.1 A reflective process   | 94 |
| 7.7.2 Comprehensive coverage                                       | 95 |
| 7.7.3 Grounded in action   | 95 |
| 7.7.4 Parallels with children's communication disorders literature | 96 |
| 7.7.5 Context  | 97 |
| 7.7.6 Agreement and variation                                      | 97 |
| 7.8 Conclusions  | 98 |

### **Chapter 8 Analysis using Systemic Grammar Networks**

|                                     |     |
|-------------------------------------|-----|
| 8.0 Introduction                    | 100 |
| 8.1 The purpose of further analysis | 100 |
| 8.2 Systemic networks               | 101 |
| 8.2.1 Representing choice           | 101 |

|   |     |
|---|-----|
| 8.2.2 Choices in English greetings                                | 101 |
| 8.2.3 Adaptation to qualitative data analysis                     | 102 |
| 8.2.4 Key concepts and forms                                      | 103 |
| 8.3 The utility of SGNs for the representation of slts' decisions | 108 |
| 8.3.1 Application to communication disorders                      | 108 |
| 8.3.2 Relationships not lists                                     | 109 |
| 8.3.3 Delicacy  | 109 |
| 8.3.4 Facilitating respondent validation                          | 110 |
| 8.3.5 Bias  | 110 |
| 8.3.6 Representativeness  | 111 |
| 8.4 Development of 'Assessment' networks                          | 111 |
| 8.4.1 Network headings  | 112 |
| 8.4.2 Collation of relevant items                                 | 113 |
| 8.4.3 Analysis of variables                                       | 114 |
| 8.4.4 Final checks and glossary                                   | 115 |
| 8.5 The final networks  | 116 |
| 8.5.1 Characteristics of the priority child                       | 116 |
| 8.5.2 Characteristics of the nonpriority child                    | 118 |
| 8.5.3 Signs of change   | 120 |
| 8.5.4 Effectiveness of intervention                               | 121 |
| 8.5.5 Management options  | 123 |
| 8.6 Evaluation of analysis and systemic grammar networks          | 125 |
| 8.6.1 Real versus potential paradigms                             | 125 |
| 8.6.2 Professional as researcher                                  | 126 |
| 8.6.3 Ambiguity of terms  | 127 |
| 8.6.4 Varying levels of delicacy                                  | 128 |
| 8.6.5 Meshing the networks together                               | 128 |
| 8.6.6 Top-down or bottom-up                                       | 129 |
| 8.6.7 The competence model  | 130 |
| 8.7 Conclusions   | 130 |

## **Chapter 9 Evaluation of Systemic Grammar Networks**

|  |     |
|--|-----|
| 9.0 Introduction                                   | 133 |
| 9.1 Aims   | 133 |
| 9.2 Methodological considerations                  | 133 |
| 9.2.1 Consensus as validation                      | 133 |
| 9.2.1 The context for validation                   | 134 |
| 9.2.3 Quantitative component                       | 134 |
| 9.3 Specific questions                             | 134 |
| 9.4 Procedure                                      | 135 |
| 9.4.1 Sample                                       | 135 |
| 9.4.2 Case histories                               | 135 |
| 9.4.3 Systemic grammar networks as recording tools | 135 |
| 9.4.4 Debriefing discussions                       | 136 |
| 9.5 Results  | 136 |
| 9.5.1 Slts' views of systemic grammar networks     | 136 |
| 9.5.2 Agreement                                    | 137 |
| 9.6 Discussion                                     | 144 |
| 9.6.1 Interpretation of consensus                  | 144 |
| 9.6.2 Substantial consensus                        | 144 |

|   |     |
|---|-----|
| 9.6.3 Factors investigated  | 145 |
| 9.7 Results: Changes made to the structure and content of the systemic grammar networks | 146 |
| 9.7.1 Highlighting paradigms  | 146 |
| 9.7.2 Task order  | 146 |
| 9.7.3 Structural changes  | 147 |
| 9.7.4 Decision possibilities  | 149 |
| 9.7.5 Content changes   | 149 |
| 9.7.6 Individual networks   | 150 |
| 9.8 Summary of results  | 150 |
| 9.9 Discussion  | 151 |
| 9.9.1 Validation of the systemic grammar networks                                       | 151 |
| 9.9.2 Emergent relationships and categories   | 153 |
| 9.9.3 The process of the decision   | 154 |
| 9.10 Conclusions  | 155 |

## **Chapter 10 Focus Group Workshop**

|                                    |     |
|------------------------------------|-----|
| 10.0 Introduction                  | 158 |
| 10.1 Aims                          | 158 |
| 10.2 Methodological considerations | 158 |
| 10.2.1 Retrospective or concurrent | 158 |
| 10.2.2 Getting a picture           | 159 |
| 10.2.3 Real life or videotapes     | 160 |
| 10.2.4 Slit or researcher video    | 160 |
| 10.2.5 Individual or group         | 160 |
| 10.3 Procedure                     | 161 |
| 10.3.1 Videotaped assessments      | 161 |
| 10.3.2 Expert sample               | 162 |
| 10.3.3 Anchoring opinions          | 162 |
| 10.3.4 Group discussions           | 163 |
| 10.4 Results                       | 163 |
| 10.4.1 Confirmatory evidence       | 164 |
| 10.4.2 Differences between slts    | 165 |
| 10.4.3 Problem formulations        | 170 |
| 10.5 Discussion                    | 176 |
| 10.5.1 Confirmatory evidence       | 176 |
| 10.5.2 Differences between slts    | 177 |
| 10.5.3 Problem formulations        | 180 |
| 10.6 Conclusions                   | 183 |

## **Chapter 11 Card Sort of Communication Statements**

|                                 |     |
|---------------------------------|-----|
| 11.0 Introduction               | 186 |
| 11.1 Aims                       | 186 |
| 11.2 Background                 | 186 |
| 11.2.1 Primacy of communication | 186 |
| 11.2.2 Card sorting             | 187 |
| 11.3 Procedure                  | 188 |
| 11.3.1 Sample                   | 188 |
| 11.3.2 Items for sorting        | 188 |
| 11.3.3 Sorting the cards        | 189 |

|  |            |
|--|------------|
| 11.4 Results   | 190        |
| 11.4.1 Age and category  | 190        |
| 11.4.2 Slt differences   | 191        |
| 11.4.3 Developmental progression   | 192        |
| 11.5 Discussion  | 193        |
| 11.5.1 Theoretical models  | 193        |
| 11.5.2 Consensus   | 194        |
| 11.6 Conclusions   | 195        |
| <b>Chapter 12 The Child, the Process and the Expertise: the Final Analysis</b> |            |
| 12.0 Introduction  | 197        |
| 12.1 Methodology   | 197        |
| 12.1.1 Preservation of data  | 198        |
| 12.1.2 Negative instances  | 198        |
| 12.1.3 Bottom-up analyses  | 199        |
| 12.1.4 Significant research  | 199        |
| 12.2 A model of selection and prioritisation                                   | 199        |
| 12.2.1 Theories of action  | 200        |
| 12.2.2 The child   | 200        |
| 12.2.3 Assessment to management  | 202        |
| 12.2.4 The process   | 204        |
| 12.2.5 The expertise   | 208        |
| 12.2.6 ACT versus action   | 208        |
| 12.2.7 Interaction of theories-of-action                                       | 208        |
| 12.2.8 Theories within theories  | 208        |
| 12.3 Conclusions   | 210        |
| 12.3.1 Descriptive not prescriptive  | 210        |
| 12.3.2 Maps, mirrors and measures  | 211        |
| <b>References</b>  | <b>213</b> |
| <b>Appendix</b>  | <b>227</b> |

## List of figures and tables

### Figures

|   |     |
|---|-----|
| 4.1 First steps in a decision tree                                      | 44  |
| 4.2 Investigating language production                                   | 44  |
| 4.3 Referral acceptance and data collection                             | 45  |
| 4.4 Extract from decision tree  | 47  |
| 4.5 The diagnostic task   | 53  |
| 4.6 Findings components   | 55  |
| 4.7 Hypothesis generation   | 56  |
| 4.8 Hypothesis status   | 57  |
| 4.9 Relation between hypotheses and findings                            | 58  |
| 6.1 Triangulation   | 68  |
| 6.2 A diagrammatic representation of Grounded Theory                    | 69  |
| 6.3 Study methodology   | 70  |
| 6.4 Summary of data collection exercises                                | 77  |
| 7.1 Example of laddering  | 84  |
| 7.2 Example of pyramiding   | 84  |
| 7.3 Extract from interview showing mix of questioning                   | 85  |
| 7.4 Extract of slt's verbal report                                      | 86  |
| 7.5 Main clinical factors considered during the assessment              | 87  |
| 7.6 Examples of nonclinical factors affecting decisions                 | 88  |
| 7.7 Examples of management options considered                           | 88  |
| 7.8 Tracing a factor: progress  | 88  |
| 7.9 Tracing a factor: time and context of progress                      | 89  |
| 7.10 Significance of expressive output                                  | 89  |
| 7.11 Categories and factors considered                                  | 90  |
| 7.12 Important factors  | 93  |
| 7.13 Questionnaire items associated with priority/nonpriority decisions | 94  |
| 8.1 Greeting system in middle class British English                     | 102 |
| 8.2 Network showing the system 'Timing'                                 | 104 |
| 8.3 Network showing subsystems with BAR notation                        | 104 |
| 8.4 Network showing recursive BAR                                       | 105 |
| 8.5 Coding of historical aspects of a priority child                    | 105 |
| 8.6 Network showing increasing levels of delicacy                       | 106 |
| 8.7 Network showing restrictive entry condition                         | 107 |
| 8.8 Paradigms of 'level of concern                                      | 107 |
| 8.9 Analysis of potential effectiveness of intervention                 | 111 |
| 8.10 Network headings   | 113 |
| 8.11 Some signs of change   | 114 |
| 8.12 Dimensions considered within 'signs of change'                     | 115 |
| 8.13 Characteristics of a priority child                                | 117 |
| 8.14 Examples of items relating to the nonpriority child                | 118 |
| 8.15 Characteristics of a nonpriority child                             | 119 |
| 8.16 Signs of change  | 121 |
| 8.17 Items indicating effective intervention                            | 121 |
| 8.18 Effectiveness of intervention                                      | 122 |
| 8.19 Management options   | 124 |
| 8.20 Emergent categories  | 127 |

|  |     |     |
|--|-----|-----|
| 8.21 Integration of networks   | 128 |     |
| 8.22 Final network headings  |     | 129 |
| 8.23 SGNs as supertasks  | 130 |     |
| 9.1 High-low range of ratings  | 138 |     |
| 9.2 Categories coded by slts: child one                                  | 139 |     |
| 9.3 Categories coded by slts: child two                                  | 140 |     |
| 9.4 Categories coded by slts: child three                                | 140 |     |
| 9.5 Categories coded by slts: child four                                 | 141 |     |
| 9.6 Network headings: descending order of use                            | 143 |     |
| 9.7 Subcategories: descending order of use                               | 144 |     |
| 9.8 Nonselection at a BRA node   | 148 |     |
| 9.9 Multiple selection of BAR alternatives                               | 148 |     |
| 9.10 Cross track coding  | 149 |     |
| 10.1 Written response and SGN category                                   | 164 |     |
| 10.2 Instantiation of co-occurrence of child characteristics and context | 165 |     |
| 10.3 Slts' reactions after the second stop of the video                  | 168 |     |
| 10.4 Slts' reactions after the last stop of the video                    | 169 |     |
| 10.5 Management plans offered by four slts                               | 169 |     |
| 10.6 Descriptions and baseline behaviours                                | 171 |     |
| 10.7 Historical features   | 171 |     |
| 10.8 Evaluations of baseline behaviours                                  | 172 |     |
| 10.9 Evaluations of normality  | 172 |     |
| 10.10 Comparisons of behaviours within the child                         | 172 |     |
| 10.11 Evaluations of parents' behaviours and attitudes                   | 173 |     |
| 10.12 Diagnostic links   | 174 |     |
| 10.13 Parent reports linked to severe communication problems             | 174 |     |
| 10.14 Diagnostic statements  | 174 |     |
| 10.15 Statements of concern  | 175 |     |
| 10.16 Statements about progress  | 175 |     |
| 10.17 Statements of prognosis  | 175 |     |
| 10.18 Management targets   | 176 |     |
| 10.19 Reasoning associated with one baseline behaviour                   | 181 |     |
| 10.20 Summary of slts' problem formulations                              | 183 |     |
| 12.1 Areas under investigation   | 201 |     |
| 12.2 Management options  | 203 |     |
| 12.3 Problem formulations  | 204 |     |
| 12.4 The selection and prioritisation task                               | 206 |     |
| 12.5 ACTs and actions in slts' working context                           | 209 |     |

## Tables

|   |     |
|---|-----|
| 9.1 Percentage use of networks and key categories         | 143 |
| 9.2 Decision possibilities upheld                         | 149 |
| 11.1 Categories and number of items used in the card sort | 188 |
| 11.2 Examples of statements in each category              | 189 |
| 11.3 Percentage consensus                                 | 190 |
| 11.4 Categorisation of items by slt                       | 191 |
| 11.5 Number of items coded by category and age            | 192 |
| 11.6 Coding of 'limited range of two-word utterances'     | 193 |
| 12.1 Summary of consensus                                 | 207 |

## **ACKNOWLEDGEMENTS**

A number of young children and their parents submitted to the ordeal of the videotape during their first speech and language therapy assessment session. Those videotapes provided vital stimulus material for discussion workshops and I am grateful to the children and their parents for their willingness and interest in helping the project.

The expert speech & language therapists gave their time in thoughtful and painstaking consideration during the various knowledge elicitation exercises. The success of the fieldwork rested on their expertise and their openness and my sincere appreciation goes to all those therapists who contributed so enthusiastically.

Finally to Dr. Nancy Johnson, formerly of the Computer Science department at Brunel University, now at Christchurch College, Canterbury and to Dr. Pam Enderby at the Speech & Language Therapy Research Unit, Frenchay Hospital, Bristol, go special thanks for their calm encouragement and constructive support throughout the project and the writing of this thesis.

The project was initiated with the support of REMEDI and was completed under the auspices of a Department of Health Research Training Award.

**Dedicated**  
**to my**  
**Mum and Dad**



# LIST OF ACRONYMS

|      |  |
|------|--|
| slt  | speech and language therapist  |
| SLT  | speech and language therapy  |
| NHS  | National Health Service  |
| CSLT | College of Speech and Language Therapists  |
| wte  | whole time equivalents   |
| OM   | otitis media   |
| AI   | artificial intelligence  |
| ke   | knowledge elicitation  |
| GT   | Grounded Theory  |
| PCT  | Personal Construct Theory  |
| RV   | respondent validation  |
| SGN  | systemic grammar networks  |
| BRA  | SGN notation meaning bracket, from which terms should be considered simultaneously   |
| BAR  | SGN notation showing a vertical line with the main term to the right and its subdivisions to the left, meaning select one of the alternative terms |
| CON  | SGN notation showing a reverse bracket or bar meaning a restrictive entry condition.   |

# **CHAPTER ONE**

## **INTRODUCTION**

## **1.1. THE PROBLEM AREA**

This study focuses on the decisions expertise of speech and language therapists (slts), a small, mainly female profession concerned with the assessment, diagnosis and management of communication disorders in people of all ages. Children form the largest case group (MPAG, 1991, p.1) with the equivalent of over half of slts' time being spent with children. For most departments, early identification and provision of services for preschool children is an ideal to which they aspire. However, this aspiration attracts a certain scepticism because of difficulties predicting the natural course of communication disorders in young children and in demonstrating the effects of therapy. Generally and within the National health service, there is a growing demand for professional accountability; decisions made by health professionals are increasingly part of the public domain. Staffing pressures on speech & language therapy (SLT) departments require that scarce resources are targeted effectively so the first and arguably the most important decision a slt makes is whether or not a child will be taken on for therapy.

There is therefore, within such a context, a growing pressure on slts to be able to make such decisions reliably and explicitly.

## **1.2. SCOPE OF THE STUDY**

This first decision, the selection and prioritisation of preschool children for therapy at the initial assessment, is the concern of this thesis. Selection and prioritisation decisions continue to be made throughout the management of a child, whether discharge occurs after the first session or after fifty. However, this study considers only the first stage of that process, the initial assessment. Similar decisions are made for other client groups within SLT, so the study draws on literature from other fields, whilst retaining the preschool focus.

The methodology is informed by notions of expertise and techniques of knowledge elicitation. The thesis therefore draws together literature from the two disciplines of computer science and SLT. The two meet in this study in the application of

methodologies developed in computer science to the exploration of slts' decisions. The field of SLT is not unaccustomed to the borrowing of ideas; it is an eclectic discipline which regularly tests out the usefulness of concepts developed in allied disciplines to the field of communication disorders. For the author, whilst used to the eclecticism of SLT, the study area represented a new departure; understanding the theory of expertise, the process of knowledge elicitation and their application to SLT constituted one of the major challenges of the thesis.

### **1.3. AIMS**

The aim of the study was to develop a theoretical model of the selection and prioritisation process in order to shed light on the decision. It was envisaged that such an exposition might support the emergence of expertise in junior slts and reflective practice in more experienced slts.

### **1.4. CHAPTER GUIDE**

The thesis starts with an exploration of the problem area in chapter two. Issues arising from the current economic and political climate of slts working in the NHS are outlined. This is followed by an examination of the reasons why this particular decision, the identification of priority preschool children, is problematic. These two strands provided the motivation for the study, as discussed above, - a desire to develop explicit accountable explanations of decisions and a desire to gain more insight into how slts distinguished priority children.

Chapter three took the author into new fields: expertise and the epistemology of SLT. The nature of professional expertise is often said to be intuitive and implicit, the implication being that there is a limit to the extent to which that expertise can be laid open to scrutiny. This chapter explored the notion of expertise, what it entails and whether it could be captured in order to develop an appropriate methodological framework.

The discussion continues in chapter four with a more specific examination of the task of selection and prioritisation. As with the previous chapter, the discussion makes links between the domain specific literature of SLT and the broader but more detailed explorations of expert decision making from the field of expert systems.

Chapters two - four therefore constitute an extended literature review; they highlight the three underpinning threads which run through the study: the child, the expertise and the task. The notion of a priority child is shown to be a complex one in chapter two; the problems of capturing expertise are explored in chapter three; chapter four examines the nature of the task. By the end of the review, more specific questions had been developed; these, along with the overall aims of the study, are set out in chapter five. This chapter concludes with two tables showing the main questions and issues covered in the study and where they can be found in the text.

The need for a predominantly qualitative methodology had emerged from the literature review; it emphasised a social view of knowledge and required that the elicitation should identify shared meanings of slts. A multimethod structure was also viewed as fundamental in as far as it could provide opportunities for the confirmation and validation of emergent categories; it also increased the flexibility of the study enabling greater depth and breadth to the investigation. Chapter six discusses these methodological issues and also sets out some of the specific procedural parameters such as sample size and definitions of consensus used in the study. The chapter concludes with a 'methodology map' which is used subsequently at the beginning of each chapter to orientate the reader.

Part II contains the data collection and analysis reports. Slts with expertise in the field of children's communication disorders provided the initial data set via semistructured interviews. The procedures and preliminary analysis are described in chapter seven. Key factors which influence slts are identified from the interview data and then validated in a series of respondent validation exercises. These are summarised in the text and described in full in the appendix.

A more detailed analysis followed using the medium of systemic grammar networks (SGNs). This notational method and its origins in systemic linguistics are described in

chapter eight. The chapter explores their use as a qualitative data analysis tool and shows how they were used to analyse the initial data set. A detailed example of the development of an individual network is given in the appendix. The SGNs proved to be an economic way to represent categories and their inter-relationships; as such they were used not only as an analysis tool but also to display findings at various points throughout the text.

The interpretation of the initial data set, represented in the SGNs was then tested out with expert slts. Chapter nine describes the process by which this evaluation was carried out. The expert sample was increased in size and geographical diversity and more tightly focused in terms of domain: the slts were all currently working with preschool children in community clinics. These slts evaluated the SGNs in the context of real case data - their own and assigned case histories. The results were used to examine levels of consensus between slts as well as their views of the SGNs. Detailed evaluations and reworkings of individual networks are provided in the appendix.

The project then moved on to look at the process of the decision making. Chapter ten describes how new data was collected via a focus group. Slts from the previous stage of the project met together to discuss pre-recorded videotapes of initial assessments. The transcripts of their discussions along with their written comments, made as they viewed the videotapes form the data set. These were analysed in order to identify the problem formulations which seem to guide slts through the investigative process.

During the same workshop a card sorting exercise was carried out to investigate consensus. This is reported in chapter eleven. Levels of agreement between slts were investigated at various points throughout the study as a means of establishing the incoming data as indicative of a body of shared knowledge. The results presented in this chapter therefore contribute to that process and are used in the discussion of slts' expertise. Using statements about children's communication gathered from existing data, slts were asked to sort out those giving rise to concern at three different age levels: 2;0, 2;06 and 3;0 years.

The final section in chapter twelve draws together the results to present a theoretical exposition of the selection and prioritisation of preschool children for SLT. A number of

'theories of action' are postulated as the underpinning templates which inform slts' actions. The three threads of the thesis re-emerge to guide the discussion - the notion of the priority child, the insights gained into how the task is conducted and slts' expertise within this selection and prioritisation task. This chapter also includes a summary evaluation of the methodology used throughout the study.

## **1.5. CONCLUSION**

The study is presented in three parts: the first five chapters (2-6) provide the theoretical background and methodological framework of the study. The middle section (chapters 7-11) provides the action: the data collection, analysis and results. The final chapter picks up the three theoretical issues of the study once again in the summary of the theoretical description of the selection and prioritisation process. This shows the areas considered by slts as they assess a child and the problem formulations which are used to direct procedures. The points of consensus and variation between slts are identified, providing support for the existence of slts' expertise in the selection and prioritisation task.

## **1.6. STYLE**

A final rider to the introduction must make a comment about the style used throughout the thesis. Generally, the style follows academic tradition and uses third person throughout. Apart from the author, the other two main participating groups in the study were the experts slts and the children referred to in the selection and prioritisation process. In order to distinguish between these latter two easily, throughout the study they have been referred to as 'she' and 'he' respectively. This follows the prevailing prevalence of slts and children with communication disorders in that there are more female slts and more male children with communication disorders. This is a convenient shorthand and the author in no way means to undervalue male colleagues or the communication difficulties of girls.

**PART 1**  
**THE STUDY AREA**  
**& DEVELOPMENT**  
**OF METHODOLOGY**

**CHAPTER TWO**

**IDENTIFICATION OF**  
**PRESCHOOL CHILDREN FOR**  
**SPEECH & LANGUAGE THERAPY:**  
**CONTEXT AND COMPLEXITIES**



## **2.0. INTRODUCTION**

The role of a speech and language therapist (slt) is to assess, diagnose and manage the communication disorders of children and adults. This project focuses on their role with preschool children, in particular, the process of selection and prioritisation for intervention. This focus was selected because the decision is a complex one posing practical and theoretical difficulties to therapists working in the field. This chapter explores the complexities of the decision as a background rationale for the study.

First, however, in order to provide a fuller context for the study, the opening paragraphs will reflect upon the general economic and ideological climate in which this decision is made.

## **2.1. RESOURCES**

Speech and Language Therapy (SLT) is a profession under stress. As the main provider of services to children and adults with communication disorders, slts work mainly within the National Health Service (NHS). In 1989, there were 3,096 whole time equivalents (wte) in employment (MPAG, 1991, p.10), an equivalent of 5.5.wte per 100,000 total population. This is lower than that suggested in 1972 by the Quirk Report (DES, 1972) which recommended staffing establishments of 6 wte per 100,000. Quirk's recommendations are now generally acknowledged as out of date given changing demands and definitions of services. Enderby & Davies (1989) for example, estimated that 9.1 wte per 100,000 would be needed for children's services alone. At a national level therefore, it is likely that demands for services outstrip resources. However, the Manpower planning report suggested that, nationally there are "vast differences in the way speech therapy is used or perceived to be useful" (MPAG, 1991, p.27) resulting in considerable variation at planning levels in the specification of staffing levels. Staff turnover and loss of slts from the NHS, further compound the staffing pressures. In 1989, the Department of Health viewed the average working life of a slt as 3 years (MPAG, 1991, p.3); 10% of NHS posts were vacant (p.27) and the age range of this mostly female profession suggested that slts are leaving the profession at around age 30 years never to return. (p.19) A recent study reports that a quarter of slts who qualified 12 years ago no longer work as slts (RCSLT, 1995). By this age, slts have had considerable experience and post-qualification training so the profession is continually drained of its potential expertise.

## **2.2. CHANGING NHS ETHIC**

These resource problems have been paralleled by a changing ethic within the NHS. The reforms of the late 1980s have challenged professional autonomy and required a closer control of and accountability for clinical spending (Holliday, 1992, p.17). Van der Gaag (1993, p.10) also points out that consumers no longer accept that "a professional judgment is, by definition, correct". The emphasis on consumer empowerment along with the 'quality revolution' focuses attention on the processes by which outcomes are achieved (Van der Gaag, 1993, p.10). Professional competence and accountability are now in the public domain and we are all now "our brothers' keepers and.. having to answer to that responsibility" (Dunn & Hamilton, 1985).

The SLT professional body, the College of Speech & Language Therapists (CSLT) has kept pace with these pressures introducing professional standards (CSLT, 1991), guidelines for audit (Van der Gaag, 1993) and programmes to accredit services (CSLT, 1993). These measures focus, at a macro level, on the totality of service provision, determining overall professional standards. They provide policy guidance which in turn affects district and client level service decisions. However, they are also underpinned and informed by the day to day decision making of the slts who form the professional 'college'. The more highly developed and explicit a service is at grass roots, the more concrete, supportive and realistic can be the professional guidelines.

In conclusion, there is a pressing need to use resources effectively and to make explicit and evaluate the processes by which service decisions are made within SLT. It was in this climate that the author's concern over decision making arose; the selection and prioritisation of preschool children seemed particularly contentious. The following sections explore the difficulties associated with this decision.

## **2.3. DIFFICULTIES OF EARLY IDENTIFICATION**

The early identification of and intervention with children with communication disorders is accepted within SLT circles as a 'good thing'. But, however laudable this may seem, slts are faced with a number of practical and theoretical ambiguities when trying to implement this ideal. The nature of language development and of communication

disorders in the preschool child is complex and often controversial, making the initial assessment of a preschool child complex. The difficulties can be summarised as follows:

- \* there is little indication to show *specifically* which children will benefit from intervention.
- \* no 'gold standard' is available for the definition of language or communication difficulties.
- \* it is difficult to obtain representative samples of communication behaviours upon which to base a decision/diagnosis.
- \* the 'recovery' rate in preschoolers from early expressive language delay is high
- \* research has not clearly identified factors predictive of 'recovery' from early language delay.
- \* the literature on specific or pervasive language disorders suggests multifactorial causation and it is not often possible to identify definitive reasons for any delay.

Each of these difficulties will be discussed in turn.

### **2.3.1. Effectiveness of intervention**

Studies aiming to evaluate the efficacy of SLT intervention are faced with major methodological and ethical issues. Maturational and environmental influences on a child's development are impossible to exclude without a control group from whom therapy is withheld. Multiple baseline and ABA designs suffer from generalization effects or the knock-on effects of learning in an earlier period. As a result, there have been no studies which compare the long term outcome of children with communication disorders who have and have not received SLT.

There are studies which monitor the results of intervention but have no matched control group. For example, Huntley et.al. (1988) presented a follow-up of an intervention study. Sixty three children who had shown significant progress during a period of intervention at the Wolfson Centre were followed up five years later. The gains they had made during the intervention period had persisted after the intervention had ended. However, as the authors themselves acknowledge, since there is no comparator group, it is possible that such levels could have been achieved without intervention.

Telleen & Wren (1985) demonstrated significant gains in comprehension of prepositions with a group of 25 language delayed preschool children. They compared their rate of progress with a control group of children with normal language development and concluded that the progress made by the language delayed children was as a result of the intervention and not due to maturation or incidental learning. However, these positive results relate to a very specific language target taught over a short time period.

Snyder-McLean & McLean (1987) identified 30 studies of early intervention with children with a range of communication disorders, including stuttering, articulation disorders as well as those associated with other handicapping conditions. (Because it is an American paper, they include children up to 6 years of age - the mandatory school age, which would include children older than the usual view of preschool in the UK). They conclude without reservation that

"early intervention for communication disorders can be effective in modifying the course and impact of those disorders."

Detailed characteristics of the children, beyond their broad diagnostic grouping, were not identified. Their conclusion with regard to predictive indicators is therefore correspondingly broad. They recommend that intervention should proceed as soon as any disorder is identified and that the severity and pervasiveness of a child's disorder will be the main indicator of outcome. Finally the focus of intervention studies, and their definition of effectiveness are variable, making their applicability to service context difficult. In a well structured, service based study Gibbard (1994) reports results which do indicate that SLT was effective with preschool children. She compared the language outcomes in children during a waiting period without intervention with those whose parents attended a training group. Another parent group who received more general support and training provided a control for the Hawthorne effect; a fourth group included children receiving traditional 1:1 intervention. Children in the two treatment conditions (ie, 1:1 and specific parent training) made significantly more gains than the children in the other two conditions. The time period of the study was still relatively short so gains made by children during the study may have disappeared over a longer time scale.

Snyder-McLean & McLean (1987) note that efficacy studies take a relatively narrow view of intervention: they are aimed at specific communication skills within finite, and usually short, time periods. As they note, the notion of early intervention will normally have wider connotations than this. Hall for example, (1989, p.11) acknowledges that, even though an early diagnosis (and presumably intervention) will not lead necessarily to a reduction in the severity of a disability, intervention can help families and children to cope more effectively. As Fey (1986, p.1) acknowledges, there is little agreement about what actually constitutes effectiveness in SLT. Research into the effective treatment of communication disorders is in its infancy and only just beginning to cover these broader outcomes. (eg, Enderby, 1992) Hall (1989) concludes that whilst the *extent* (my italics) to which speech and language problems can be alleviated still needs further research,

"these children have a right to the most appropriate educational support currently available."

So slts have minimal research evidence on the likely effect of their intervention which could guide their selection of children.

### **2.3.2. No 'gold standard'**

The difficulty in identifying which children will benefit from intervention is further compounded by the lack of a standard definition by which a speech and language disorder is defined. There is no set point on the continuum of variability of language at which a child is said to have a speech and language disorder. (Lahey, 1990) In the developing child, variability is well documented, with for example, the Bristol language development studies showing as much as 24 months difference between the age at which 'normal' children acquired certain linguistic items. (Gutfreund et.al., 1989) Definitions of language disorder do not have specified cut-off points, and neither do the presenting disorders in children. Children do not present with neatly categorised disorders which fall conveniently into labelled boxes. The literature abounds with varying definitions of language delay/disorder. Researchers of prevalence, for example, vary in their definition of language disorder/delay. Beitchman et.al. (1986) select 1 standard deviation below the mean in the assessment used, as their cut-off point for the classification of a child as language delayed. Fundudis et.al. (1980) on the other hand used a single symptom definition in children of 36 months: "Failure to use 3 or more words strung together to make some sort of sense". Records & Tomblin (1994) found that slts identified children as language impaired if they had standard scores of below -1.0 to -1.2 whereas Whitehurst & Fischel (1994) recommend that a cut-off for clinical intervention should be -1.5 on standardised assessments. Chapman (1983) takes a position that intervention should be offered if children are "encountering difficulty in the communicative events that make up their world" and if it is thought that they will benefit from that intervention; he acknowledges that in accepting this definition one then has to go on to decide what counts as "difficulty" or a "solution". As Whitehurst & Fischel (1994) remark, it is not possible to say that one is right and another wrong, only that the cost-benefit matrix may vary depending on the criteria used for defining the point of intervention. Berger (1987) is critical of definitions such as these because of their openness to interpretation and he points out that even if there is normative data against which one can measure a child's

performance, the clinical significance of any discrepancy has yet to be agreed. As Fey (1986) comments

"Although there are probably no issues that are more fundamental to the needs of practising speech-language pathologists, deciding when to apply the diagnostic label 'language impaired' to a child is one of the most controversial issues in this field".

However, it is unlikely that a gold standard for preschool communication disorders will be established. Given the culture specific nature of language, the definition of communication disorders is also likely to be culture specific. So that for example, the rate of identification by parents will vary across communities. Eastwood summarises the problem:

"Communication disorders are by no means finite, identifiable or concrete entities but are defined by what we, as representatives of a culture, group or discipline consider them to be. Communication considered abnormal in one culture or context may not be seen to be so in another." (Eastwood, 1988)

### **2.3.3. Difficulty in obtaining representative samples.**

Because of the complexity of language and its variation according to context it is widely acknowledged that, in order to make a reasonable diagnostic decision, it is advisable to select a wide range of assessment procedures. Ideally these should sample the child's communicative behaviours in a range of contexts, with a particular emphasis on naturalistic contexts. However, the younger the child, the more difficult this process becomes. Formal/standardised assessments of children's language are often either not standardised below the age of 3 years or their reliability diminishes the younger the child. Naturalistic samples are therefore often preferred for younger children. However, preschool children have relatively less experience of wider social contexts and talking with unfamiliar adults. So a sample elicited within a health centre, even if elicited by the child's mother, is less likely to be representative of their usual communicative performance. If one opts to use adults familiar to the child, the elicited sample is unlikely to follow regular formats, making comparison of a child with his/her peers more difficult. The data on which slts base their decisions with respect to preschool children is therefore susceptible to interference.

#### **2.3.4. High 'recovery rate'**

Even if it is possible to identify or classify a young child as language delayed, it is difficult to be sure about the "stability of our findings". (Byers Brown, 1987) The so called 'recovery' rate in preschoolers from early expressive language delay is high. For example, in two follow-up studies of two year olds with expressive language delay, it was found that approximately 50% were within normal limits by three years of age. (Paul, Looney, & Dahm, 1991; Rescorla & Schwarz, 1990) However, these studies have small samples (25 and 21 respectively) and have tolerant cut-off points. Furthermore they do not rule out those children who received therapy. Because these two studies are in their early stages, it is not yet known how many more children will achieve normal communication abilities before school age. On the other hand, follow-up of the children who achieved normal oral skills by three years of age may find later difficulties with literacy and social-emotional development.

#### **2.3.5. Difficulties in identifying predictive factors**

Although 50% represents a relatively high 'recovery' rate, this does mean that the other 50% do not recover and continue to have expressive language difficulties. The problem therefore becomes one of identifying which children are at risk for continuing problems. Commentaries and reviews such as those by Rutter (1987) and by Whitehurst & Fischel (1994) stress severity and the role of concomitant features such as intellectual deficits, or complicating medical conditions such as epilepsy or hearing loss. Studies which seek to identify predictive factors for continuing speech and language problems have found it difficult to separate out factors meaningfully; the interaction of factors makes this a particularly difficult task. Paden et.al. (1987) found that no single factor successfully predicted children who were at risk for continuing phonological delay, but that a combination of several factors produced more reliable results. In particular, later acquisition of velar sounds, in combination with frequent or recurring otitis media with effusion and raised hearing thresholds at 500 Hertz were associated with children whose phonology was still delayed one year after the first assessments. Rescorla & Schwarz, (1990) at the end of the 2-3 year old phase of their longitudinal study of toddlers, were able to conclude only that the more severe the disorder the more likely the children were to have continuing difficulties. Paul et.al. (1991) hypothesized that children who had receptive and socialization deficits concomitant with their late talking would be at greater

risk for continued difficulties but found that even children without such concomitant deficits were at risk for persistent delay.

The studies mentioned so far look for patterns in the child's presentation that may be predictive of outcome. However, there is also a mass of literature which focuses on the role of environmental factors and the type of linguistic interaction available to the child. Paul & Elwood (1991) for example, compared the maternal linguistic input to toddlers with expressive language delay with that provided by mothers to normally developing toddlers. They concluded that the differences were unlikely to be causative of the delay. Whitehurst & Fischel (1994) report similar findings and suggest that the role might be one of maintaining the delay.

So whilst the literature provides some general guidance as to which children are most at risk, the identification of risk factors will not guarantee accurate prediction of persisting difficulties.

### **2.3.6. Multifactorial causation**

Similarly, the literature suggests that causation is multifactorial. (Rutter, 1987) For example, Bishop & Edmundson (1986) in their investigation of children with otitis media (OM), concluded that a history of OM only becomes significant

"if the child is already vulnerable because of a hazardous perinatal history",

and that this particular interaction of factors accounts for only a minority of cases.

During an initial assessment of a preschool child presenting with language delay, it is possible to investigate the existence, either in the present or past, of suspicious circumstances; however, it is not possible to know with certainty, how significant any features which are identified, might be in terms of their contribution to the delay. Therefore one cannot always use them directly or confidently to predict the progress of the child's language. In a young child the dilemma is increased by the relatively short period of developmental history to investigate.

## **2.4. CONCLUSIONS**

Slts seem to be in a no-win situation. There is a general pressure from a moral position, from literature recommendations and from public pressure to intervene early with



children who are late to talk. Choosing which children need intervention in order to progress however, is beset with difficulties: variable definitions within the professional field and potentially variable cultural definitions, an unknown natural history to the disorders and an unclear response to intervention, heterogeneity and multifactorial causation coupled with the practical difficulties of assessing preschool children interact to make this a complex decision.

Yet the context in which slts work demands not only efficiency in the allocation of resources, but also increasingly explicit justification of decisions. The literature too calls for a better characterisation of speech and language difficulties (Crystal, 1982; Hall, 1989), for research to show which children will benefit (Fey, 1986; Hall, 1989) and for clearer and more explicit definitions of the criteria and procedures used for identifying children with language disorders. (French, 1990; Lahey, 1990)

Fey's words summarise the position:

"We simply do not have enough information about language impaired children to know precisely who should receive treatment, how it should be administered and when it should begin, to be optimally effective." (Fey 1986)

This study started as a professional's response to that dilemma. It has taken the author on a journey that has progressed beyond the immediate practicalities and observable behaviours of slts and beyond the presenting symptoms of the children to an exploration of the underlying knowledge that informs these decisions.

## **CHAPTER THREE**

### **THE NATURE OF EXPERTISE:**

### **IMPLICATIONS FOR METHODOLOGY**

### **3.0. INTRODUCTION**

The motivation for this study was to provide support for speech & language therapists (slts) in this difficult decision. Given the context and complexities, it was felt that a more explicit description of the components of the decision would enable slts to justify and standardise more easily their selection and prioritisation decisions. The focus of this study therefore homed in on the insights and practices of experienced slts in order to generate this description. The underlying assumptions were first, that slts who work regularly in this field develop expertise in this area of decision making; secondly, that their expertise, whether consciously held or not, could somehow be tapped. Their knowledge could then be archived for slts working in this area in the form of a descriptive model which would be used as a comparator for their own practice.

It was therefore necessary to explore the nature of expertise in general and, more specifically, the nature of the decision-making task being undertaken in order to understand the study task and to develop an appropriate methodology. This chapter takes the broader view and examines expertise; the nature of the decision making task will be examined in the next chapter.

The literature on expertise in all its various aspects ranges widely and often focuses on specific disciplines or tasks as diverse as chess players and fighter pilots (Chase & Simon, 1973; Schvaneveldt et.al., 1985), psychiatric diagnosis and physics problems (Chie et.al., 1981; Kolodner, 1983). A full literature review is therefore inappropriate to the needs of this study; instead the literature has been reviewed with two issues in mind and key texts which illuminate them have been identified. The two issues are:

- i) the selection of an appropriate methodology both in terms of eliciting data and of finding ways to analyse the results.
- ii) the evaluation of the data and results as indicative of expertise.

### **3.1. CHARACTERISING EXPERTISE**

Before moving on to review the literature for the purposes of identifying methodological implications, a brief characterisation of expertise is needed.

Expertise is a complex confluence of knowledge and skills. Knowledge, acquired through experience in a particular domain, is organised in order to be useful to the practice context of the expert, who can then apply that knowledge to everyday practice, novel and complex problems with skill, in a way that differentiates them from their novitiate colleagues. So for example, the professional strength of slts is seen as their

"ability to apply simple interaction skills in a way that is informed by underlying theoretical knowledge. The theory is general and needs to be applied selectively so it is the analysis, synthesis and problem identification and solution, application and evaluation which enables good practice and requires the highest level of intellectual functioning."  
(Stengelhofen, 1986)

Research has revealed a number of differences between experts and novices in their performance which are used in the literature to reflect upon the underlying cognitive differences and the acquisition of expertise. Selected pieces of this research appear in the following sections. The review of the literature reveals a number of potential problems and issues for anyone seeking to make explicit the decisions of experts:

- \*debates about the nature of knowledge
- \*the thinking of experts is tacit;
- \*decision making by experts is often intuitive;
- \*knowledge structures of experts are complex and qualitatively different to those of a novice.

Each of these issues will now be examined.

### **3.2. THE NATURE OF KNOWLEDGE**

The task being undertaken within this project consists of eliciting knowledge from expert slts.

The methods chosen and the tools used to carry out such a task are in large part determined by one's view of the nature of knowledge. A discussion of the epistemology of speech & language therapy (SLT) in particular and the views held within the field of expert systems more generally is therefore a vital part of the process of discovering an appropriate methodology.

The nature of knowledge has exercised philosophers throughout the centuries and the various views and traditions have influenced all fields of academic endeavour, whether consciously or otherwise. SLT and its contributory disciplines, such as linguistics and psychology are no exception; the field of artificial intelligence (AI) and its developmental progression into expert systems is similarly influenced.

### 3.2.1. Speech & language therapy - science or not?

The main debate about the epistemology of SLT focuses on the scientific nature or otherwise of the profession. Ringel et.al. 1984 concluded that, although therapists carried all the appropriate characteristics of scientists (professional integrity, communication of ideas, objectivity), the field itself did not constitute a science. SLT, they suggested had developed no

"unifying, integrating or dominating paradigms"

which could provide a structure to clinical and research activities. Furthermore they argued that although the 'human communication sciences' apparently follow the same progress through scientific cycles of paradigm setting, investigation and reshaping, they do so only at second hand, responding to theoretical changes originating in other fields. Their article was followed by a stream of debate: could the field of communication disorders regard itself as a science; *should* it aspire to scientific status; is it important to be regarded as a separate science or as part of a broader 'behavioural science'; and finally, the debate focuses on the nature of science itself. (Bench, 1989 & 91; Ingham & Siegel, 1989; Panush, 1989; Prutting, Mentis & Nelson, 1989; Siegel & Ingham, 1987) In particular, the diverse roots of SLT, in what are traditionally viewed as sciences and humanities, continue to cause debate as to its proper place in the scheme of things, although the scientific approach is seen as central to the therapeutic process. Leahy (1990) argues that without the questioning and investigation involved in therapy, the "making sense" of communication disorders, the

"therapy enterprise would not only be dull - it would be dead".

The debate often seems to arise because of differences of opinion about the nature of science and an apparent desire for the status associated with undertakings of a scientific endeavour. Van der Gaag & Dormandy (1993) pick this up and argue for a broader view of science that encompasses imaginative and creative activity as well as the more traditional views of systematic hypothesis formulation and experimentation. To focus purely on this level of 'science or not' is to restrict the discussion of the epistemology of SLT inappropriately. Both Leahy (1990) and van der Gaag & Dormandy (1993) take a broader view and consider other influences.

### **3.2.2. Underlying traditions of SLT**

Leahy gives an overview of the various traditions underpinning SLT. The personal motivation of slts and the interpretation of the therapeutic relationship are presented as a balance between altruistic and individualistic motivations and between personal and professional roles. These are not static influences and change for the individual over time and according to context. Leahy presents the various models underpinning intervention. Early in the history of SLT and most powerful in their influence are the medical model and that of the behaviourists. Along with a psychoanalytic model from Freudian theory, these influences are seen to lead to a passive role for the client in the intervention process. More recent models have tended towards "interactionist" (Fey, 1986) or "facilitative" (Leahy, 1990) models which promote an active role in decision making by clients. These models will be explored further when considering the nature of the task in the next chapter (section 4.2).

Van der Gaag & Dormandy (1993) trace the "shifting paradigms" of science and point out parallels between psychology, linguistics and SLT. The move from behaviouristic to psychodynamic approaches and from syntactic to pragmatic approaches is mirrored in a move away from a client-focused or "intrinsic" interpretation of disorders to an "extrinsic" one which takes account of the clients' environment. Graddol et.al. (1994) also agree that, historically, study of language development has always reflected new developments in science (p.4)

### **3.2.3. Parallels in artificial intelligence (AI)**

This parallel can be taken a step further to the debate about the nature of knowledge itself. The trends in the scientific world, in psychology, linguistics and SLT reflect the move from the philosophical search for universals and primitives of knowledge to one which promotes the role of the social world in the development of knowledge.

In tracing the view of knowledge prevalent in the AI and experts systems field, Tomlinson & Johnson (1994) note the influence of the early traditions of rationalism and empiricism. Rationalism emphasizes abstract reasoning and the premise that a set of basic principles could be established which would explain nature, human behaviour etc. Empiricism on the other hand stresses the prime role of experience in the development of our concepts and knowledge, with the view that, at the extreme end of the empiricist camp, no a priori principles exist and knowledge is founded on our perceptions. What

both traditions have in common, it is suggested (Tomlinson & Johnson, 1994), is a search for certainty and the premise that knowledge fundamentals exist.

With these views underpinning the development of experts systems, the knowledge elicitation process becomes merely one which

"ferrets information out of the human" (Garg-Janardan & Salvendy, 1988).

Neale criticizes this as a mechanistic conception of the process of knowledge elicitation, which seems to see "knowledge as a substance to be quarried". (Neale, 1988) Following this view, the problems of knowledge elicitation, the 'bottleneck' as it is so widely called, has been attributed to the lack of ability of experts to make their knowledge explicit, or the absence of an appropriate technique (Compton & Jansen, 1990) rather than as a problem with the methodology per se.

Tomlinson & Johnson (1994) suggest instead that other views of the nature of knowledge are more insightful and useful and lead to the development of more appropriate knowledge elicitation (ke) methodologies. In particular the social nature of knowledge is emphasized. Collins (1990) for example, argues that the locus of knowledge does not reside within the individual but within the social group: we know what we know because through our shared daily lives, we develop shared meanings. Language knowledge is a prime example: what individuals know about language develops and emerges through their daily interactions. They build up an understanding (or knowledge) of the meaning of a word through interaction with other people of the same linguistic culture. So, the set of sounds used to make the word 'cup' came to be associated with a vessel for drinking only within the context of 'English', that is, where a group of people have developed a shared view of the meaning of those sounds.

Compton & Jansen (1990) also argue for the contextual nature of knowledge: knowledge exists only

"in relation to other knowledge and there is no absolute underlying knowledge on which the rest of knowledge is built".

Unlike the earlier traditions then, it is argued that there are no quantum of knowledge waiting to be discovered or perceived. Instead a community, such as SLT builds up its knowledge in relation to other knowledge. So that any apparent primitives of knowledge must be seen within the context in which they were elicited. It was indicated in the preceding chapter that the search for a 'gold standard' definition of a communication disorder is unlikely to be successful because of the contextual nature of language. The longed for 'core elements' of a communication disorder could only be accepted in the

light of the context in which they were developed, for example, in the context of x view of language development, y view of language, z view of the brain's function.

#### **3.2.4. Contextual influences on SLT knowledge**

Contextual influences on SLT knowledge are demonstrated in a series of studies by van der Gaag & Davies (92a & b; Davies & van der Gaag, 92 a & b). Through a process of Delphi, nominal group and survey techniques, they established a core knowledge base which was common to three groups of slts: those who work with children, adults with learning disabilities and adults with acquired/neurogenic disorders. In addition, each group identified domain specific items which reflected the specialist areas and contexts in which the experts worked, for example, education versus medical. Van der Gaag & Davies concluded therefore that the exact nature of the knowledge required by a slt is "context sensitive". A follow-up ethnographic study (van der Gaag & Davies, 94) of slts working with adults with learning disabilities confirmed this context sensitivity. A different level of granularity was also apparent, with the slts of the ethnographic study giving a greater level of detail about the skills involved and less about the knowledge involved than did the expert slts in the consultative study.

In terms of making explicit the knowledge of SLT then, one must be aware of the social nature of knowledge and its contextual influences. That context will include human characteristics such as individuality and creativity as well as the wider social and cultural context (Gill, 1986). Fey (1986, p.2) notes that each slt makes decisions regarding an individual child "on the basis of her own theory of language learning". Whilst that may have as its underpinnings well-known theories of learning such as behaviourism or interactionist views, the slt's own interpretation of that theory and how she combines it within a working context with other theories leads to "her own theory".

Such paradigmatic shifts and individual influences and the different views of the task, the client and the therapists' role that they bring with them, mean that the knowledge base of slts cannot be seen as a static core to be mined but must be understood in the context of the slts providing the data.



### **3.3. TACIT THINKING**

"Expertise is...cognitively complex and tacitly pragmatic". LaFrance (1990)

The tacit nature of expertise is generally acknowledged within the literature and seen as one of the key difficulties facing those who seek to make explicit the decisions involved in expert judgments. The debates are framed around two linked issues: what the experts provide when they are asked to make their knowledge explicit and the nature of tacit knowledge.

#### **3.3.1. What is made explicit?**

Nisbett & Wilson (1977) in a series of experiments showed that subjects were not always aware of the stimuli which affected their choices and decisions let alone being able to report accurately on them. For example, subjects were asked to choose items of clothing on the basis of quality. A pronounced position effect was found in that subjects preferred items to the right of display at a rate of 4:1, but when asked about the reasons for their choice, denied that position was influential. They concluded that people had no access to the cognitive/mediating processes involved in their decision making and further, might fail to report or deny the influence of significant stimuli. Instead, they argued, people referred to a priori causal theories established through cultural or individual experiences. For example, a respondent may say that they stopped at the traffic lights 'because the light began to change'; in giving this reason they may fail to report the primary stimuli to their action such as someone else's brake lights, but report the reasonable and apparently logical link, based on their previous experience. However, they concede that clinicians may well give accurate reports, because their judgements are based upon the developed and explicit knowledge of their professional subculture and because they have access to feedback on the accuracy of their judgement through the outcome of casework.

Ericsson & Simon (1984) agree that subjects will infer or generate information when asked to report retrospectively about their decisions and Chase & Simon, (1973) found that chess masters used prior knowledge to reconstruct a game rather than solely relying on their memory of the game. Ericsson & Simon (1984, p.30) argue however that concurrent reporting, where subjects are attending to the process can elicit accurate reporting on the processes involved.

Compton & Jansen (1990) suggest that elicited knowledge is not knowledge about how we reach a decision but a retrospective justification of that decision. Although the implication is usually that justifications are worthless or invalid, Compton & Jansen point

out that they seem to provide insight into the reasons for the decision. Such explanations and justifications are an integral part of professional practice. They form part of the communication between peers and between the professional and client (McDonnell, 1994, p.109) and are influential in the development of expertise since they require a reflective act. Elicited knowledge is regarded by Compton & Jansen as an attempt to "try and convey insight, to enable the other person to recognize, even partially and differentially, the intelligibility we have seen".

### **3.3.2. The nature of tacit knowledge**

Tacit knowledge concerns those situations where one knows what to do and can carry out a task appropriately without being able to make explicit the knowledge involved. This difference has been characterised in various ways, for example as the difference between 'know-how' and 'know-that'. Ellis (1992) explains: when we 'know-how' to do something, some internal representation enables us to consistently turn out the same complex pattern of behaviour. 'Know-that' is present or evident when we can turn that 'know-how' into a set of propositions.

Argyris & Schon (1974) describe this tacit knowledge as "theories" which underpin our actions as individuals or as professionals; these theories serve to control the behaviour of individuals. They suggest that improvements in professional action can be brought about by surfacing these theories and making them explicit. However they note this complexity and point out that if one tries to account for all behaviour through explicit renderings of 'theories-in-use', then the resultant explanations would be too complex to shed any light on the behaviour in question.

### **3.3.3. Turning know-how into know-that**

There are indeed problems associated with attempts to specify professional activity. If one sees it merely in terms of rules and standards and attempts to establish these for every aspect of practice, one is doomed to failure: as Collins, (1990) remarks, we could never specify all the rules necessary to cover every eventuality - "the words would ramify indefinitely" (p.93). Using the metaphor of soup and dumplings, Collins et.al. (1985) suggests that in any knowledge elicitation exercise, one can elicit the 'dumplings' of knowledge, that is, the facts and articulateable heuristics, but that the soup drains through the colander. The 'soup', he argues, is the context in which those facts and

heuristics are given meaning as well as all the "taken-for-granted" practices which make up the tacit knowledge of an expert.

It is clear therefore, that practitioners' actions cannot be described merely in terms of rules and behaviouristic simplifications of action. The sign of the expert is in knowing how to apply the rules and when to disregard them. If practitioners are forced through circumstance to stick to rules, then their performance may be deskilled. The union ploy of 'working to rule' exploits just this issue: that work is disrupted if practitioners are rule-bound. When faced with a new problem, a practitioner must *create* a new solution or apply an old one appropriately. It is suggested that such creativity requires the ability to analyse a situation and apply abstract representations or clinical "acts" (Johnson, 1983 in Fey, 1986, p.2) rather than being "stuck with formulas...hopeful imitators". Fey views the creative element as central to the SLT paradigm and one which marks out the slt as a "clinical researcher" as opposed to a "clinical technician". (Fey, 1986 p.28) The notion of ACTs is also discussed by Tomlinson & Johnson (1994) who draw attention to the difference between behaviour and 'ACTs' pointing out that a single ACT can be instantiated by many different behaviours and conversely that a single action may be the outcome of potentially many ACTs. A slt ACT of assessment of comprehension in a three year old may be instantiated by various standardised procedures, observation or informal tests depending on the slt's personal preferences, the observed performance of the child or what is available at the time.

Tomlinson & Johnson suggest that the process of knowledge elicitation should address not just the choices open to an expert, but the context under which one choice is preferable and the experts' explanations for their choice in order to get at the ACTs not merely behaviours. Similarly, Argyris & Schon (1974) suggest that we need models of our theories-in-use, general principles of how theories-in-use actually operate in different contexts of human behaviour.

In conclusion, the process of knowledge elicitation will be looking for explanations from experts, abstract representations of their judgment, models of the meanings underpinning their actions, rather than merely lists of facts and heuristics.

### **3.4. INTUITIVE DECISIONS**

The role of tacit knowledge is explored further in the consideration of decision making by experts which is often viewed as intuitive. There seems to be a tension in the literature between an acceptance of this as an integral part of expertise and the view that it is

inappropriate professional practice. Byng (1990) for example argues that, for as long as SLT knowledge about aphasia therapy remains implicit, therapy will be undervalued since its expertise also remains hidden. Ellis (1988) regards the intuitive state of professional knowledge as "unsatisfactory" and "incompatible with professional practice" (p.52). He argues that any

"aspiring professional (should) move beyond the habitual and the intuitive to a more rational and explicit state of knowledge".

These views seem representative of the current trend in the NHS towards increasing accountability and explicit description of services. The view presents a more open approach to professionalism than has been the case in years past and seeks to dispel the mystique which surrounds professional practice. Indeed a desire for explicitness was one of the motivating forces behind this study. However, the literature on expertise accepts the role of intuitive thinking in decision-making, not as a negative feature of professional practice but as the inevitable and adaptive response of the professional who has to deal with complex unstable and uncertain phenomena.

"Hunches and intuitions and even systematic illusions are the very core of expert decision making". (Dreyfus & Dreyfus, 1986)

### **3.4.1. Factors influencing cognitive mode**

However, it is not simply that experts make all their decisions intuitively and that novices do not: the cognitive mode employed is seen to depend on a number of factors:

- i) level of expertise of the practitioner;
- ii) task structure;
- iii) social and institutional context
- iv) the relative stability of the phenomena;
- v) the ideology of the practitioner

#### **i) level of expertise of the practitioner;**

Dreyfus & Dreyfus (1986) chart five steps in the progression from a novice to expert which show the change in decision making from analytic to intuitive; from context-free rule following, where the details of a situation do not impinge on the learner's action, only whether or not they carried out the task according to the rules, to situational judgements based on holistic understanding. The learner progresses through organized analytic problem solving eventually to a point where the process is fully internalised and the expert does not deliberately think about what to do but just

"does what normally works" (Dreyfus & Dreyfus, 1986)

**ii) task structure:**

Hamm (1988) concurs with a continuum from analytic to intuitive but considers additional variables: the complexity of the task, the ambiguity of the task content and the form in which the task is presented are all likely to affect the mode of cognition.

For example, the more cues that are available the more likely an intuitive mode of decision making will be selected; similarly if information can be predicted easily from other cues, an intuitive approach is more likely.

For example, a child who presents with common symptoms, where standard methods of intervention are available is likely to engender an intuitive mode of decision making.

**iii) social and institutional context:**

Hamm (1988) further suggests that the social and institutional context will also have some effect on the mode of cognition used.

For example, the level of detail routinely supplied in referrals, the available tools for assessment and diagnosis, expectations of colleagues as to the most appropriate mode to adopt, play a part in determining the prevalence of intuition versus analysis in decision making. A district which allows only 20 minutes per initial assessment suggests that intuitive modes of decision making are favoured since the task is structured in a way that leaves no time for an analytic approach.

**iv) the relative stability of the phenomena:**

Using different terminology but covering similar concepts, Schon (1983, 1987, 1988) discusses the differences between 'technical rationality' and 'professional artistry'. Technical rationality seems to parallel the analytic end of the spectrum since Schon describes it as the sort of problem solving that is

"made rigorous by the application of scientific theory". (Schon, 1988, p.60)

Professional artistry on the other hand is at the opposite end of the continuum, parallel to intuitive modes of thinking. Schon argues that in many professional practices technical rationality is not feasible since the phenomena are uncertain and unstable and much of the work consists of a

"swampy lowland where situations are confusing messes incapable of technical solution". (Schon, 1988, p.67)

The argument is therefore that certain types of professional practice are more amenable to technical rationality than others and that particularly those associated with client needs and social contexts are less stable and less certain.

**v) the ideology of the practitioner:**

Taking Schon's argument a little further suggests that the ideology of the practitioner is also implicated: if one maintains what Schon regards as "idealistic" scientific views that decisions are made following the rules of data gathering and hypothesis testing, that is technical rationality, then one will try to pursue an analytic mode of decision taking.

In daily practice, professional decision making happens somewhere along the continuum between analytic and intuitive (Hamm, 1988) and practitioners will slide between modes depending on the needs of the task and the constraints outlined above. It is suggested that particularly under conditions of "surprise" (Schon, 1988) that the practitioner can "turn thought back" on what has occurred and on the underlying mini-theories contained therein and reflect and analyse the decision. However, this is a qualitatively different process to the analysis and rule following of the novice as described by Dreyfus & Dreyfus above; a return to that type of rule following can actually inhibit performance: to return to a student's rules of case history taking is likely to inhibit the expert's ability to extract the relevant information and manage the situation in an expert way.

With respect to the knowledge elicitation process itself, the techniques may well affect the mode being adopted by the expert. Asking an expert to reflect on their decision-making is likely to influence them towards an analytic approach unless they are given insufficient information upon which to make judgments. The knowledge elicitation process affects the task structure as well as its social context.

### **3.5. COMPLEX KNOWLEDGE STRUCTURES**

The previous section has concluded that the way that experts analyse and tackle problems differs qualitatively from that of a novice. Their performances have been compared in attempts to make explicit the cognitive structures involved in the development of expertise. Simplistically, the results of most of the research can be summarised by saying that, through experience, knowledge acquired as a novice, becomes integrated and organised to provide easy access for the working practice of the individual. As Kolodner (1983) says

"experience serves to turn unrelated facts into expert knowledge".

So for example slts learn through experience how to relate the relatively unrelated facts of the contributing disciplines such as psychology, anatomy and linguistics, into cohesive

structures which facilitate their analysis and management of communication breakdown both in terms of the management of the individual client and the communication and co-operation with colleagues. (McDonnell, 1994, p.81). Kolodner (1983) goes on to point out that potentially, experts and novices may have the same semantic store; however, their greater experience means that their 'episodic' memory will be greater: through their occurrence and relevance within the same episode, facts become related in memory. Experienced slts will be familiar with the feeling that the semantic knowledge of the latest student is greater than their own, that they have access to knowledge which is new to the experienced therapist. Despite this, their experiential knowledge far surpasses that of the novice and enables a superior performance.

It is argued that knowledge acquired through experience is structured into problem prototypes. This is evidenced by comparing experts and novices as they tackle problems. For example Chase & Simon (1973) in their well-known and widely quoted study of chess players showed that a chess master, as he perceives a game and recalls the position of pieces, seems to "chunk" the information; furthermore, the chess master's chunks comprise more bits of information than do the novice's. As pointed out above, Chase & Simon reported that the chess master was using prior theories to 'construct' the position of pieces rather than recall: given that the first few 'chunks' had been recalled and set in position, the chess master would then attempt to place the rest in position by working out where they *should* go, given his knowledge of the game and where the existing pieces were placed.

Similarly Chi et.al. (1981) demonstrated the existence of *problem "categories" as the basis for representing physics problems*. A qualitative analysis of the categories emerging out of a card sort of physics problems showed that, although both novices and experts categorisation suggested that both groups had developed some kind of internal representation of the problem, novices attended to the surface features of the problems and categorized accordingly; experts on the other hand, sorted the problems according to the underlying physics principles; their categories were also related to ways of solving the problems. They also found that experts were able to extract more information from the original problem statements because of the derivations and inferences they were able to make; novices and experts however, were found to attend to similar features of the problem statement; that is, the novices have learned what to attend to but they have not yet built up associations which give those features the underlying meanings.

Lesgold et.al. (1988) also found that experts extracted different information to novices from a problem situation, this time diagnosing X-ray pictures. They concluded that because of the mental representations of the problems held by experts, they are led to

"see things differently" to the novice diagnostician. Skitmore (1985), tracing the decisions made in construction price forecasting, concluded that subjects with the greatest expertise consistently showed greater concern with maintaining an overview rather than a careful analysis of the project information.

A slightly different approach is taken by Schraagen (1993) who challenges the view that the superiority of experts is linked only to their domain specific knowledge. In an investigation of four groups of psychologists, he contrasted their ability to design experiments on taste. The four groups comprised beginners, intermediates and two groups of experts, one with expertise in experimental design (design experts), the other with specific expertise in sensory experiments (domain experts). He found significant differences between the two groups of experts in the quality of the solution, but not in their use of control strategies for solving the problem. Both groups of experts exerted significantly more control over their problem solving than did the beginners. He concluded that although the design experts did not have the domain knowledge to produce a correct solution, they had sufficient flexibility of expertise to employ general strategies that were of relevance to the task. There are one or two problems with this experiment in that one of the domain experts was used in defining the 'correct' solution, therefore producing a rather circular argument in terms of the correctness of the experts. Also, since both groups of experts were psychologists, the level at which they were able to apply their general strategies was still limited to within their own profession. Nevertheless, this is of significance within SLT since special expertise is regarded to exist within SLT as well as the profession itself regarding itself as expert. The studies quoted above by van der Gaag & Davies (1992, a& b; Davies & van der Gaag, a & b) demonstrated knowledge common to several groups within SLT as well as knowledge specific to each group.

In conclusion there appears to be a stage of problem analysis that occurs prior to problem solving which is facilitated by the development of mental representations, problem prototypes and schema by the expert. The analysis enables the expert to

"evoke a pertinent schema quickly" (Lesgold, 1988).

Schon (1988) argues that this kind of "problem setting" is particularly necessary when the phenomena involved are unstable, unique or involve potential value conflicts. In such contexts, problems are messy and troublesome and not "ready-to-solve" and so the professional themselves must decide what is significant and what they will attend to, therefore framing their own context. Schon suggests that the "theories-of-action" or



"theories-of-practice" would be used to frame this context. This seems to equate with the problem prototypes discussed above.

The literature also suggests that these problem prototypes are developed at ever more abstract levels, with the more concrete knowledge becoming subsumed within these structures. Adelson (1984) for example, within the domain of computer programming, found that although both experts and novices could deal with concrete questions about computer programmes, the novices were better than the experts at his level. The experts preferred a more abstract level of questioning. Adelson concluded that his experts, although they still had the concrete "know-how", that is, they knew how to carry out the concrete level of programming, organised their reflections at a more abstract level of "know-what", that is, they knew what to do and 'how' to do it was subsumed within this. That is, if experts organise their knowledge to be useful to them, their mental representations tell them what to do, but not how to do it. They still know how to do it because that knowledge is embedded within the relevant "know-what" representation.

A similar view is suggested by the work of Boshuizen & Schmidt (1992) who found that some types of knowledge become embedded within higher level propositions and representations. Within a medical diagnostic task, they found decreasing proportions of biomedical propositions were used with increasing levels of expertise. When these investigations progressed however, it was seen that, in fact, similar levels of concrete or semantic knowledge were available to the experts but that it had become "encapsulated" within more abstract structures. Indeed Boshuizen & Schmidt found that the experts' biomedical knowledge played its part in a tacit way, encapsulated within the doctors' clinical knowledge; if required to do so, the expert doctors could not only make their biomedical knowledge explicit, but showed greater levels of knowledge than the students.

In summary, through experience in a particular work context, experts' knowledge base becomes structured in a way that is useful to them; these structures enable them to attend to and recognize relevant features of the task, making those features more salient for them. As in the preceding section, this reinforces the view that certain aspects of an experts' knowledge will be difficult to access, since it lies embedded within higher levels of more abstract knowledge. It also points to the need to identify the way in which an experts' knowledge is structured. If the knowledge elicitation process seeks only to identify facts and heuristics, then the resulting model will not necessarily be useful to the practitioner, since it lacks the organisation for use that is typical of the expert.

### **3.6. THE SEARCH FOR SHARED MEANINGS**

The review of the literature on expertise identified a number of issues which have been explored for their implications for methodology. The result has not been a list of dos and don'ts for the methodology chapter. Instead, an increasing feel for the subject has been achieved and a position developed on the nature of SLT knowledge which can inform the development of appropriate methodologies. In short, the study will seek to identify underlying models or theories shared by slts and the way in which they structure their knowledge as appropriate to the practice context.

### **3.7. THE EXISTENCE OF EXPERTISE**

The second section of this chapter focuses on the issue of evaluating experts' responses. Given that the study focuses on expert slts, it is important to develop a view of the identification of expertise in order to select subjects for the study and to evaluate the data.

Within a profession, expertise is often defined in terms of specialisation, experience or new knowledge, and whilst all three might be important and in some cases necessary, on their own, they are insufficient to facilitate the progression towards expertise, which requires a critical and reflective approach by the practitioner.

#### **3.7.1. Specialisation**

Specialisation on its own without some facilitation towards expertise in that area can lead to deskilling through the elimination of surprise. Schon (1983, p.60) suggests that progressive specialisation eliminates many surprises, since the clientele become progressively more similar. He warns against the 'parochial narrowness of vision' that can develop in such circumstances leading to selective attention to what one expects to see and therefore fatal ignoring of other signs. In recognition of this CSLT (1991, p.276 & 278) differentiated between specialisation and specialists. Criteria for the latter included the acquisition of additional skills beyond core SLT subjects, additional postgraduate training and reading of relevance to the speciality. Although specialisation is defined largely by exclusion of the specialist criteria, there is the implicit recognition that one can restrict work to a particular context without necessarily becoming expert in that field.

### **3.7.2. Experience**

In a similar way, experience on its own cannot guarantee expertise: if a practitioner has remained in the same post for many years, the lack of challenge can lead to a nonreflective approach and the absence of development of expertise.

### **3.7.3. New knowledge**

Potentially new information, presented through a training course, can enhance or stimulate the development of expertise. Without due consideration for how it changes practice though, it may only be subsumed within existing knowledge structures and fail to bring about any change in performance. In order for new knowledge to be effectively integrated, existing theories of practice must first be examined in order to identify differences with the new. (Argyris & Schon, 1974, p.39)

Expert slts cannot therefore be identified on the level of specialisation, experience or their course attendance records alone. Three other views of how to identify expertise will now be examined:

- i) by public acclaim;
- ii) by professional structures;
- iii) by superior decisions/judg ment.

### **3.7.4. Public acclaim**

As LaFrance (1990) says, expertise is "frustratingly elusive" both for those who seek to explicate it and for those who seek expert advice. Expertise is certainly valued by the public and to some extent SLT expertise could be legitimised by the public, through a study of their views.

### **3.7.5. Professional structures**

However, the lack of choice within SLT makes this more difficult: clients often have restricted access to slts, would rarely have a choice and even less frequently have a choice of expertise levels. The absence of a publicly recognized expertise structure compounds this. Medical practitioners, for example, have a well recognized career structure from houseman through registrar to senior registrar and eventually consultant, with examinations giving them potential access to posts at the higher levels and

providing the public with a clear statement of the relative expertise of the person who is taking their case. There is no such universal track towards expertise in SLT. Furthermore, the route of specialisation, as indicated above, does not automatically facilitate expertise. The profession has recently begun to address this issue through a 'policy review forum' which recommended that the designation of "specific responsibility" should be assigned to posts requiring expertise and that this designation should be explicitly defined with particular reference to continued professional development. (Miller et.al. 1995)

### 3.7.6. Superior judgements

There is a general understanding that experts' behaviour is somehow better than that of the novice, that the decisions made are more likely to be right. However, there is usually little discussion of what constitutes a 'right' or 'better' decision. Indeed Johnson (1988) argues that in certain prediction tasks, in fields of uncertainty, experts do little better than novices and achieve significantly worse results than decision-making based on statistical modelling techniques. However, it may be under such circumstances that *different* decisions are being made. Voss & Post (1988) criticize Johnson's conclusions pointing out that within the social science field, it is impossible to define all the constraints at the outset of problem solving and that models which take account of only a few variables may not represent the problem adequately. Therefore, the decision models developed using statistical modelling techniques may refer to a qualitatively different decision.

The notion of accuracy within a clinical field is a difficult one since the decisions are usually heavily related to contextual influences and value judgments. For example, given multiple possible outcomes, experts and clients may vary in their evaluations of the most desirable. (Eddy, 1988) Experts can certainly make decisions faster and operate more quickly than novices (Glaser & Chi, 1988) and Teigen (1990) suggests that

"an expert can tell the truth with more exactitude than a less informed individual".

That is, within their own field experts can be more precise than a novice. Whether or not they are believed may be related to their confidence and the domain itself rather than their decision making performance per se. So for example, the more certain the knowledge domain, the more an expert is expected to give precise information; in a context of known uncertainty, a precise answer would be met with scepticism. Nonetheless the "preciseness paradox" means that although the more specific of two

statements is *less* likely to be true, it is *more* likely to be believed; for example, if two people tell the time as follows - i) nearly two o'clock; ii) three minutes to two; the first has a greater chance of being correct, but the latter is more likely to be believed. SLT can be regarded as an uncertain domain where for example, formal knowledge of which interventions work and which children will benefit is still in its infancy.

### 3.7.7. Consensus

Consensus is potentially another way of judging decisions. Voss & Post (1988) for example suggest that a solution is a good one if it is judged to be so by

"other members of the problem solving community"

As seen in previous sections, knowledge is seen as the shared meanings of a community. Indeed the development of consensus between members of a wide community is seen as one of the goals of scientific endeavour. (Ziman, 1978, p.3) Some would argue that consensus is difficult to achieve in a subject area such as SLT. Bench (1991) for example, argues that human considerations in the clinic situation and the fact that SLT embraces humanities as well as sciences may mean that

"a high consensus which embraces all of the field of speech and language pathology is a very long way off."

The work reported earlier by van der Gaag & Davies (1992 a&b; Davies & van der Gaag, 1992 a&b) supports this to some extent. Consensus was defined in their study as those items mentioned by more than 50% of participants at the delphi stage and regarded as essential by more than 50% in the survey. In the knowledge and attitude items, a set of items achieved consensus levels in all three specialist groups (slts working with children, with people with learning disabilities and with adults with acquired disorders). However, there were also items which achieved consensus only within the specialist group and some items which did not achieve consensus at all. Van der Gaag & Davies conclude that there do appear to be core knowledge areas regarded as essential to the competence of slts, but that there are also broader domains specific to particular working contexts.

Records & Tomblin (1994) addressed the question of agreement between speech-language pathologists working in North America. Case profiles containing test results of 92 children between 4 and 10 years of age, were rated by 27 speech pathologists in the USA and Canada. Raters were asked to say whether or not the child's language was

within normal limits, to rate the severity of an impairment if there was one (on a scale of 1-7) and to show their own level of confidence with their rating (on a scale of 1-7). Of the 92 profiles, 15 were replicated and intra-rater reliability on these was between 73% and 100% with an overall coefficient of 0.68. Using the generalised kappa statistic to examine the categorisation of cases and language impaired or not, they found that inter-rater agreement was significantly better than chance. Substantial agreement (defined as 75% or more of raters) was found on 35 cases and low consensus (between 75% and 25%) on a further 29 cases. Thresholds for allocation to the language impaired category varied considerably with one participant allocating 89% of the unique cases to this category and, at the other end of the spectrum, one participant identifying only 20% of cases as language impaired.

Agreement between raters was found to vary as a function of the severity rating and of the confidence of raters in their own decisions. That is, better consensus levels and higher confidence in raters occurred at extreme ends of the diagnostic spectrum with lower agreement and confidence in borderline cases.

So, consensus can be demonstrated between slts in terms of their perception of the knowledge and attitudes considered appropriate to their working context and also in terms of their diagnostic decisions. However, there is also clearly variation between slts; in these reports, variation according to working context and the severity of cases was associated with different knowledge bases in the van der Gaag & Davies study, and with differing thresholds for identification of language impairment in the Records & Tomblin study.

Meyer & Booker (1991, p.31) note that agreement between experts can disappear if the level of detail or granularity of the data is different. This is seen in the studies by van der Gaag & Davies (1992, a & b; 1994; Davies & van der Gaag, 1992, a & b). The study using consultative methods elicited a number of different items to the follow-up ethnographic study. Subjects in the ethnographic study were subsequently questioned about the discrepancies. It was concluded that items elicited during the consultative study were at a more general level to the more detailed and situated accounts of the ethnographic study. So that for example, knowledge of autism was cited during the consultative study as essential but not during the ethnographic study. However, none of the clients seen during the ethnographic study had autism and it was not of relevance to the clinic session. When questioned, all slts from the ethnographic study agreed that it was knowledge essential to their specialist working context.

### **3.8. EVALUATION BY CONSENSUS**

The identification of expertise both in terms of selecting slts for the study and evaluating data is by no means straightforward. The absence of universally recognised career paths and expertise structures within SLT and the difficulty of evaluating professional judgements mean that the problem has no easy solution. However, consensus between slts seems to be the way forward. Shared meanings and consensual knowledge were taken to be vital components of the view of experts' knowledge accepted here. Peer validation of expertise and expert judgements fit in with that picture of professional consensus.

Although variation has been identified between slts and the levels of consensus achievable within the discipline is in debate, studies presented here show that there are pockets of consensual knowledge which can be demonstrated. Furthermore, aspects which cause disagreement have provided insights into the sources of variation.

### **3.9. CONCLUSIONS**

The debates about the nature of SLT knowledge has focused mainly on the question of whether or not SLT is a science. Exceptions such as the work of van der Gaag & Davies (1992, a & b; Davies & van der Gaag, 92, a & b) and Leahy (1990) have broadened the debate by examining underlying traditions and investigating the core knowledge, skills and attitudes of the profession.

The review of the literature contained in this chapter therefore breaks new ground. The computer science literature on expert systems development has been used to frame a view of SLT expertise which could shape the methodology of the study. The literature on expertise covers a wide range of angles from the philosophical treatises on the nature of knowledge to the technical descriptions of knowledge representation and rather than presenting a full literature review, the chapter has highlighted key issues. Although the tacit and complex nature of expertise has been emphasized, the chapter has verified the possibility of making explicit the knowledge of experts. In particular the chapter has concluded that a key methodological concept should be the focus on the shared knowledge that underpins slts' decisions, through the identification of consensus.

The review of expertise has continued throughout the project as the author's understanding of the field has progressed. The changing insights which occurred and are reflected in the course of the project, ironically mirror the paradigmatic shifts described

at the beginning of the chapter: in the literature, views of knowledge have shifted from the point where a priori fundamentals are believed to exist, waiting for rational thought or experimentation to uncover them, to a social and contextualised view of knowledge. The project has moved from one which attempts to identify overt facts and figures used by slts in their decision making to a position which investigates the shared theories which underpin their action.



## **CHAPTER FOUR**

**THE NATURE OF THE TASK:**

**WHAT IS ALREADY KNOWN**

## **4.0. INTRODUCTION**

Although presented here as successive chapters, the literature on the decision making task itself is overlapping and the review was carried out simultaneously to the broader review of expertise. This chapter focuses firstly on those aspects of the SLT literature which described the process of client selection. It reviews the general speech pathology texts, followed by the more specific papers on selection and prioritisation which are reviewed in the light of discussions in the preceding chapter. There are relatively few studies which specifically address selection and prioritisation procedures so they are reviewed in some detail. As with the previous chapter, an attempt is made to link the perspectives found in SLT with the broader literature on expertise. The chapter concludes with the description of an abstract model of diagnosis from the expert systems literature.

### **4.1. SELECTING AND PRIORITISING PRESCHOOL CHILDREN FOR SPEECH & LANGUAGE THERAPY (SLT)**

As a starting point for this chapter, it is helpful to give a brief outline of the task under investigation. Preschool children referred to SLT have been identified by a referring agent as being at risk of a communication disorder. This usually occurs through screening or surveillance programmes in the community by health visitors, GPs, nursery staff other medical staff or by parents themselves. On attendance at the SLT clinic, there is the expectation that the slt will decide whether or not intervention is needed and if so, what sort of intervention. Any symptoms of speech-language difficulty require an explanation and the decision requires justification, either in the form of a discussion with the child's family or as a report to the referring agent.

### **4.2. UNDERLYING MODELS**

In the previous chapter (section 3.2.2) a number of underlying models were identified as influential in SLT. Their contribution to the shape of the selection task will now be discussed.

Following a traditional and largely medical model, the process of deciding which children receive intervention is regarded as diagnosis. A diagnosis provides a label for the

*patient's* problem, based on an examination of the signs and symptoms, its etiology and progress. (Crystal, 1980) Crystal points out limitations of a medical model since the link through to appropriate treatment is not always clear. So for example, knowing that a child has a language disorder does not lead directly to a particular treatment regime. However, within the speech pathology literature, diagnosis is seen to include treatment planning. Most texts emphasize three aspects: deciding whether or not a communication disorder exists; understanding causal or maintaining factors; planning appropriate intervention. (Emerick & Hatten, 1979; Nation & Aram, 1984) The process is seen not merely as a classificatory one whereby a diagnostic label is selected, but more as a descriptive one. Peterson & Marquardt (1981) for example, comment that whilst such labels are convenient shorthand, they do not describe the individual's behaviour. Crystal (1980) sees this influence as a "behavioural" one (not behaviourist) whereby the emphasis of the investigation is on an assessment, description and analysis of the client's linguistic and associated behaviours, moving towards the formulation of treatment hypotheses.

The behavioural approach on its own tends to de-emphasize the etiological aspects of a problem, but most texts would consider these necessary for a full understanding of an individual's difficulties.

A more recent emphasis has arisen from a recognition of the role of the child's environment in the therapeutic process. As noted above (section 3.2.2) notions about language have begun to focus on semantic and pragmatic aspects and along with problems of generalisation from clinic-based interventions to the child's everyday environment, a move to produce ecologically valid intervention has followed. This has stimulated debate concerning the role of slts. For example, Roulstone (1983) deplored the traditional models which saw therapists as mystical experts and advocated a "resource" model which presented the slt as a

"consultant and skills-transmitter, a co-ordinator of the intervention programme and as a participant in the child's educational environment".

Similarly, contrasts have been made between expert, transplant and consumer roles (Cunningham & Davies, 1985). The intervention model to emerge from these influences is a "facilitative" one (Leahy, 1990) where the concerns, motivations and priorities of the client and family are given prominence; the client is seen as an equal partner and as the "expert in the clients' reality". (Leahy, 1990). This model de-emphasizes not only the etiological aspects of the diagnostic process but also slts' interpretation of the

behavioural aspects, since the behaviours seen as significant by the client will not necessarily be the same as those attended to by slts.

These models can therefore be viewed as underpinning and influencing SLT as a whole, leading to differences in intervention approach. For example, Kot & Law (1994) spell out the cognitive, linguistic and interactional bases of their intervention approach. Other interventions in the same book (Law, 1994) also indicate their theoretical underpinnings such as psycholinguistics (Chiat, 1994) or nondirective approaches. (Tierney & Cogher, 1994) More specifically, the underlying model espoused will influence the approach taken by the slt from the outset, determining the way that the initial assessment is structured and which children are selected and prioritised. So for example, the facilitative model, with its emphasis on parental contributions and relative lack of emphasis on etiology, is likely to influence the questions asked by slts and the range of assessments used, with slts perhaps preferring to observe parent-child interactions and attend to features identified by parents.

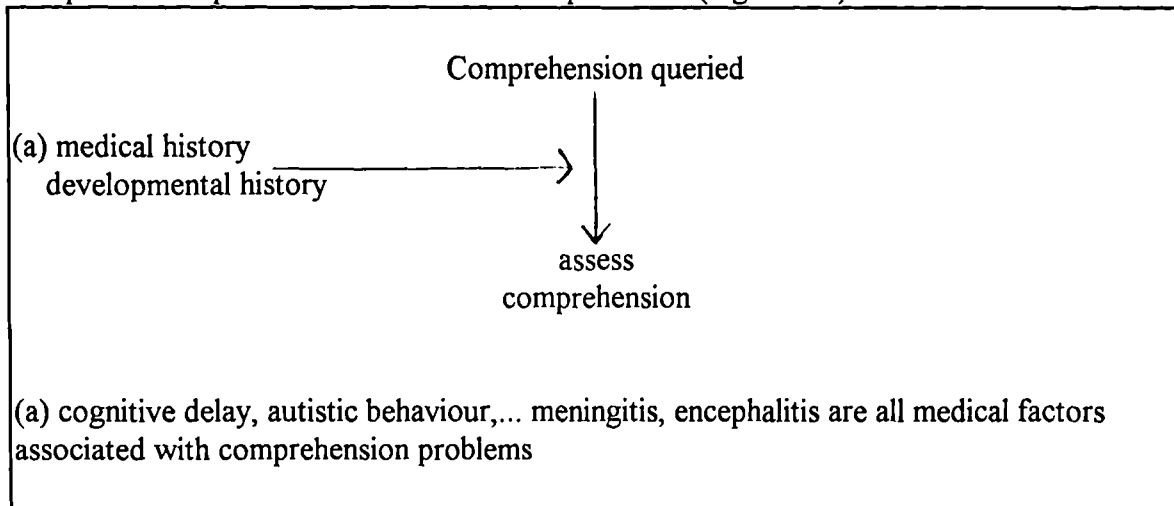
#### **4.3. FLOW CHARTS AND DECISION TREES**

A number of the speech pathology texts contain flow chart and decision tree guides taking the reader through the various stages of assessment and management of clients with communication disorders. They are usually presented, not as "cookbook recipes" (Yoder & Kent, 1988) but as guidelines to prompt the clinician. Whilst not intended to be inflexibly prescriptive, they aim to systematise the clinical decision making and are therefore what Ellis (1992) would regard as prescriptive knowledge: that is, they describe what should be the case rather than what is the case; they are based on the authors' experience and expertise in the area of speech pathology/therapy and on reflection and 'systems analysis' of their own work. It has not provided an analysis of what actually happens. The latter would be regarded as "descriptive knowledge", that is propositions which set out what is believed to be the case. (Ellis, 1992, p.72)

This section will briefly review two relevant decision trees from Yoder & Kent's (1988) book and a flow chart presented by Gerard & Carson (1990) which outlines the questions to be asked during the management of a child. The book, on "decision making in speech pathology" consists entirely of decision trees depicting the

"data gathering and logical steps"

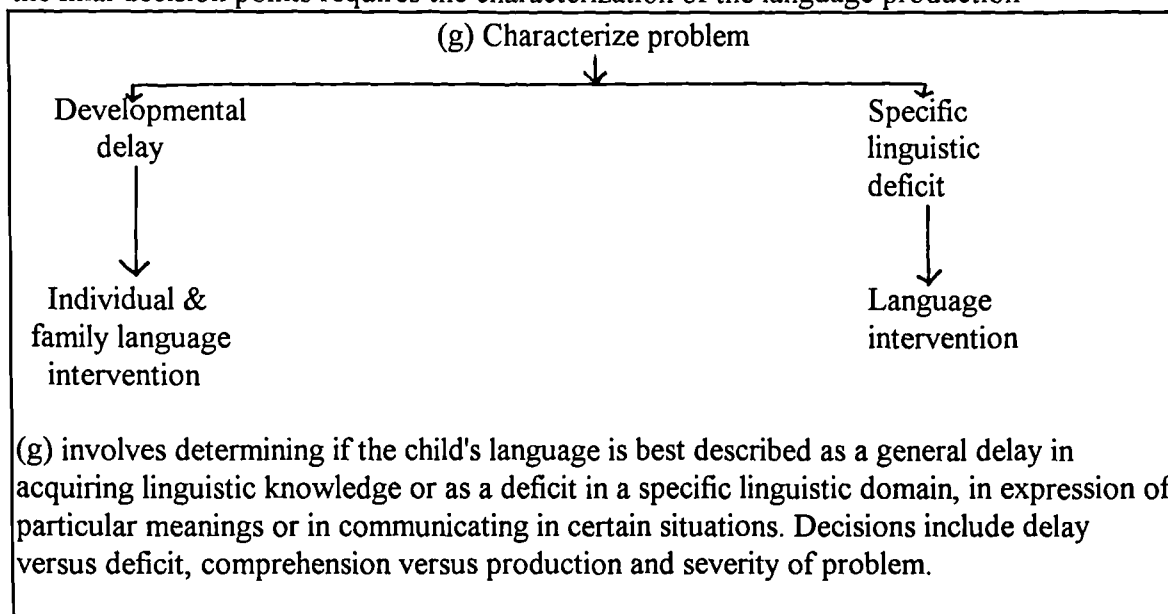
of various aspects of the clinical process. Each tree is accompanied by a brief explanatory expansion. They assume quite a high degree of background knowledge and give only general headings at each step. For example, if a child's comprehension is queried (Chapman, 1988), the first step is to investigate the medical history, medical conditions associated with comprehension problems are listed in the explanation. (Figure 4.1)



**Figure 4.1 First steps in a decision tree (Chapman, 1988)**

Knowledge of the symptoms of these medical conditions and the manner of their influence on comprehension is assumed.

The explanatory notes give guidance as to the sort of decisions required at different points in the tree. So for example, when investigating language production (Miller, 1988), one of the final decision points requires the characterization of the language production

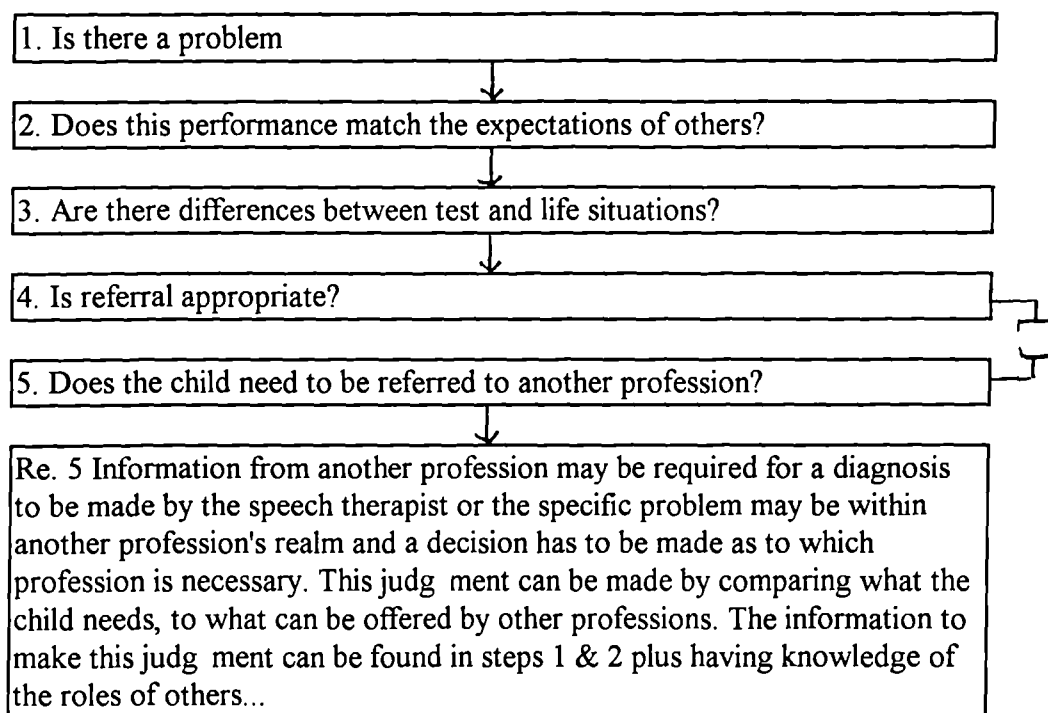


**Figure 4.2 Investigating language production (Miller 1988)**

problem. (Figure 4.2) Miller summarises the decisions at this point as a choice between

"delay versus deficit, comprehension versus production, and severity of the problem".

The flow chart presented by Gerard & Carson (1990) maps out seven areas of assessment: referral acceptance and data collection, data analysis, setting targets, maintenance planning, intervention planning within the environment, planning intervention for the child and the re-assessment procedure. For each area, the key questions are specified, together with a brief expansion of associated considerations. Figure 4.3 shows the key questions for "referral acceptance and data collection". It is suggested that in order to answer the key question "does the child need to be referred to another profession?", the slt should consider whether or not the problem lies within the slt's domain. The slt is referred to the information obtained from the preceding questions to make that judgement.



**Figure 4.3 Referral acceptance & adequate data collection (Gerard & Carson, 1990)**

At each step the reader is referred back and forward to other steps in the flow chart. The key questions are given in some detail, along with ways in which those questions might be pursued and how the information from one question feeds into another.

The use of flow charts and decision trees suggests a certain linearity to the assessment and management process; both examples provide detailed guidance through that process. By laying out a recommended path, they highlight the complexity of the process and the

wide range of questions to be posed and decisions to be made. In both cases, the how of making the decision is left to the practitioner and only minimal guidance is given with respect to the expected responses. The kind of responses that might be considered significant are rarely made explicit.

#### **4.4. PRIORITISATION GUIDES**

The next section focuses on two papers, also of a prescriptive nature. One is presented as a decision tree and the other as a rating system. Both papers suggest case features should be weighted in order to identify priority cases.

Ward et.al. (1990) described the process whereby an expert systems 'shell' was used to develop a decision tree. This guides slts to one of four 'prioritising' conditions: urgent, treat within 3 months, treat within 5 months, treatment not applicable. The expert systems shell - Expert Ease - requires the input of a set of case examples. Each case is described by the slt in terms of attributes (in this case, reasons for and against prioritisation) and a priority condition. The attributes are defined in terms of ranked integers (eg 0 = no anxiety, 1 = slight anxiety) or by a yes/no decision. The computer system then creates a decision tree, connecting the various attributes to their priority condition. An evaluation of the decision tree was conducted by 15 slts assessing 85 new patients. These cases were prioritised firstly using their traditional methods and then by using the decision tree. *No disagreement was found between the two priority ratings.* Applicable to all kinds of clients (adults as well as children), it was reported that the tree provided a quick means to standardise the way in which clients were prioritised within the department and as such has been adopted by other departments in the UK (personal communications).

##### **4.4.1. Short-cutting experts' decisions**

Approaches using software such as Expert-Ease have been criticized since they "force" the expert's knowledge into a pre-established format. (Keravnou & Johnson, 1986, p.21) In so doing, important features of the expert's knowledge may be lost since they are not seen as relevant to the pre-existing model.

In this example, although the prioritisation conditions are agreed by the department in advance, they reflect only how soon a client should be seen; however, treatment of

clients also varies in terms of its frequency and how long it goes on for, (see section 8.5.5) both of which may reflect the differing priority status of clients.

Furthermore, the attributes provided by slts were collated and those factors which confirmed each other were entered as a single judgement. Further, the expert systems shell uses the minimum number of attributes and the shortest pathways to map the connections, so that although eleven attributes were provided to the shell, it was found that no more than six were needed to discriminate the priority rankings and in some cases only two or three were required. Figure 4.4 shows an extract from the decision tree. In this instance, if a clients' condition will definitely become worse and some co-operation is likely from the client or caregiver, then the client is classified as urgent.

Many slts, reading such a conclusion will feel that they would take a larger number of factors into account. It could be argued that therapists are perhaps making a meal of the decision, considering more factors than necessary and that the decision tree has simplified that process. Indeed Elstein & Bordage (1988) suggest that in situations where cues have high reliability, redundant (and, they suggest, excessive) data collection can impede the interpretive process, the sheer volume proving too much for clinicians to sort out. They further argue that redundant information is sometimes used inappropriately to buoy up a decision: it adds little to the accuracy of the decision and is used erroneously in support of a decision. However, Elstein & Bordage recognize that in many clinical situations information has low reliability and does therefore require confirming or disconfirming evidence to give it weight. As suggested previously (section 3.4.1 & 3.5) SLT is still largely an uncertain and unstable domain. It is likely therefore that confirmatory cues are essential in order for a decision to be confirmed.

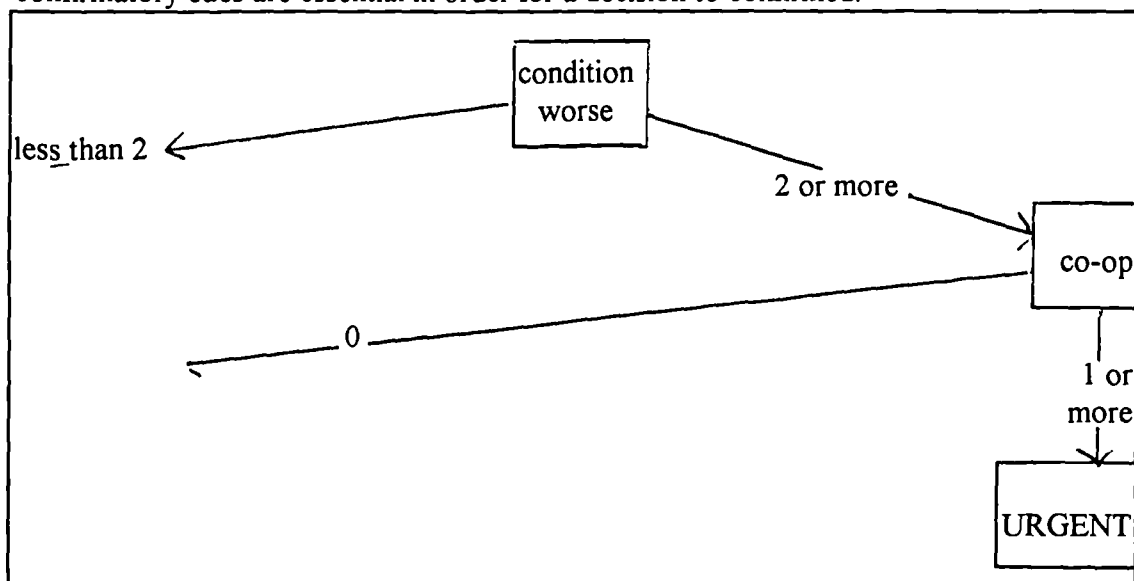


Figure 4.4 Extract from decision tree, Ward et.al. 1990



#### 4.4.2. Explanations

Furthermore it is argued that, by taking the shortest possible pathway, the system loses flexibility in terms of showing explanation or justification for its decision (Keravnou & Johnson, 1986, p.23). This facility is regarded as a vital ingredient in the acceptance of a system by users (Johnson & Keravnou, 1988; Swartout, 1984). Swartout (1984) describes two attempts to meet this requirement, both of which he regards as unsatisfactory. The first uses "canned text" - ready-made explanations which are provided in response to user questions. In the second, the programme shows its own operational steps as an explanation. He argues that the former does not guarantee a real explanation of what has been done within the programme. It also requires that the programmer predicts all potential questions and provides all the answers in advance. In the latter case, the programme's operational steps are likely to include ones which are irrelevant and confusing to the user; they are required to ensure successful completion of the programme not of the decision. In order to develop a system's ability to provide acceptable explanations, it is argued that the system should capture as much of the knowledge and decision as possible. (Keravnou & Johnson, 1986; Swartout, 1984) Slts basing their decision on the tree alone therefore, may be unhappy with the line taken in figure 4.4, since it does not necessarily follow the order or consider the full range of factors. It is likely therefore, that slts will use the tree merely to confirm a priority rating; that is, their treatment decision is already made when they use the decision tree. This would account for the high level of agreement found in the evaluation trials, in that slts may have been finding a way through the tree which merely confirms their decision. Nonetheless, despite these comments, the decision tree does make explicit some of the key factors that are taken into account. Slts involved in the pilot found it quick and easy to use and as the report concludes it does provide a consistent means for rationalising decisions regarding prioritisation. (Ward et.al., 1990)

Having recognized the informal prioritisation that occurred within their department, Withers (1993) set out to formalise this. They describe a scoring system which allocates points according to the severity of difficulties in the areas of effective communication and speech or language. (for example, 0 = effective communication; 1 = usually effective) Based on consensus achieved within the department, the scoring system results in a severity score. Other factors such as the child's age and parental anxiety are recognised to have an effect but the manner of their influence is not made explicit and does not feature in the scoring system. The final score is not linked explicitly to intervention

decisions and Withers emphasizes that high scoring children are not always seen first. Rather, the aim is to use the scores to achieve a balanced case load which will ensure some throughput of cases and demonstrate the caseload weighting and resource needs of the various clinics. The scores therefore seem to represent the resource needs of a case, rather than their relative urgency as in the Ward system above, although one department in the survey had linked the scoring system to intervention choices in their locality (appendix B).

These two systems reflect the pressures on slts to be accountable for their prioritisation and selection decisions. They are quick and easy ways of producing a standardized decision within the clinical situation although neither have reported evaluations of reliability within or between slts. They begin to make explicit some of the case features and their significance although it is of interest that some of the features excluded from the Withers' scale are present in the Ward et. al.'s system and vice versa. So for example, the key feature of the Withers scale is the severity of the impairment in terms of the areas of speech and language affected; this is not included in the Ward et.al.'s decision tree. On the other hand, parents' commitment was deliberately excluded from the Withers scale yet would be considered under "degree of co-operation" on the decision tree. In neither case therefore, is the totality of the decision represented either in terms of the range of knowledge used or in the process followed by slts themselves. In ruling out and simplifying the range of factors considered, they fail to mirror the complex structures developed by slts which have evolved adaptively to make that knowledge accessible for the problems they face. Although potentially useful at the level of presenting simplified explanations to purchasers of services, slts are therefore likely to find them unhelpful for their own decision making either in terms of facilitating expertise or in terms of evaluating how their own decisions are reached.

#### **4.5. STATISTICAL ANALYSES**

In contrast to the preceding papers, the following studies have set out to describe the decision making of slts, although both reports have a prescriptive element. Both studies use logistic regression analysis.

Lendrum, (1994) used decision analysis to investigate the selection of aphasic patients for treatment. Decision analysis includes several stages, outlined by Elstein (1989) as follows: following the identification and framing of the problem, a decision tree is worked out to show the various alternatives for clinicians' action. The degree of

uncertainty and the value of the outcomes (probabilities and utilities respectively) for each of the alternatives are obtained from the literature, estimated by clinical judgement and /or elicited from the patient. Statistical analyses are then used to calculate the probabilities and utilities of each alternative so that the clinician can select the alternative with the best outcome.

At a nominal group workshop, slts identified a total of forty features as important. Each slt ranked the seven most important and from this four were identified as the most salient (motivation, severity of aphasia, family support for treatment and communicative need). In a field study 5 slts recorded their selection decisions with reference to the four features for 38 patients. Logistic regression analysis was then used to model the probability of patients being selected for treatment as a function of the four features. The model was tested on further case histories to test out the decision outcome.

In a further field study, (Lendrum, 1994) 23 slts recorded selection and discharge data on 131 patients. They recorded their decisions on a severity scale, as well as scales for access, motivation and response to treatment. An element was built into the project which evaluated agreement between slts on case selection. Lendrum found that although there was good agreement between slts regarding case selection, there was a wide discrepancy between the decisions made by clinicians and that recommended by the model. Lendrum considers potential reasons for the difference to include subjectivity and inconsistency of clinicians, that they were using other knowledge such as the likely response rate of patients or that clinicians select clients with whom they feel most comfortable. She also notes the influence of clinicians' local working context and recommends that any decision analysis system should take this into account.

Records & Tomblin (1994) also used logistic regression analysis to reveal the manner by which slts used test results to arrive at a diagnosis of language impairment in children. As they required a process that would translate to research paradigms, they excluded other judgments of children's communicative performance and focused on judgments based on test scores. Part of this study has already been reviewed in section 3.7.7 regarding levels of consensus between slts.

The analysis was used to generate a single decision rule based on the relationship between the test results and the slts' diagnostic decisions across all clinicians and case results. This set of clinicians were found to be heavily influenced by the expressive language assessment results and by the child's performance IQ. It was also evident that both comprehension and language production were considered. There also appeared to be a "trading relationship" between the performance IQ scores and the language measures with low scores on one test being offset by higher scores on the other. They

concluded that the majority of slts in their study would consider a child language impaired if they achieved a standard score of less than -1 SD/ -1.2 SD on the language measures. Records & Tomblin also collected written reflections from the clinicians on their decision strategies. The comments elicited appeared to coincide with the decision rules that were extracted from the data via the statistical rules.

Both studies have taken a statistical approach to the modelling of decisions made by slts. In the process, features regarded as important by slts and seen as integral to the clinical decision (Records & Tomblin, 1994) are excluded from the analysis. The resultant decision tree or statistical formula does not therefore describe the slts' decision but merely tries to copy the outcome. They are therefore subject to the same difficulties as the prioritisation guides discussed above. That is, whilst they may help to standardise slts' decisions, slts themselves may feel uncomfortable or "shortchanged" (Elstein & Bordage, 1988) by the process and their own decision making skills are unlikely to be enhanced through their use.

#### **4.6. A LINEAR OR ITERATIVE PROCESS**

Most of the texts reviewed so far agree that the initial phase of client selection is a diagnostic one. The underpinning influences on how that process is enacted were discussed in section 4.2. Whilst there are a number of prescriptive guides suggesting ways through the diagnostic phase, the ones reviewed so far give little clue as to how the information gathering process is managed and how the diagnostic decision is reached.

The prevalent view of the process is one whereby all the assessment information is collected from the various sources (case history, standardised assessments, observation etc) before a decision is made. The decision is regarded as one of synthesis (Coombes, 1987) or integration (Weber, et.al., 1982) of all the data which is nonetheless flexible. CSLT for example (1991, p.159) show the range of information that should be collated but add as a rider "where appropriate", ie, there is the acceptance that not every potential aspect is investigated with every child. Miller (1981) accepts that the process combines scientific methods with artistic judgement. (p.168). So for example, he argues that the decision making framework should be hierarchical and follow the "basic scientific method" of hypothesis testing. However, he accepts that purposes and goals vary according to clinical context and also points out that the interpretive stage requires judgment.

Such descriptions, the decision trees and flow charts tend to emphasize a linear approach to the process. Ravitch (1989) however, describes diagnosis as a "dynamic inductive-deductive process" during which one moves back and forth "interactively" with the incoming data. So rather than linear, the process is cyclical or "iterative" (Pauker & Kassirer, 1989) whereby hypotheses become ever more focused and refined as information is gathered. Chen & Srihari (1994) support the cyclical view and suggest that "interactive diagnosis" uses incoming information to guide the selection of the most appropriate means to gather information on an iterative basis until a solution is found to the problem.

#### **4.7. A COMPETENCE MODEL**

An example of this iterative process can be seen in the model described by Johnson & Keravnou (1988) which provides an abstract analysis of the diagnostic process. Their starting point is that the process is stimulated by the discovery of some

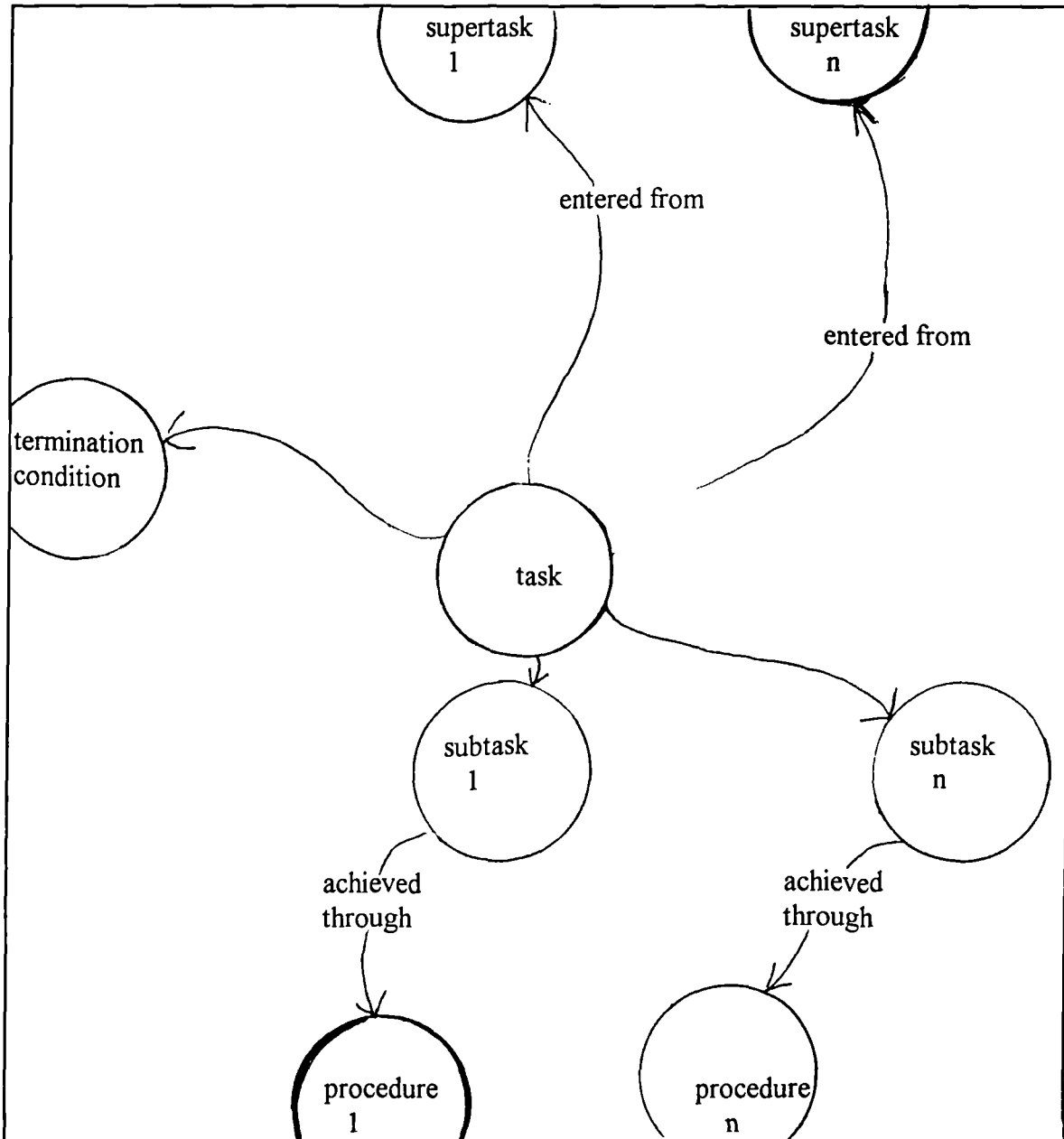
"divergence from the device's proper functioning";

this malfunctioning requires investigation in order to establish the cause with a view to putting it right. (Johnson & Keravnou, 1988, p.51) The model is at a sufficiently abstract level that the principles and concepts contained therein have relevance and shed light on the SLT decision task under scrutiny in this study. In the following description, examples are used which have been taken from the data. The description will focus on two main aspects of the diagnostic process: an analysis of the task itself and an analysis of the reasoning knowledge involved.

##### **4.7.1. The task analysis (fig 4.5)**

As described by Johnson & Keravnou (1988), the diagnostic task comprises a series of "subtasks" such as information acquisition or verification of findings. These must be completed satisfactorily in order to achieve the main diagnostic task. In turn the subtasks are achieved by the implementation of associated procedures. So for example, a subtask might be to verify the child's level of comprehension. The procedure used might be a standardised assessment. The subtasks and their related procedures are selected and implemented iteratively until the main diagnostic task is completed, that is, until the "termination conditions" have been fulfilled.

Which subtask is selected at any point depends on the case specific information being considered at that point and the stage of the diagnostic process. The selection of subtasks is informed by a set of "supertasks" which form the rationale behind the route of the main diagnostic task. So, the way that the main task proceeds and progresses is informed by various underpinning activities such as hypothesis generation and testing. The relationship between the



**Figure 4.5 The diagnostic task. Adapted from Johnson & Keravnou 1988**

supertasks and subtasks of the model is brought about through "enabling, disabling and relaxation" conditions. Enabling conditions are those features which must be present for a task to be selected; disabling conditions must not be present for the task to be selected;

relaxation conditions over-ride disabling conditions. A quote from the interview data illustrates this process.

"The alarm bell rang when she said he doesn't always fetch what I ask him to fetch, so it was then that I decided to do the Reynell Comprehension, but otherwise I may not have done it. If she'd said 'no he understands everything that I tell him' then I probably wouldn't have done it"

The subtask might be "describe comprehension"; the procedure is "the Reynell Comprehension"; the supertask which informs this process might be something like a "possible receptive language difficulty". The enabling condition was that the mother reported that the child doesn't fetch on request. A disabling condition which did not occur in this session is suggested by the slt : if the mother had reported that the child understood everything, the Reynell would not have been used.

#### **4.7.2. Reasoning knowledge**

Johnson & Keravnou differentiate between factual knowledge and reasoning knowledge. Factual knowledge is regarded as domain specific whereas the structures of the reasoning knowledge can be applied across domains. In particular, they focus on two core concepts: findings and hypotheses. Literature discussed earlier in this chapter (section 4.2) emphasizes that treatment should be seen as part of diagnosis. Johnson & Keravnou accept this but do not specifically address this concept within their model.

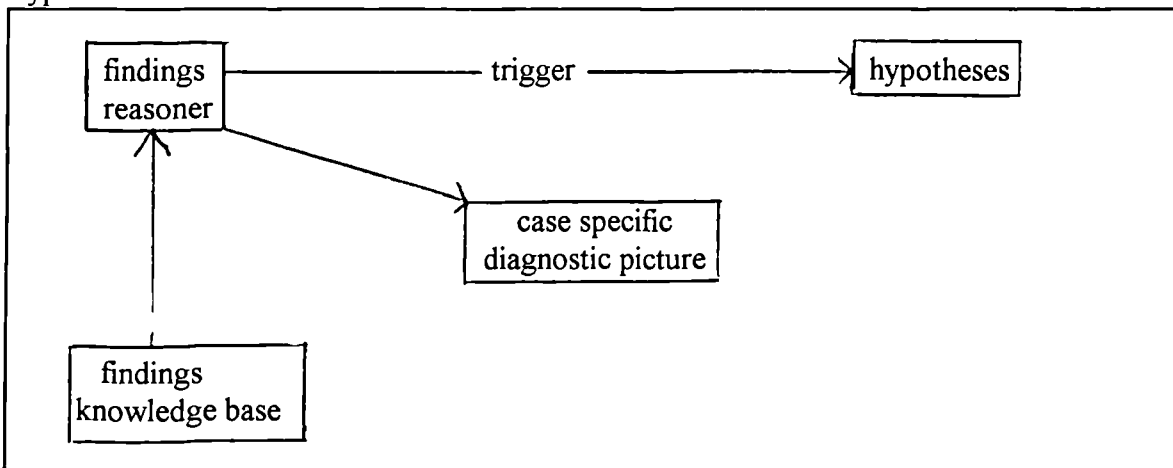
#### **4.7.3. Findings: (figure 4.6)**

Findings are defined as the known information about a case and can consist of direct evidence produced from observations of the device (or as in this study, the child and family) and indirect or circumstantial evidence obtained via case histories or through universals that would be true of such a case (for example, all phonological delays have x,y,z features). Findings have a temporal component in that they relate to past, recent or current features of the case. Findings might consist of common sense knowledge, domain specific knowledge or "deep knowledge". This latter seems to be what was referred to in the last chapter as the abstract structures that evolve with developing expertise which allow for the generation of new ideas based on existing knowledge (cf section 3.5).

Decisions are made with respect to the validity of findings - whether or not they are true. In order to do this, conflicts among findings must be identified, ruled out and potential red herrings clarified. So for example, some findings may be congruent with both a trivial explanation or a serious difficulty. So for example, the phrase "in a world of his own" is a

phrase used by parents to describe their children. If asked if this describes their child, many parents may well agree; however, if a parent spontaneously offers this as a description, it is taken by slts as a negative feature, possibly indicative of the autistic continuum of disorders. (see section 10.4.3) The phrase can therefore be a red herring unless spontaneously volunteered by parents and would be investigated and confirmed by other features before being accepted as a confirmed finding.

Johnson & Keravnou argue that knowledge about findings is organised in a similar fashion across domains: by classification, along with associated attributes and definitions. Some findings act as triggers, linking a group of findings with a range of hypotheses in a positive or negative way, that is, the trigger suggests that a particular hypothesis or group of hypotheses should either be considered or can be ruled out.



**Figure 4. 6 Findings components. Adapted from Johnson & Keravnou (1988)**

Finally a "case specific diagnostic picture" is proposed where confirmed findings specific to a case are held.

During a diagnostic session then, there are three interacting components relating to the findings of a case: firstly a knowledge store of findings relevant to a domain; secondly a "findings reasoner" which makes decisions about the validity of findings, drawing on the knowledge in the findings base and organising information acquisition procedures to confirm findings; thirdly, once findings for that particular case have been confirmed, they are retained together. (see Figure 4.6)

#### 4.7.4. Hypotheses

Hypotheses are defined by Johnson & Keravnou (1988) in this context as possible explanations of the malfunctions which, when confirmed, in themselves become findings. They are inferred and "pieced together" from the various information gathered during the investigation.

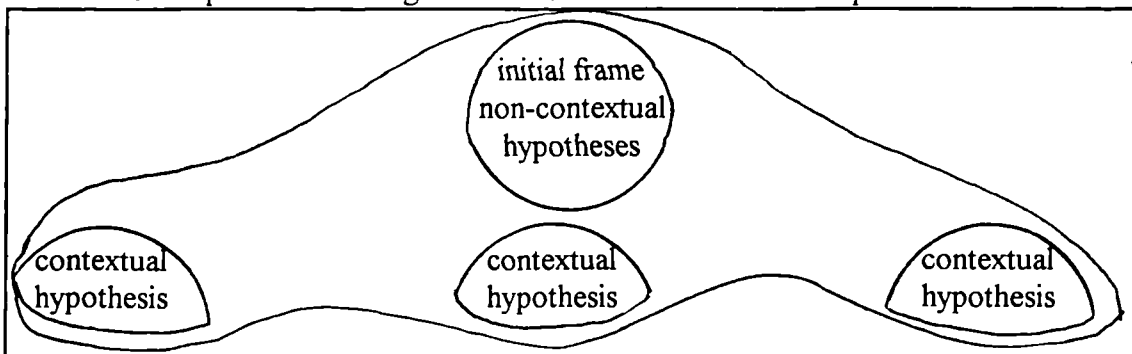
Johnson & Keravnou (1988) analyse three diagnostic steps:



- i) generating hypotheses
- ii) testing hypotheses
- iii) evaluating hypotheses

#### 4.7.5. Hypothesis generation

At first, "non-contextual" hypotheses are generated, which set up the initial context of the diagnostic exploration. They are non-contextual in that they form the initial frame of the investigation and are not generated in the context of other hypotheses. So for example, the slt hears the two year old child chatting with the parent as they come into the clinic, her initial frame for her investigation will perhaps start to consider mild difficulties and pitch the investigation at the less severe end of the spectrum.



**Figure 4.7 Hypothesis generation**

Contextual hypotheses follow on, that is, further hypotheses are generated within the context of other previous hypotheses. (Figure 4.7)

#### 4.7.6. Hypothesis testing

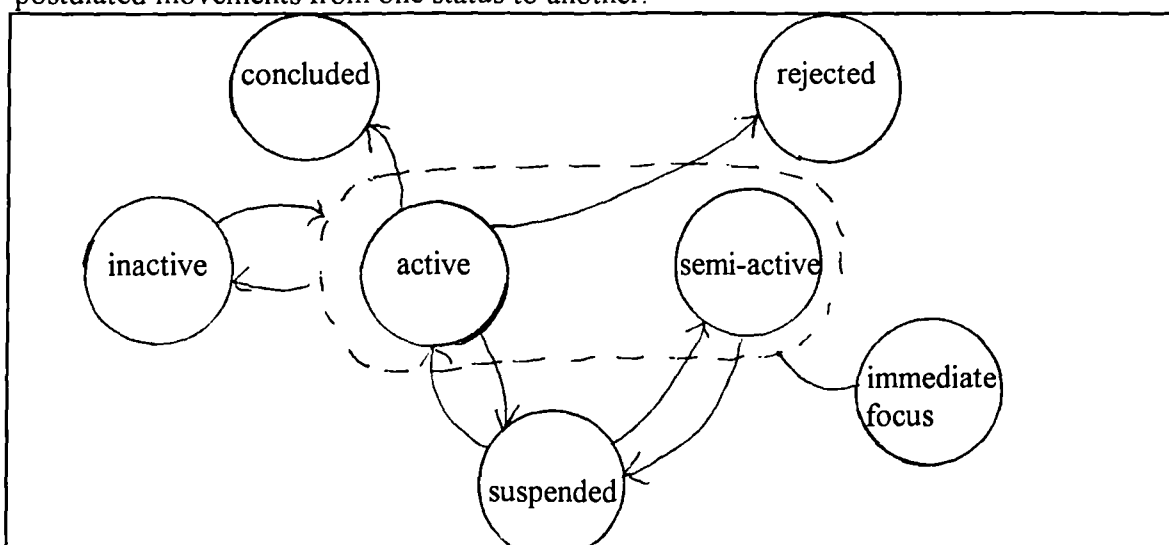
Given that a certain hypothesis is being considered, the next step decides which findings would relate to that hypothesis. The case specific picture is checked to see if those findings are available and if not, further procedures are generated to investigate those findings. Heuristics operating at this stage inform the choice of information acquisition strategies.

#### 4.7.7. Hypothesis evaluation

The final step decides that the findings provide a satisfactory explanation of the problem and support the selection of treatment procedures and the hypothesis is confirmed. Johnson & Keravnou note that the way in which experts evaluate hypotheses and know when to terminate investigations is "still largely unanswered" (p.193)

#### 4.7.8. Hypothesis reasoning

At any point in time the status of an hypothesis will vary. If strongly suggested by the findings, an hypothesis will be held in an active state and a semi-active hypothesis if less strongly suggested. A suspended hypothesis requires information which is currently unobtainable from the case specific findings; however, that information requirement is retained in focus so that is it should become obtainable, the suspended hypothesis can be re-activated. Inactive hypotheses are those potential hypotheses that could be activated during the first stage of the diagnostic process -that is they could be "generated" given the incoming information. Finally, an hypothesis may be concluded or rejected. Fig 4.8, from Johnson & Keravnou (1988) shows the various possible states of hypotheses and the postulated movements from one status to another.

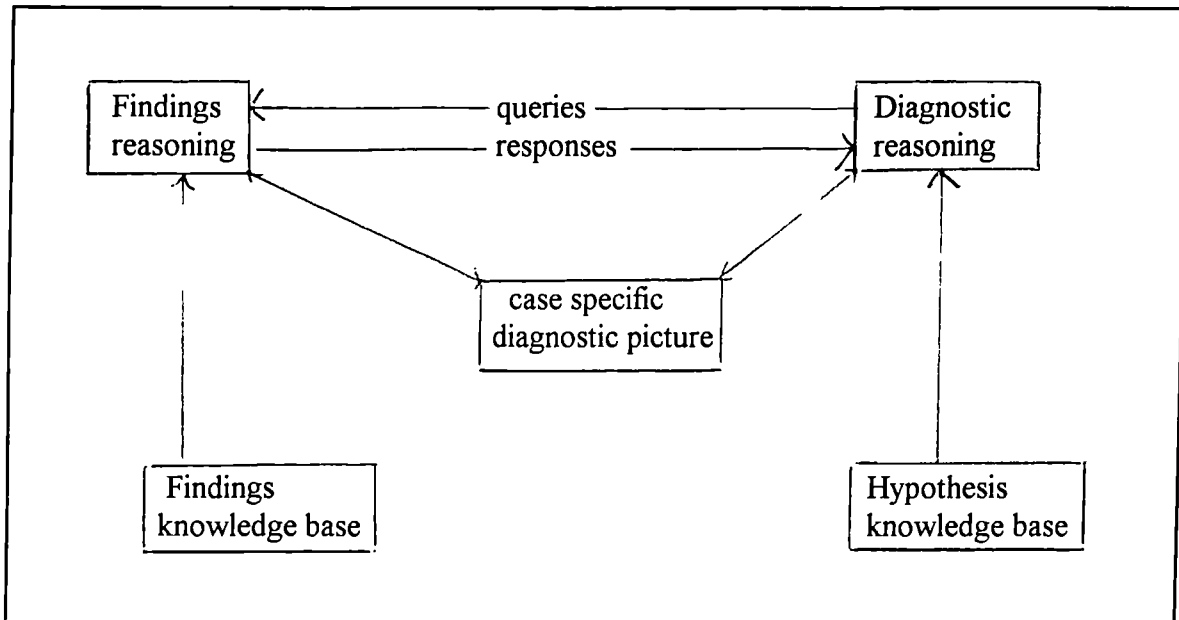


**Figure 4.8 Hypotheses status from Johnson & Keravnou, 1988, p.202**

The process of generating, testing and evaluating hypotheses draws on the experts' knowledge base of potential hypotheses and 'interacts' with the findings reasoner in order to acquire information for the diagnostic process. Confirmed hypotheses, in the same way as confirmed findings are held in the current diagnostic picture. Figure 4.9.

Figures 4.5 and 4.9 then, capture the two main parts of Johnson & Keravnou's abstract analysis of the diagnostic task, presented in a simplified and descriptive way in order to highlight key concepts. Unlike previous examples in this chapter, it is not particular to SLT but instead presents a generic view of how a diagnostic task is accomplished and how the reasoning knowledge might be structured. As a "competence model", it picks up the notion of competence used in linguistics, and represents the underlying framework which informs the clinician's performance. As such it focuses, not on the behaviour of the clinician but on the structures which underpin the behaviour. It therefore fits in with the view of SLT expertise developed in the previous chapter. Unlike an expert systems shell

where the expert has to provide certain types of information and to structure it in a particular way to fit the format of the shell, the competence model should be able to reflect structures that emerge in the data. It could therefore be used during the reporting of results to show what aspect of the decision is being discussed.



**Figure 4.9 Relation between Hypotheses and findings**  
**Adapted from Johnson & Keravnou (1988, p.189)**

#### 4.8. CONCLUSIONS

Within SLT, there has been little investigation of the process of initial selection of clients. Those papers identified were either short descriptions of procedures evolved for clinical purposes (for example, Ward et.al., 1990; Withers, 1993) and as such relatively unevaluated, or decision trees and flow charts which have been evolved through reflection and analysis of authors' own experience in the field. (Gerard & Carson, 1990; Yoder & Kent, 1988). The two exceptions (Lendrum, 1994; Records & Tomblin, 1994) have taken a more quantitative view, seeking to represent the diagnostic decision in terms of statistical probabilities and predictive measures. Only one of these focused on child clients. (Records & Tomblin, 1994)

Speech pathology texts often present diagnosis as a linear process where information is collected first before a diagnosis is made. However, the view taken in this chapter is of an iterative and interactive process whereby the slt interacts with the incoming

information. The resultant procedures, whilst informed by knowledge particular to the domain and to the task, are therefore sculpted at the time.

The model proposed by Johnson & Keravnou (1988) has been presented as an abstract view of the diagnostic process which can inform the analysis of data collected from expert slts. The concepts developed in their task analysis and model of reasoning knowledge have been identified as potentially useful. They are to be used, not as a model into which the slts' knowledge must be forced, but as a tool to assist analysis of and reflection on elicited data.

The literature reviewed in this and the preceding two chapters provides the theoretical underpinnings of the study, reviewing the difficulties of identifying priority children, the nature of knowledge used and developed by professionals involved in making such decisions and finally, in this chapter, the nature of the task itself.

# **CHAPTER FIVE**

## **AIMS**

## **5.0. INTRODUCTION**

This short chapter sets out the overall aim of the study and specific questions which acted as a focus for the data collection. In addition, the underlying theoretical strands which run through the thesis are summarised. The aims and questions specified here reflect the author's position at the beginning of data collection. Yet, as indicated in the two preceding chapters, the literature could be interrogated and interpreted with increasing understanding as the project progressed. As a qualitative study, each stage of the data collection informed the next, but the insights afforded by the data interacted with the growing understanding of the study area to shape the study questions. This can be seen as the study progresses in the way that the aims for each stage of data collection are expressed.

### **5.1. AIMS**

The overall aim of the study is to make explicit the process by which expert speech & language therapists (slts) select and prioritise preschool children for speech & language therapy (SLT) intervention.

The study aims to build up a theoretical exposition of the way in which slts select preschool children for intervention, focusing in particular on the children being prioritised. This is potentially a foundation for the future facilitation of expertise in that decision making at two levels:

    firstly for junior slts, the resultant model and elucidation of the selection process would archive the experience of more expert colleagues and act to inform their own decisions;

    secondly, for more experienced slts, an explicit discussion of the process of selection can act as a stimulus for reflection; for slts who already have experience with this decision, this could aid the further maintenance and development of expertise.

### **5.2. SPECIFIC QUESTIONS**

From the central aim of the study a number of specific questions were devised in order to focus the data collection process.

1. What factors do slts consider as they assess a newly referred preschool child?

2. How would they define and categorise those factors and justify their importance?
3. What hypotheses guide their investigations?
4. What nonclinical and/or contextual factors affect their decision making?
5. What levels of consensus exist between slts?

As a qualitative, multimethod study, the data pertaining to particular questions is not necessarily localised in a single chapter. Table 1 therefore gives some guidance to the reader as to where results can be found.

| Questions                           | Section for results |        |               |                     |
|-------------------------------------|---------------------|--------|---------------|---------------------|
| Factors considered                  | 7.4.3;<br>10.4.1    | 7.6.1; | 7.6.2;        | 8.5;                |
| Definitions & importance of factors | 7.4.4<br>10.4.1     | 7.6.4  | 8.5<br>11.4.3 | 9.7.6<br>appendix K |
| Hypotheses to guide slts            | 10.4.3              |        |               |                     |
| Working context                     | appendix B          |        |               |                     |
| Consensus                           | 7.6.3               | 9.5.2  | 11.4.1        | 11.4.2              |
| Overall aim/<br>model               | 12.2                |        |               |                     |

**Table 5.1 Questions and results**

### **5.3. THEORETICAL ISSUES**

The literature informing the study has been presented over three chapters. A number of theoretical threads have become apparent:

**the influence of the working context:** the economic and ideological climate of the NHS gives rise to pressures and influences on slts, both individually and through their departments on all aspects of their work and therefore on this decision too.

**the nature of the priority child:** the review of the literature of preschool children's communication disorders shows this to be a complex problem which experienced slts must solve in their everyday practice.

**underlying structures of SLT knowledge:** expertise concerns the skillful application of knowledge; experts structure their knowledge so that it can be applied appropriately to everyday, novel and complex problems.

**identifying expertise:** the definition developed in the literature review considers expertise to be held in the shared views of expert slts.

Table 2 points the reader to sections where the results are discussed in relation to these issues.

| <b>Issues</b>                          | <b>Section for discussion</b> |                    |                 |                 |
|--|-------------------------------|--------------------|-----------------|-----------------|
| Influence of the working context       | 2.1                           | 2.2                | 7.7.5           | appendix B      |
| Nature of the priority child           | 2.3                           | 7.7.2-.4<br>10.5.1 | 9.6.3<br>12.2.2 | 9.9.1-.2        |
| Underlying structures of SLT knowledge | 3.2                           | 3.5<br>10.5.3      | 4.2<br>11.5.1   | 9.9.3<br>12.2.4 |
| Identifying expertise                  | 3.7                           | 7.7.6<br>11.5.2    | 9.6<br>12.2.5   | 10.5.2          |

**Table 2 Issues and discussions**

These two tables are not an advised way to read the project and do not in themselves produce a coherent story, but give the reader easy reference should they wish to search out a particular issue.



# **CHAPTER SIX**

## **METHODOLOGY**

## **6.0. INTRODUCTION**

The selection of a methodological approach was the next task needed in order to translate the aims and specific questions into data collection exercises. This chapter draws together issues highlighted from the literature along with key features of the study in a discussion of appropriate methods. In particular the discussion focuses on the appropriacy of qualitative methods as the prime emphasis in this study. In addition to the qualitative emphasis, the methodology is characterized as multimethod and includes quantitative components.

This chapter also gives an overview of the sample criteria and general considerations of the selection of knowledge elicitation (ke) techniques. The particular data collection techniques selected are discussed in detail in the chapters which report the data collection and analysis exercises. Finally, the definition of consensus which is used within the study is outlined.

## **6.1. METHODOLOGICAL ISSUES**

### **6.1.1. Descriptive knowledge**

A difference was identified in the literature between papers which attempt a description of the decision taken by speech & language therapists (slts) and a prescriptive approach which spells out how slts *should* conduct the process. The basic aim of the study is descriptive: it aims to describe "what is going on" - as Van Maanen (1983, p.256) has said, a deceptively simple aim and one that is often undervalued as a research aim (Bryman, 1988, p.63). However, the reality of making explicit a decision such as the identification of a preschool child for speech & language therapy (SLT) calls for an analysis of a complex inter-relation of processes and concepts.

### **6.1.2. Building a theoretical model**

The sort of description required is a theoretical explanation and the research process is therefore one of building a theory which explains the process under scrutiny. The interpretation of 'theoretical model' used in this study has emerged from the discussion of the nature of expertise (section 3.6). The study will focus on slts' views and understandings of the process of selection and prioritisation.

### **6.1.3. Single context**

Furthermore, it is planned to study *only* slts' views. Bearing in mind Eastwood's reminder that communication disorders are defined by their culture rather than having a finite entity (Eastwood, 1988), this single context will provide only the professionals' view; slts' views of what constitutes cause for concern may differ from those of other professions, of parents or indeed of other groups of slts. The initial session between slt, child and family is only a small part of the slt's work. As the point of access for clients, it is a crucial decision; however, with those clients who gain access, selection and prioritisation is a continuing process as the slt evaluates effectiveness and progress and manages her case-load.

### **6.1.4. A qualitative emphasis**

The statements contained in the discussion so far,

"what is going on...description...a single context...slt's views...building a model..."

point to a qualitative methodology as the approach of choice; that is they reflect the qualitative researcher's interest in the subjects' view of the social action (the decision), the investigation of a process happening within a context rather than a static one-off experimental situation, moving towards the development of a theory rather than beginning with theory driven concepts. It is the shared meanings of slts that are of interest.

### **6.1.5. Technical versus epistemological**

Quantitative and qualitative approaches to research are usually presented as divergent at the technical and/or epistemological levels. That is, they diverge technically in how appropriately they address different questions and they diverge epistemologically in terms of their respective positions on the nature of data (Bryman, 1988).

In much research, the researcher's view of the nature of the data to be collected is not made explicit. The epistemological debate about suitable methodologies is often carried out at a more general level. So for example, the field of speech and language pathology has mostly allied itself to the traditional "scientific" community in terms of its research methodology, training and clinical practice following a positivist, quantitative direction.

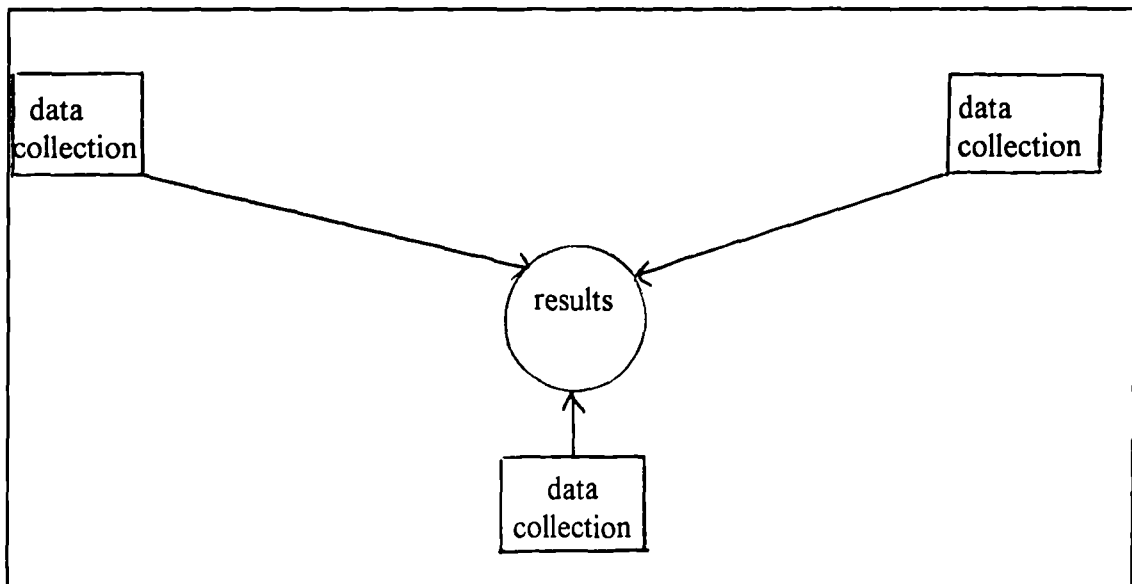
Over recent years the appropriateness of this has been questioned (Eastwood, 1988) and Bench (1991) insists that, before considering the appropriateness of a methodology for a subject area, the nature of knowledge of that area should firstly be considered.

#### **6.1.6. Multimethod**

What of this study? The justification seems to be both epistemological and technical, a fairly typical combination according to Bryman (1988). It is epistemological in the sense that, through the discussion of the nature of expertise and of knowledge, there has been an explicit consideration of the nature of the data to be collected. This might have led to an entirely qualitative study. However, Layder (1993, p.111) argues that simple forms of counting can add accuracy to qualitative data and analysis. This is not to say that one can achieve rigour only with quantitative methods. The position taken in this study is that data produced in qualitative approaches is equally rigorous to that achieved by quantitative methods providing that the canons of sound methodology are observed. Layder suggests that the role of quantitative data in a multimethod study can be to complement the qualitative thrust of research in the exploration of concepts and theories. It is this approach that is taken within this study. Whilst the main emphasis of the study remains qualitative, quantitative components are used to explore particular concepts. In particular, the notion of consensus concepts are explored using straightforward statistical analyses. Simple counts are also used to confirm emerging views of the data. The research is therefore *better characterised as multimethod - a technical solution which is increasingly accepted as a pragmatic answer to complex research questions.*

#### **6.1.7. Triangulation**

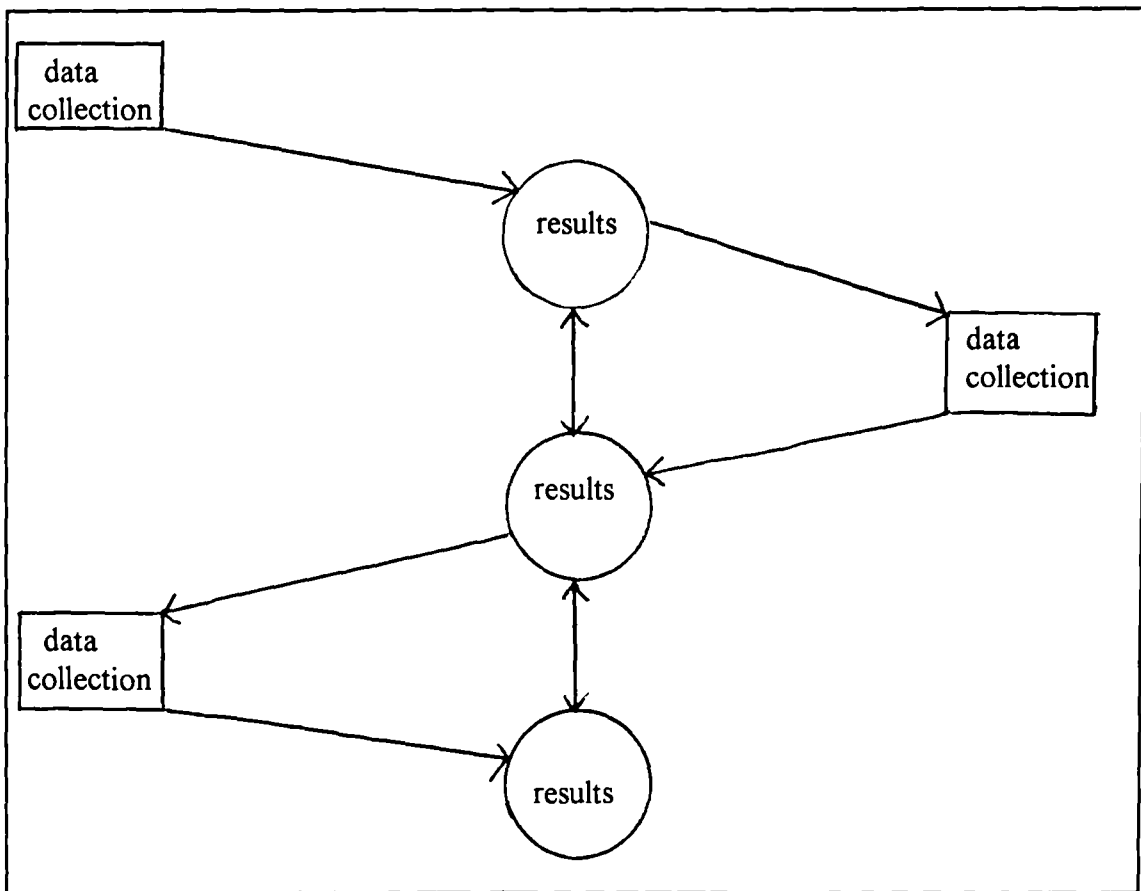
Multimethod research builds on ideas of triangulation whereby "an arsenal of methods" are used to "attack" a research problem from a number of different angles. (Brewer & Hunter, 1989) Figure 6.1 illustrates the concept. Different techniques of data collection are used to investigate the phenomena under question. Techniques are chosen with regard to their respective strengths and weaknesses, building up complimentary sets of data which thus overcome the weaknesses of single method studies. The notion of triangulation therefore seeks to identify the core data and confirm findings from different angles. If the various methods do not confirm each others' findings from their different perspectives, then the validity of the findings are in doubt.



**Figure 6.1 Triangulation**

### **6.1.8. Grounded Theory**

This study draws heavily on Grounded Theory (GT) (Glaser & Strauss, '67) to provide a methodological perspective for the development of a theoretical explanation. Rather than using existing theories to generate specific research questions which are then tested out, GT derives its concepts and categories from the data; that is the resultant theories are 'grounded' in the data. Rather than starting out with a hypothesis to be tested, the research question in a GT study focuses the research and sets out the area of study (Strauss & Corbin, 1990). After an initial data set is established and concepts have been generated, further data is gathered in order to search for instances of those concepts. More abstract categories are sought from the data as well as the relationships between categories and their surrounding circumstances, gradually building up a theoretical framework. Figure 6.2 illustrates this process. So the analysis of one set of data informs the next stage of data collection and as the theory evolves, it is repeatedly fed back into the data collection process in order to confirm and validate the results. The repeated grounding of the emergent categories to some extent answers criticisms of poor repeatability of qualitative research in that evidence is sought for the emergent categories in repeated data sets.



**Figure 6.2 A diagrammatic interpretation of Grounded Theory**

A GT approach does not necessarily use different methods of data collection at each stage. So for example, participant observation might be the method used throughout a study on repeated occasions, engaging the new focus which the previous analysis has provided. In this study however, in order to incorporate the multimethod /triangulation approach, different techniques have been used as the study progressed. Figure 6.3 shows how the principles of GT and triangulation are combined in this study. It also shows the chapters relating to each data collection exercise. At each stage, the results are examined with respect to previous results, looking for confirmation of categories and concepts.

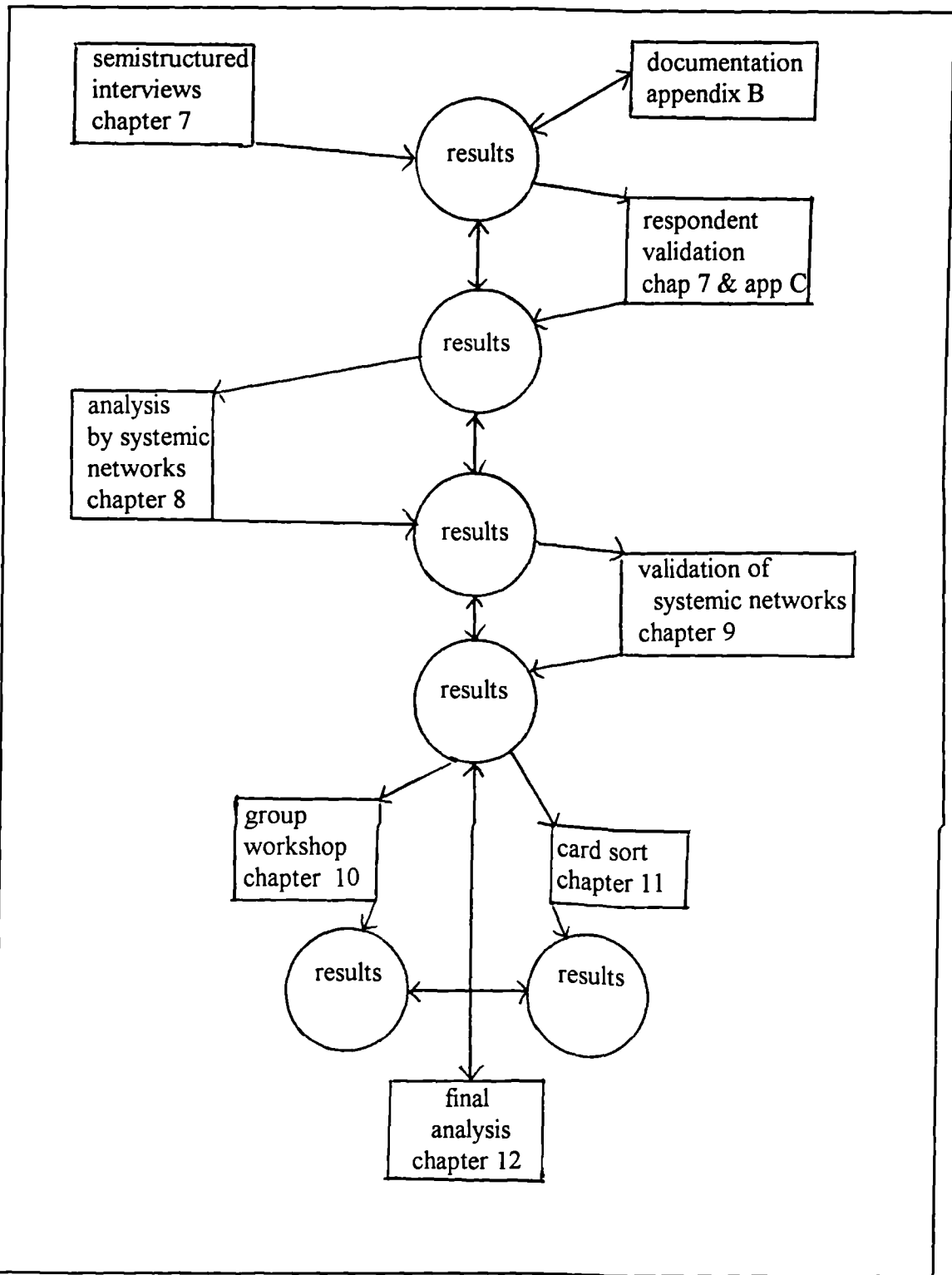


Figure 6.3 Study methodology

### **6.1.9. Respondent validation**

This process also fits in with a knowledge elicitation requirement that the emerging knowledge base is verified and validated not only at the end but during the knowledge elicitation process. (Benbasat & Dhaliwal, 1989). If the end knowledge is to be perceived as useful to slts and representative of the process under scrutiny, then it must be owned by the contributing experts to some degree and must

"fit, have grab and work" in their view. (Baker et.al., 1992).

That is, the categories must relate readily to the data provided and fit the data; the theory must have grab and feel right and relevant to slts; in order to work, the theory must explain what happens in the process and predict adequately what will happen for other slts in the same situation. Opportunities for respondent validation were therefore built into the study whereby results in various forms (for example before or after analysis) are fed back to the subjects for their comments or as probes in further data collection. Subjects therefore have the opportunity to question and correct the researcher's interpretation of the data. Although Bryman (1988) reports that this can cause problems such as censorship or defensive reactions to the interpretation (p.79), the process of respondent validation adds ethical integrity to a study since subjects have access to the results and interpretation and nothing is hidden. Different types of respondent validation are necessary to help respondents evaluate thoroughly. For example, Hart et.al.; (1987, p.179) found that when a flow chart containing a significant error was fed back to the responding expert, the error went unnoticed. They comment that experts are more likely to notice errors or gaps when required to apply the analysis to a real task.

### **6.1.10. Personal involvement**

One of the concerns expressed about qualitative methodologies, particularly participant observation, is that the researcher becomes so involved with the participants and their perspective that they are unable to stand back from the data. This problem, commonly known as "going native" (Bryman, 1988, p.96) is one needing some comment in this study since the researcher, as a slt and therefore a member of the participant group, has in some sense already gone native. Going native is not viewed as entirely negative, and within knowledge elicitation it has some advantages: the researcher is already familiar with the field; a preliminary stage of familiarisation is unnecessary. However, because of the professional background of the researcher, particular care must be taken not to



assume understanding of particular terminology or issues, but to be sure to elicit the subjects' views.

## **6.2. KNOWLEDGE ELICITATION ISSUES**

Knowledge elicitation (ke) is the basic data collection process associated with the first stage in the development of expert systems, whereby the domain expert tells the 'knowledge engineer' what she knows. In the discussions on the nature of knowledge and expertise, a number of issues which must be considered when selecting techniques have been raised; these will be reviewed briefly here, followed by a description of the sample criteria used in the selection of expert slts for the study.

### **6.2.1. Qualitative emphasis**

Rather than forcing the experts to structure their knowledge in a predetermined fashion, the ke techniques chosen must encourage an exploration of the decision from their viewpoint: the techniques should therefore fit within a predominantly qualitative framework.

### **6.2.2. Observation and discussion, concurrent or retrospective**

The literature highlighted difficulties in eliciting tacit knowledge; from that review various recommendations emerged concerning the optimum conditions for knowledge elicitation. Ericsson & Simon (1984) recommend concurrent reporting or, if reports are retrospective, they should follow the action as soon as possible. Hammersley (1990) emphasizes the need to include both direct observation and discussion because of the complex interaction between attitudes and behaviours. Finally, it was argued that, if the reports by experts are generated on the basis of a priori theories and emerge as explanations or justifications, this is acceptable since clinicians provide such justifications as part of their role; the justifications are constructed in order to provide insight into their decision.

### **6.2.3. Knowledge types and knowledge elicitation (ke)**

The literature suggested that there are different types of knowledge to be elicited - domain specific or not, factual or reasoning. The ke literature has a plethora of categorisations of knowledge along with recommended techniques of elicitation.

Gammack & Young (1985) for example, give four different knowledge types (concepts and relations, routine procedures, facts and heuristics, classificatory knowledge) and suggest optimal techniques for their elicitation LaFrance (1987) presents a matrix suggesting the form in which knowledge is stored and the types of interview techniques which might elicit them. For example "grand tour" questions, which provide open-ended broad sweep questions are felt to elicit knowledge stored in the form of "layouts" which incorporate the overview of the task, organisation, procedures and boundaries.

### **6.2.4. Evaluation of techniques**

A number of texts exist (eg, Hoffman, 1990; Kidd, 1987; Bainbridge, 1986; Neale, 1988) which discuss the various techniques in use and their differential effectiveness in the field. These texts will be drawn upon in subsequent chapters as the ke exercises are described. Most of the available texts provide evaluations which are based on their use in particular studies or reflective discussions. Few compare their effectiveness directly with each other in eliciting knowledge within the same domain.

An exception to this is the work of Burton et.al. (1988) (also Shadbolt & Burton, 1990; Rugg et.al., 1992) They compared the efficacy of techniques (interviews, protocol analysis, laddered grids and card sorting activities) in the elicitation of procedural and factual knowledge in the identification of igneous rocks and the identification of fruits. One of the difficulties of carrying out such research as they note, is the problem of how to define 'efficacy'. They used measures of the time taken in the elicitation and subsequent coding, the number of rules elicited and completion of the rule set as compared with a gold standard previously elicited. Of all the techniques, protocol analysis, where experts verbalise their decisions as they solve a problem was found to be most time consuming and least effective in eliciting the necessary rules. No particular method was found to be superior in eliciting either procedural or factual knowledge. Differences were found in how subjects performed relative to personality variables. For example, introverted subjects took longer to complete the rule set in the interview situation but provided more rules and clauses to cover the same amount of information. As the authors acknowledge, their results are difficult to generalise to other domains

where the knowledge base is perhaps less certain or less well structured. For example, the definition includes comparison against a gold standard which is not available within the realm of preschool children's communication disorders. It has been argued that attempting to make explicit a rule set in a complex decision is an unreasonable aim. Similarly, the time taken was based on the possibility of concluding the elicitation process within a single session, whereas it is assumed in this study, that a series of sessions will be needed to develop a theoretical explanation.

However, the results obtained by Burton et al and their colleagues will be integrated into discussions of particular ke exercises where useful in the coming chapters. They concluded that, contrary to the feeling of experts, structured techniques such as laddered grids and card sorts, which

"force the experts' knowledge into unexpected formats"

are actually useful in eliciting the data set. On first reading, this seems to conflict with earlier discussions (section 4.4.1); it was argued that expert systems shells which force the experts' knowledge into particular representations are insufficiently flexible and are likely to miss significant data. However, the latter criticism is related to the prior production of a format into which the expert must fit their knowledge. The former however refers to a novel task which stimulates reflection. Within the laddered grids and card-sort activities, the expert's own way of structuring their knowledge can still be retained within the elicitation. The "unexpected formats" described by Burton et.al. are therefore examples of the surprise situations describe by Schon, since they force experts to use their knowledge in an unexpected way, in the same way that a difficult case would challenge experts to reflect on their knowledge.

The order of use of the various ke techniques in this study and the corresponding chapters was shown in Figure 6.3. In addition to the main activities, opportunities were taken to confirm interpretations and elicit back-up data. A more detailed summary of the data collection techniques is given in figure 6.4. All data collection which required verbal responses from subjects were tape recorded and fully transcribed.

## **6.3. SAMPLE**

### **6.3.1. Single versus multiple experts**

In some reported ke exercises, a single expert was used because of the difficulties of reconciling differences between experts in vocabulary, definitions, problem solving strategies and heuristics. (Cochran et.al., 1990) However, the use of a single subject produces its own difficulties. The coverage of a domain is more difficult to achieve with a single expert (Cochran et.al., 1990) particularly within ill-structured and complex domains (Grabowski et.al.,1992) and even if a range of techniques are used (Shadbolt & Burton, 1990). As suggested above (Hart et.al. 1987), a single expert for example, is not always able to identify errors or gaps in the knowledge base due to limitations of attention or memory (Cochran et.al. 1990), whereas several experts are more likely to cover the whole range of the domain. There is also the time involved in ke; it is widely recognized as a "lengthy and painful process" (Motta et.al., 1990). If this is focused on a sole individual, then the commitment may prove too onerous.

Slts working with preschool children in community clinics constitute the largest group within the profession, so accessing expertise in this domain was not expected to be problematic. Other more esoteric disciplines may not have this luxury and be forced to rely on a single expert. Cochran et. al. also point out that end-user acceptance of a model is likely to increase if multiple experts have been involved in its development: the knowledge base is more likely to reflect the combined knowledge of the domain rather than an individual idiosyncratic opinion. Cochran et.al. (1990) point out the importance of establishing the reasons for variation, and points of convergence and divergence of opinion will be explored within this study. The notion of consensus and variation has been identified as a means of evaluating the incoming data. Since the view of expert knowledge developed in the literature chapter was one of a community of knowledge of the shared perspectives of experts, there was really no alternative but to include more than one expert.

### **6.3.2. Sample size**

As to how many slts should form the sample, there are no conclusive views in the literature. Meyer & Booker recommend between five and nine (1991, p.87). They argue that less than five does not produce sufficient diversity and if group discussions are to be involved, more than nine reduces the viability of the group. For consultative techniques

such as Delphi larger numbers are recommended: Dunn et.al. (1985) for example suggest that at least twenty experts would be needed; sixty eight were used in the Davies & van der Gaag studies which employed Delphi techniques in part (1992, a & b; Davies & van der Gaag, 1992, a & b) although these experts were drawn from three specialist areas within SLT. As Meyer & Booker (1991) conclude, the exact size of sample must to a large degree depend on the techniques chosen.

### **6.3.3. Selection of experts**

Based on criteria suggested by McGraw & Harbison-Briggs (1989) and using the previous literature reviews, criteria were developed for the selection of expert slts. At the first stage of the project, the knowledge domain included slts who had experience across a range of children's disorders. At subsequent stages, the selection process focused on those with particular expertise with preschool children.

#### **Knowledge domain background**

Minimum of five years experience;

To include at least one slt from a training establishment;

To include at least one slt with a relevant postgraduate qualification;

At the second stage, the criteria were further refined to include the following:

At least two years (of the minimum total five years experience) working with preschool children;

Currently working with preschool children in the context of community clinics;

Currently involved in the assessment of preschool children newly referred to community clinics.

#### **Authorisation**

Recognized by peers at a national or local level for their expertise with children's disorders;

Recommended by either CSLT advisers in children's disorders or by members of SLT training establishments or by managers of services known to be involved in policy development regarding the prioritisation of preschool children

#### **Availability**

When contacted the slts were given an outline of the likely time commitment

For the initial data collection, five slts were selected. For the second stage, as well as focusing the knowledge domain requirements, it was decided to increase the sample size to ten in order to increase the diversity within the specialised area. In the end, a group of eleven slts was recruited; different slts took part in different aspects of data collection due to problems of availability such as maternity leave and travel difficulties. The number of slts taking part in each exercise is given in figure 6.4.

Slts were selected from a wide geographical area, from the south coast, Wales, the Midlands, the North, East Anglia, London and the M5 corridor. The eleven slts had received their initial training at ten different establishments, one of which was non-UK. The number of years experience represented by the total sample was more than 130 with a range of 7-20+ for individuals. The final sample included one slit working in a training establishment; in addition all subjects received SLT students on clinical placements either on a regular basis or for block periods. Two slts from the first stage who fell within the tighter knowledge domain definition were still available and agreed to participate in the second stage.

|   |
|---|
| <p>Sample size: 5 expert slts<br/> Main data collection: Semistructured interview (chapter 7)<br/> Additional:<br/> i) confirmatory questionnaire fed back to experts<br/> ii) confirmatory questionnaire completed by 2 SLT dept. (Sample: 6 therapists currently working with preschool children; no criterial level of expertise required)</p> |
| <p>Sample: ten expert slts<br/> Main data collection: analysis of cases using: rating scale, systemic grammar networks. (chapter 8)<br/> Additional: debriefing interviews</p>  |
| <p>Sample: nine expert slts<br/> Main data collection: interactive group discussion based on analysis of videotapes of assessments of preschool children; written formulations made before each stage of discussion (chapter 9 )</p>  |
| <p>Sample: eight expert slts<br/> Main data collection: card sorting of statements about children's communication skills (chapter 10)</p>   |
| <p>Sample: SLT departments in one Regional Health Authority (Appendix B)<br/> Main data collection: documentation of departmental policies and procedures</p>   |

**Figure 6.4 Summary of data collection exercises**

#### **6.4. CONSENSUS AGREEMENT**

It was decided in section 3.8 to use consensus between slts as an indication of expertise and shared professional knowledge. A general methodological consideration must therefore provide a definition of consensus. The study will use mainly quantitative means to explore consensus. Quantitative definitions of consensus varies. Van der Gaag & Davies (1992 a& b; Davies & van der Gaag, 1992 a& b) for example, set 50% as their level: items mentioned by more than 50% of slts or regarded as essential by more than

50%. Records & Tomblin (1994), using the kappa statistic, show the degree of consensus rather than setting a specific level, differentiating for example, between substantial consensus at 75% agreement or low consensus, between 75% and 25% agreement. Sacket et.al. (1991, p.30) note the qualitative terms commonly associated with kappa scores as follows:

- 0.0 - 0.2: slight agreement
- 0.2 - 0.4: fair
- 0.4 - 0.6: moderate
- 0.6 - 0.8: substantial
- 0.8 - 1.0: almost perfect

In this current study, kappa is not used and agreement between slts is measured mostly in percentages. The level set at which consensus is said to occur is mostly 75%; this follows Records & Tomblin (1994) and the view that this would fall within the kappa 'substantial' range. Early in the study, 50% level is also reported in order to show a broader sweep of results, particularly where the number of slts is very small.

Kendall's coefficient of concordance (Siegel & Castellan, 1988) and the statistic chi-square are also used in the investigation of agreement. Where differences can be shown to be significant, this may shed light on the reason for those differences.

Finally, there are places in the study where agreement between slts is not investigated quantitatively. Instead qualitative data is analysed for evidence of open verbal agreement and disagreement.

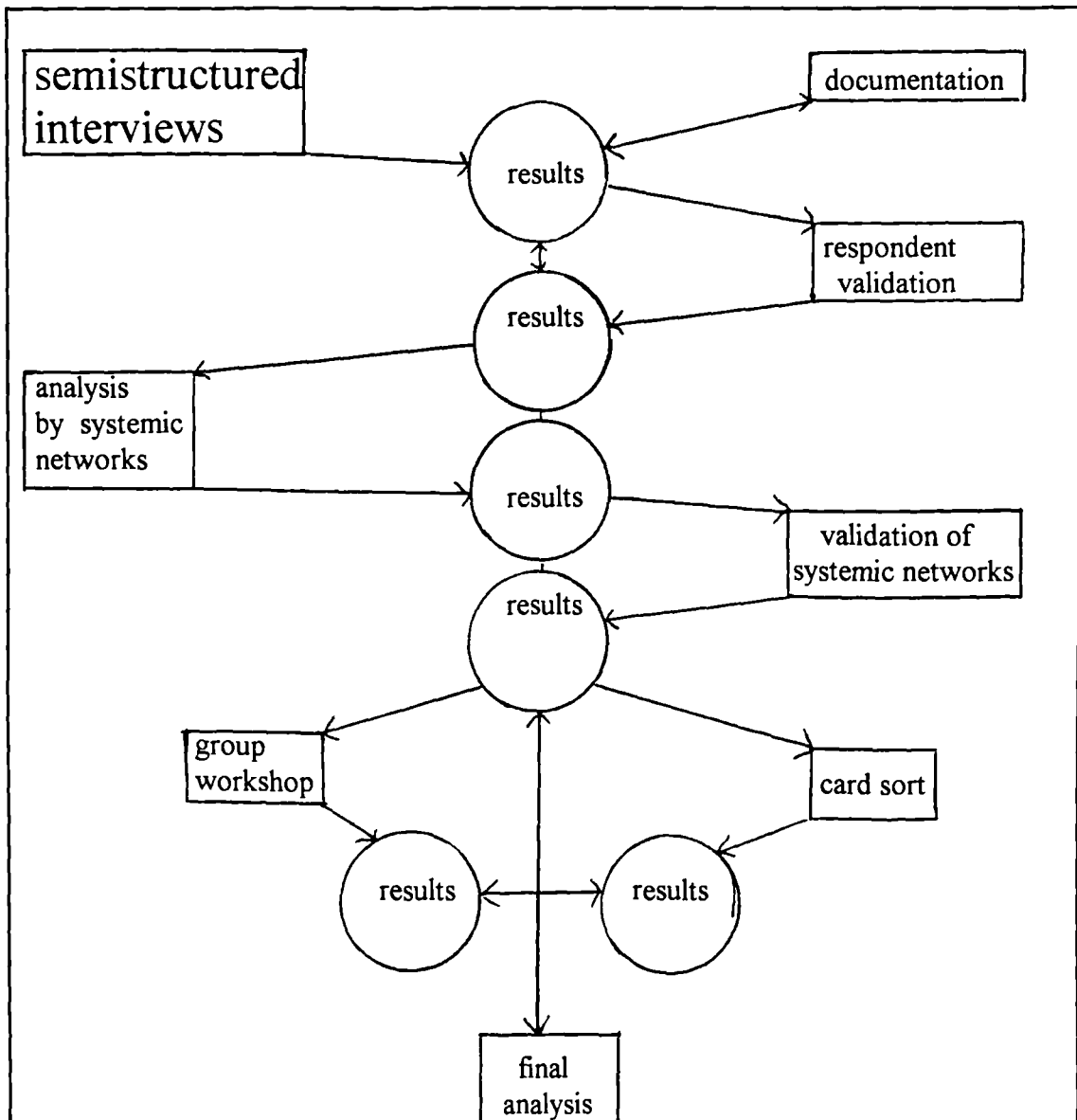
## **6.5. CONCLUSIONS**

Issues raised in the literature review have been discussed in the shaping of a methodological framework for the study. The final design was a qualitative emphasis but one which also, pragmatically, accepted a role for quantitative methods. The combination of the two results in a multimethod study, using not only different techniques to collect data, but varying methodological emphases depending on the questions to be asked. Some would regard such diversity as riding the tiger and indeed, coming from a positivist tradition, it took some time to feel at ease with and fully cognisant with qualitative approaches. The result however, was not only a learning experience for the author, but a sturdier design which incorporates strengths from different fields and gives the flexibility needed for the investigation of a complex topic.

The chapter also provides the reader with a guide as to the structure and progression of the study through diagrammatic explanation of the data collection stages. Figure 6.3 appears throughout the thesis to orientate the reader.

# PART 2: THE FIELD WORK

## CHAPTER SEVEN INITIAL DATA COLLECTION: THE SEMISTRUCTURED INTERVIEW & RESPONDENT VALIDATION





## **7.0. INTRODUCTION**

This chapter begins the reports, five in all, of the data collection exercises. It describes how a small sample of expert slts were observed and interviewed using a semistructured format, in order to generate an initial data set. The questioning techniques of Personal Construct Theory (PCT), used in the interview are explained and illustrated from the data. The chapter presents the preliminary analysis of interview transcripts and the categories that emerged. These categories are viewed as the main areas investigated by slts which discriminate between priority and nonpriority children at their first assessment. Three confirmatory exercises were carried out as part of the policy of respondent validation which is pursued through the study. These small scale exercises are described in detail in appendix C; this chapter provides a summary which shows their contribution to the verification of categories identified and the discussion of consensus between slts. The discussion of the results focuses briefly on the methodology and then on the main questions for this data set: the clinical factors emerging from the data and their significance in the selection of preschool children for intervention. The discussion also considers factors affecting agreement between slts.

### **7.1. AIMS**

As the first stage of knowledge elicitation (ke), and following a Grounded Theory (GT) model, the aim was to establish an initial data set in order to generate categories appropriate to the initial assessment of preschoolers by slts. It was also planned to subject early analyses to a process of respondent validation. The specific aims were as follows:

1. To identify the range of factors which discriminate between priority and nonpriority children and are considered by slts as they conduct their initial assessment of a preschool child;
2. To elicit from slts, nonclinical and contextual factors that they considered influenced their decisions whether consciously or not.
3. To feedback to participating slts and to a wider sample the categories elicited for confirmation of their appropriateness for this decision task.

## **7.2. METHODOLOGICAL CONSIDERATIONS**

### **7.2.1. Interviews as knowledge elicitation (ke) techniques**

Face-to-face interviewing between researcher and expert is a commonly used ke technique, particularly at an initial stage of establishing rapport, orienting the researcher and eliciting the basic vocabulary and terminology of the domain. (Neale, 1988; Meyer & Booker, 1991) However, Hoffman, (1990) suggests that the use of largely unstructured interviews in the early history of expert systems development may well have made the reputed 'bottleneck' of ke greater than it really was. Completely unstructured interviews are regarded as less effective since, in posing no constraints on the expert, they produce large amounts of unfocused information which are then time-consuming and complex to analyse. In efforts to temper the amount of "noise" generated within an interview (Motta et.al. 1990), various structures have been used. Tutorial interviews (Gammack, 1987) for example, require the expert to prepare, in advance, a seminar presentation of the domain. Teachback interviewing (Johnson & Johnson, 1987) requires the expert to set the agenda and lead the selection of topics. As knowledge is elicited, the researcher is required to 'teach' the procedure back to the expert until the expert is satisfied with the researcher's formulation. Generally, interviews containing some level of structure are regarded as effective ke techniques. They compare favourably with protocol analysis and are no more time-consuming than card sorting and laddered grid exercises; they are equally effective in the elicitation of rules in simple identification tasks (eg the identification of igneous rocks and of fruits, Burton et.al., 1988; Shadbolt & Burton, 1990).

### **7.2.2. Observation and immediate verbal reporting**

It was therefore decided to use a semi-structured interview task for the first stage of ke in this study. Following the methodological considerations discussed in section 6.2.2, it was decided to use observation of slts' initial assessment and their immediate verbal reports of their decision as a reference point for the subsequent interview. In this way, slts' own actions and interpretations of those actions acted as a starting point for further probes into their views of significant information.

### 7.2.3. Personal Construct Theory (PCT)

The questioning procedures used for the interviews were taken from the field of construct psychology. Based on the work of Kelly (1955), various techniques are used to elicit a person's constructs about the world. These constructs are considered to be bipolar contrasts by which the individual interprets and anticipates events in the surrounding world. When applied to this situation, the interview sought to elicit significant constructs from slts regarding the way they construe the problem of deciding which children to prioritise for intervention. The observation session and the slts' report provided a source of potential constructs; the questioning sought to elucidate these further by exploring superordinate and subordinate connections through the process of laddering and pyramiding respectively. These two techniques are explained below (section 7.3.2-.3).

Although using techniques such as laddering and pyramiding might be regarded as unduly restrictive for a ke task in terms of the type of knowledge they elicit, it was felt to be appropriate for this stage for a number of reasons:

- i) The project intended several stages and methods of ke unlike some studies which focus on a single session. Subsequent data collection could therefore fill in gaps in the knowledge elicited and compensate for any weaknesses.
- ii) As shown below, it was not intended that the techniques be used rigidly during the interview but act as a starting point to focus slts' discussion.
- iii) At this stage of ke, the interviews focused on a simple dichotomous decision: will the child be prioritised for therapy or not. The notion of dichotomous relationships forms part of PCT in that constructs are regarded as having two poles, not necessarily opposites as in the notional intervention decision presented here, but nonetheless as contrasts which enable

"discrimination between similar and dissimilar" (Dalton & Dunnett, 1990 p. 11).

- iv) Although PCT stresses the individuality of someone's construct system, the 'personal', it also acknowledges the social in as far as the individual must make sense of another's constructions of the world in order to interact. Dalton & Dunnett note that

"the more one begins to understand someone else's system, the larger social role one is likely to play in relation to them " (1990, p. 14).

So, whilst stressing the individual, the need to develop shared understandings is acknowledged. This fits in with the discussion of SLT knowledge in section 3.2: that slts develop a shared view of the world whilst maintaining a level of individuality and creativity.

v) The discussion in section 3.6 concluded that expert's knowledge can be viewed in terms of the underlying meanings that inform behaviours. PCT techniques were felt to be appropriate for the investigation since they also focus on the respondent's construction of the world. The knowledge elicited through PCT therefore would not just be a simple list of factors considered, but the significance of those factors for the slts themselves.

vi) Finally PCT supports a hierarchical construction of the world where concrete constructs are subsumed under progressively more abstract ones. It has been argued that experts' knowledge is complexly structured with some knowledge becoming subsumed within higher level structures. The questioning techniques of PCT, designed to explore higher and lower order constructs were therefore felt to be appropriate.

So whilst not wishing to espouse PCT as a strong theory in this study it was felt that the fundamental postulate and corollaries of PCT were sufficiently in tune with the views of expertise developed in chapter three to make the use of the questioning techniques appropriate.

#### **7.2.4. Researcher skills**

In many ke texts the skill of the interviewer is stressed and specific training is recommended. The author was not trained specifically in ke techniques or in PCT techniques, but has had a range of other communication skills training and experience including personnel interviewing, industrial negotiation, case history interviewing and counselling techniques. In the event, eliciting the views of the slts did not prove difficult: the slts were forthcoming and happy to discuss their decisions. One slt remarked on how stimulating it was to have the chance to discuss her work in such detail. However, the task of keeping track of the responses through the interview and maintaining and following through particular ideas proved more difficult because of the volume of information often provided by the experts.

## 7.3. PROCEDURE

### 7.3.1. Sample

Details of the sample for this stage of the project were presented in section 6.3.3. In brief, five slts were identified as experts in the field of children's disorders. At this stage it was decided to maintain the broader expertise range of children's disorders in order not to narrow the focus too early in the study.

### 7.3.2. Questioning techniques: Laddering

Laddering explores the superordinate, more abstract hierarchy of a construct (Dalton & Dunnett, 1990) by asking questions such as 'why is that important to you, what is that an example of, what kind of client would that be'. Figure 7.1 gives an example of laddering from the data.

```
Expert: I'm looking for abnormal play..obsessive for example.  
Researcher: Why is that something you look at?  
Expert: Because I see that as a negative thing if the play was delayed or abnormal  
in some way, then I would look more closely.  
Researcher: Why does that act as a negative influence for you?  
Expert:Because I think a lot of severe language disorders are linked to abnormal  
play and also because of the link between language and symbolic play and I think  
the therapist can start working on play to influence the language and that can be  
a starting point.
```

**Figure 7.1. Example of laddering from the data.**

### 7.3.3. Questioning techniques: Pyramiding

Pyramiding on the other hand leads the respondent down the hierarchy to subordinate constructs. (Dalton & Dunnett, 1990) Typical questions might be 'Can you give me an example of that, how would you identify one of those'. Figure 7.2 gives an example of pyramiding from the data.

```
Expert: If a dysfluent child is aware he is more of a priority.  
Researcher: How might you identify the child's awareness?  
Expert: How they approach communication as a whole, whether they're confident... I  
think it's a very subjective judgement.  
Researcher: Are there any children you can think of who are not aware that you  
could use as an example?  
Expert: There is a 6 year old girl who talks incessantly...
```

**Figure 7.2. Example of pyramiding from the data.**

### 7.3.4. Reflective comments

In fact, in many instances the expert slts responded at length to the probe questions and within the interaction it was difficult to identify a particular 'construct' to pursue. In these

situations a more reflective approach was used, where the expert's response was restated in the researcher's own words, to check understanding and to feed back what had been understood; if at any point the researcher was not able to restate, the expert was asked to clarify or expand what had been said so far. This often acted as a stimulus to further responses and specific laddering and pyramiding questions were always not needed to elicit further explanation and definitions. Figure 7.3 shows an example of such an interaction.

*Researcher:* You asked about the birth history. Why?  
*Expert:* I'm really looking for whether they went in SCBU - possibilities of the child having anoxia or the mother had problems in pregnancy....Something I didn't ask this child which I normally would ask is about feeding...  
*Researcher:* Why are you interested in those things?  
*Expert:* I think they're alerting me to the possibility of a general delay or a fairly major problem. I'm looking for a medical reason for the delay, if medical's the right word...one's a medical thing, have they had epileptic fits, that's a warning sign to me and its an emotional thing so I usually ask were they upset when they came out of hospital  
*Researcher:* Would it influence your decision to take them on or not?  
*Expert:* Yes that would. If I felt there were emotional problems that were now being resolved, then I would be less inclined to take them on. So for example, I've had a child with severe language delay, three, using single words but he'd been on intensive care twice and had nearly died and been in hospital about nine times altogether and the mum was very anxious about asthma attacks he kept having, but actually things were settling down now and you could see the child changing emotionally, becoming happier, so when I heard that I said to the Mum, going to the hospital is disturbing for children and its maybe halted him a bit but he's going to make up ground. So I felt that was a family disturbance that may account for the language delay.  
*Researcher:* So you're saying that if there are things in the history that account for the delay, that are now sorted out, that may influence you in a positive way.  
*Expert:* Yes. Obviously it wouldn't if the child was so severe as to warrant further investigation or there was something very odd about the child, but its a factor.

**Figure 7.3. Extract from interview, showing mix of questioning and responses**

The techniques from PCT therefore acted as a kick-start to the interviews but were not used rigidly to constrain the information that the experts wished to give. This variation in questioning techniques was viewed positively in that potentially it facilitated the elicitation of a range of knowledge rather than constraining it to a particular level or type of knowledge.

### **7.3.5. Interview format:**

Slts were observed during an initial assessment session with a preschool child and their carer. During the session, the researcher made notes on:

- questions asked by the slt
- indications of the responses made by the carer/child
- activities carried out by participants.

On completion of the session with the child, slts were asked to review and explain their decision as a starting point for the interview. All interviews were audiotaped and notes

were taken during the session. These notes were used to help keep track of the areas for questioning during the interview and also to help with subsequent transcription. They proved vital in two interviews where the quality of the taping was poor due to excessive background noise.

After slts had completed their own review of their decision, the interview was continued using questions and activities that slts had used during the assessment session as a focus for further questioning. The extract given in figure 7.3 illustrates this. Responses to these questions were followed through with laddering and pyramiding questions and with reflective responses as indicated above. Finally, slts were asked to state any other factors they thought were influential that had not already been discussed. One slt was unable to provide a child for assessment. The interview was therefore started with an open question: 'what factors do you consider important when you are assessing a preschool child'. Her responses acted as a starting point and were pursued in the same way as other interviews.

## 7.4. RESULTS

Observation and interview sessions lasted a maximum of 3 hours 40 minutes and a minimum of 1 hour 30 minutes. Audiotapes and notes were transcribed and written up within 24 hours of the interview. An example of a full transcript is given in appendix A. Figure 7.4 gives an extract from one slt's verbal report at the end of the observation session. These transcripts were sent back to the expert for their comments and amendments. (see section 7.5.1)

When the foster mother mentioned the epileptic attack, that made me think there may be more to this than meets the eye... then she mentioned the glue ear and the possibility of him having a conductive hearing loss...I think about him positively because the conductive loss that had been undetected would explain the way he behaves or his speech and language...

**Figure 4. Extract of a slt's verbal report**

### 7.4.1. Clinical factors

The analysis of the interview data took place in two stages. The preliminary analysis reported in this chapter, centred on the identification of the areas investigated by slts, in particular, those factors which discriminated between priority and non-priority children. Interview transcripts were read and re-read in order to identify the main theme of each paragraph. These were collated and are shown in figure 7.5.

|  |
|--|
| Information contained in the referral letter |
| Child's interaction with therapist           |
| Child's interaction with parent/carer        |
| Age of child                                 |
| Child's attention                            |
| Parent/carer's ability/desire to co-operate  |
| Severity of child's problem                  |
| Child's comprehension                        |
| Diagnostic category of communication problem |
| Developmental history: language              |
| Developmental history: general               |
| Emotional problems                           |
| Behaviour problems                           |
| Other professional involvement               |
| Other provision (eg nursery attendance)      |
| Parenting skills                             |
| Child's cognitive level                      |
| Presence of motor problems                   |
| Prognosis                                    |
| Intelligibility                              |
| Amount of progress                           |
| Expressive language quality                  |
| Expressive language quantity                 |
| Hearing problems                             |
| Perceived effectiveness of intervention      |
| Environmental issues/influences              |
| Child's ability to cope with therapy         |
| Child's awareness of problem                 |
| Child's motivation to change                 |
| Family history of communication difficulties |
| Medical history                              |
| Views of other professionals                 |

**Figure 7.5 Main clinical factors considered during assessment**

As with the transcripts, this list of clinical factors was fed back to the participating experts. At this stage no attempt was made to work out hierarchies in the clinical factors or to rule out overlapping areas. So for example, prognosis could be regarded as a higher level construct than the child's level of comprehension, since the latter would be used in evaluating prognosis.

#### **7.4.2. Nonclinical factors and management options**

In addition to the clinical items relating to the child and family, a range of contextual and nonclinical influences were also elicited along with the range of management options



As the analysis progressed, the range of factors was altered slightly better to reflect the emphasis in the data. So for example, in the first set of 32 factors (Figure 7.5) 'play' was not listed as a separate heading; however, it was felt that the emphasis given in the data was such that it should be given as a separate heading, in the same way that 'attention' had been separated out from general cognition. In this further stage of analysis, the beginnings of a hierarchy were established: the headings elicited were grouped under categories typical of those found in case history formats within SLT; subsumed within each heading from the data were statements made to explain or define that heading. Figure 7.11 shows the case history categories, the particular clinical factors and examples of statements for each factor. These formed the basis of a third level of confirmation of this data. Further analysis of the transcripts is reported in the next chapter.

|  |
|--|
| <p><u>Case background</u></p> <ul style="list-style-type: none"> <li>the referral letter (<i>referral indicated severity</i>)</li> <li>the child's language development history (<i>child babbled as a baby</i>)</li> <li>the child's general development (<i>sat at average age</i>)</li> <li>progress the child has made (<i>increase in single word vocabulary</i>)</li> <li>the child's hearing (<i>on waiting list for hearing test</i>)</li> <li>relevant family history (<i>sibling had spontaneously resolving language delay</i>)</li> <li>relevant medical history (<i>hospitalisation</i>)</li> <li>views of other professionals (<i>concern expressed by nursery staff</i>)</li> <li>involvement of other professionals (<i>has already seen many other professions</i>)</li> <li>other provision available to the child (<i>currently attending nursery full-time</i>)</li> </ul> |
| <p><u>Communication</u></p> <ul style="list-style-type: none"> <li>the child's comprehension (<i>able to select objects at a single word level</i>)</li> <li>qualitative aspects of the child's expressive language (<i>using 3-4 word utterances</i>)</li> <li>the child's speech (<i>can copy sounds in isolation</i>)</li> <li>quantitative aspects of the child's expressive language (<i>silent throughout the session</i>)</li> <li>intelligibility (<i>intelligible to parent all the time</i>)</li> <li>the child's interaction with the therapist (<i>made eye contact with therapist</i>)</li> <li>the child's interaction with the carer (<i>initiated communication with mother</i>)</li> </ul>  |
| <p><u>General assessment</u></p> <ul style="list-style-type: none"> <li>attention (<i>responds to normal management strategies</i>)</li> <li>cognition (<i>cognitive abilities are at a similar level to speech &amp; language</i>)</li> <li>motor development (<i>sitting and walking milestones are within normal limits</i>)</li> <li>play (<i>sequential play used during session</i>)</li> <li>modifications of behaviour which the therapist has to make (<i>has to remain in background in order to establish interaction in the clinic</i>)</li> <li>the child's emotional status (<i>jealous of siblings</i>)</li> <li>the child's behaviour (<i>biting</i>)</li> </ul>   |
| <p><u>Parents/carers/environment</u></p> <ul style="list-style-type: none"> <li>parent's view of the problem (<i>compared child to others in family</i>)</li> <li>parenting skills (<i>parent observed using appropriate level of language with child</i>)</li> <li>parent's co-operation (<i>prepared to attend for further appointments</i>)</li> <li>general environmental issues (<i>has a range of toys at home</i>)</li> </ul>   |
| <p><u>Child</u></p> <ul style="list-style-type: none"> <li>child's ability to cope with therapy (<i>exceptionally shy and withdrawn</i>)</li> <li>child's awareness of the communication problem (<i>clams up when not understood</i>)</li> <li>child's motivation to change his/her communication (<i>unconcerned about difficulties</i>)</li> </ul>  |
| <p><u>Decision summary</u></p> <ul style="list-style-type: none"> <li>prognosis (<i>causative factors resolving spontaneously</i>)</li> <li>predicted effectiveness of intervention (<i>intervention likely to improve communication environment</i>)</li> <li>diagnostic category (<i>language delay</i>)</li> <li>severity of communication problem (<i>mild, moderate</i>)</li> </ul>   |

**Figure 7.11 Categories and factors with examples of associated statements considered during preschool assessments**

## **7.5. RESPONDENT VALIDATION**

A methodological policy of the study was to return data and interpretations of data to participating slts for their comments. At this stage of the project, the aim was to confirm the range of data collected, its relevance to the decision under scrutiny and to identify any major omissions. As indicated in the preceding sections, this was done in three ways, summarised below. The main results are summarised here with further details in appendix C.

### **7.5.1. Respondent validation 1 (RV1): Transcripts**

Interviews were written up within twenty four hours and sent back to the therapist for confirmation and correction.

### **7.5.2. RV2: Main factors questionnaire**

The main factors of significance (fig 7.5) were listed in questionnaire form. (Appendix C) The five slts were asked to indicate whether information from these areas would influence their decision to take a child on for therapy - always, often, sometimes, rarely or never. They were also asked to identify the ten most important factors in order. In the event, one of the experts had left the country; a replacement was recruited from the Bristol area following the same criteria as before.

### **7.5.3. RV3: Detailed descriptions of factors**

A much larger questionnaire, consisting of the slts statements, collated and grouped according to the main factors (fig 7.11) was distributed to slts from two NHS Trusts (originally a single health authority). In a personal visit to each slt, either individually or within a staff meeting, the questionnaire was explained. Slts were asked to complete a questionnaire for each of their next two initial assessments of preschool children, which asked whether or not a statement were true of a particular child, if it was, how influential was it in the slt's decision and did it make the slt more or less likely to prioritise the child. In addition, therapists were encouraged to comment on any items which they found ambiguous and to add any other factors they considered. (appendix C)

## **7.6. RESPONDENT VALIDATION: SUMMARY OF THE MAIN RESULTS**

Detailed analyses for the RV exercises are reported in appendix C. The purpose of the RV exercises was to validate the interview data. The results are therefore summarised to address this issue by looking at four key issues: coverage of the domain, the relevance of the data to the task, agreement between slts about the importance of items and confirmation of the association of items with priority and nonpriority children.

### **7.6.1. Coverage**

Correction to the original transcripts of the interviews were relatively minor and amounted to clarifications by slts of comments they had made during the interviews. Slts expressed concern over how difficult the exercise had been and some dismay over their own perceived lack of clarity. Additions and comments on the questionnaires focused mainly on their format rather than content. No major omissions were identified and coverage of the domain was concluded to be comprehensive.

### **7.6.2. Relevant items**

As a way of determining whether or not the interviews had identified issues that were relevant to the selection and prioritisation decision, slts had been asked to indicate the importance of items to their decision. Figure 7.12 shows all the factors covered in the interviews which were presented in the two questionnaires. 80% of items were noted as important by more than 50% of slts at some point. 49% were rated as important on more than 75% of the occasions they were used. That is, if an item was considered by the slts, then nearly half were viewed as important for 75% of the time. Whilst some items were not rated as important or were not used by some slts, it was clear that they could not be entirely ruled out. As one slt remarked

"..at some stage all of these factors are important"

implying that with a larger sample of slts or children, all the items would be relevant at some point.

|   |
|---|
| <p><u>Case background</u></p> <ul style="list-style-type: none"> <li>*the referral letter (<i>referral indicated severity</i>)</li> <li>*the child's language development history (<i>child babbled as a baby</i>)</li> <li>*the child's general development (<i>sat at average age</i>)</li> <li>*#progress the child has made (<i>increase in single word vocabulary</i>)</li> <li>*#the child's hearing (<i>on waiting list for hearing test</i>)</li> <li>  relevant family history (<i>sibling had spontaneously resolving language delay</i>)</li> <li>  relevant medical history (<i>hospitalisation</i>)</li> <li>  views of other professionals (<i>concern expressed by nursery staff</i>)</li> <li>*#involvement of other professionals (<i>has already seen many other professions</i>)</li> <li>*#other provision available to the child (<i>currently attending nursery full-time</i>)</li> </ul> |
| <p><u>Communication</u></p> <ul style="list-style-type: none"> <li>*#the child's comprehension (<i>able to select objects at a single word level</i>)</li> <li>*#qualitative aspects of the child's expressive language (<i>using 3-4 word utterances</i>)</li> <li>  the child's speech (<i>can copy sounds in isolation</i>)</li> <li>*quantitative aspects of the child's expressive language (<i>silent throughout the session</i>)</li> <li>*#intelligibility (<i>intelligible to parent all the time</i>)</li> <li>*the child's interaction with the therapist (<i>made eye contact with therapist</i>)</li> <li>*the child's interaction with the carer (<i>initiated communication with mother</i>)</li> </ul>  |
| <p><u>General assessment</u></p> <ul style="list-style-type: none"> <li>*#attention (<i>responds to normal management strategies</i>)</li> <li>*#cognition (<i>cognitive abilities are at a similar level to speech &amp; language</i>)</li> <li>  motor development (<i>sitting and walking milestones are within normal limits</i>)</li> <li>*#play (<i>sequential play used during session</i>)</li> <li>*modifications of behaviour which the therapist has to make (<i>has to remain in background in order to establish interaction in the clinic</i>)</li> <li>*the child's emotional status (<i>jealous of siblings</i>)</li> <li>*the child's behaviour (<i>biting</i>)</li> </ul>   |
| <p><u>Parents/carers/environment</u></p> <ul style="list-style-type: none"> <li>*parent's view of the problem (<i>compared child to others in family</i>)</li> <li>*#parenting skills (<i>parent observed using appropriate level of language with child</i>)</li> <li>*#parent's co-operation (<i>prepared to attend for further appointments</i>)</li> <li>*general environmental issues (<i>has a range of toys at home</i>)</li> </ul>  |
| <p><u>Child</u></p> <ul style="list-style-type: none"> <li>*#child's ability to cope with therapy (<i>exceptionally shy and withdrawn</i>)</li> <li>*#child's awareness of the communication problem (<i>clams up when not understood</i>)</li> <li>  child's motivation to change his/her communication (<i>unconcerned about difficulties</i>)</li> </ul>   |
| <p><u>Decision summary</u></p> <ul style="list-style-type: none"> <li>*#prognosis (<i>causative factors resolving spontaneously</i>)</li> <li>*#predicted effectiveness of intervention (<i>intervention likely to improve communication environment</i>)</li> <li>*diagnostic category (<i>language delay</i>)</li> <li>*#severity of communication problem (<i>mild, moderate</i>)</li> </ul>   |

**Figure 7.12 Important factors**

**\* rated as important by more than 50% of slts**

**# rated as important more than 75% of the time**

**7.6.3. Agreement**

Agreement between slts on RV2 was investigated in order to identify reasons for variation. Those slts with the highest agreement scores came from closer geographical proximity, though they worked within different Trusts. The pair with the highest scores were the only slts within this sample to spend all their working time within community clinics. Other slts had some other speciality involvement.

#### 7.6.4. Priority or nonpriority

In RV3, slts had indicated whether items made them more likely to prioritise a child or not. The interpretation of some items was obviously dependent on context whereas others were only associated with priority or nonpriority decisions. Only those items rated as important were included in this analysis. These items are fully listed in appendix C. Since the preliminary analysis had also separated such items, it was possible to use the questionnaire results as a direct confirmation of the interview results. Figure 7.13 shows those items relating to expressive language quality and quantity. A comparison of these with figure 7.10 shows no contradictions and a marked similarity between the two, particularly when it is considered that figure 7.10 shows the responses of only one slt.

|  |
|--|
| <u>Items associated with a priority decision</u><br>does not hold a conversation<br>cannot answer questions<br>responses are not prompt<br>used less than 20 utterances during the session |
| <u>Items associated with a nonpriority decision</u><br>holds a conversation<br>can answer questions<br>responses are prompt  |

**Figure 7.13 Questionnaire items associated with priority/nonpriority decisions**

### 7.7. DISCUSSION

The aim of this data collection stage was to generate an initial set of categories, of relevance to the selection and prioritisation of preschool children for SLT. The discussion will therefore reflect upon the categories elicited in terms of their coverage, their relationship to slts' actions and parallels with the literature on children's communication disorders. Consensus between slts will also be considered.

As a starting point it is helpful to comment on the elicitation process itself.

#### 7.7.1. A reflective process

The semistructured interviews and the respondent validation exercises that followed, functioned well as stimuli to reflection, a process noted in the literature as necessary to the identification of underlying theories of action. Slts participated willingly in all aspects of this stage of data collection; they were interested in the process and keen to discuss issues. The fact that the researcher was a fellow slt may have added to the level of interest in that the experts were able to discuss their special interest at a reasonably high level because a certain level of background knowledge could be assumed. Nevertheless,

the process was not an easy one and there were frequent comments about the difficulty of making detailed operational definitions explicit. Conducting the interviews after real assessments and basing a questionnaire on real cases helped this reflective process and allowed slts to give more precise details. For example in RV2, the absence of a specific heading for 'play' passed without comment. Whilst slts may have assumed it to be included within 'cognitive abilities', this did not really match the emphasis in the interview data. When this was added into the questionnaire explicitly in RV3, 'play' was rated as one of the important features. As Hart et. al. (1987) concluded therefore, it can be difficult to evaluate flow charts and diagrams without real cases to stimulate and contextualise the reflection.

### **7.7.2. Comprehensive coverage**

The combination of observation as a starting point for the interviews, along with respondent validation in the context of real cases, therefore facilitated reflection by the expert slts and the elicitation of a full range of relevant factors.

However, it cannot be said that any one individual's construct system relating to the decision was fully explored: because a variety of questioning techniques were used each construct was not followed through to the absolute limits. Nevertheless, the flexible use of questioning techniques and the three respondent validation exercises gave the slt experts opportunities at several stages to add to the categories, to correct and influence the vocabulary used and the researcher's interpretation of the data, resulting in a comprehensive coverage of the field.

### **7.7.3. Grounded in action**

Slts spoke about a wide range of factors which they considered during the assessment of a preschool child. If these had all been elicited from discussion only, it might be argued that all are not considered within the assessment process. Yet, with the exception of one interview, the starting point for each discussion was an action or question used by the slt within a live assessment session. The emergent factors therefore have a reality based not only in what slts report that they do, but in what they are observed to do. However, because several slts discussed several children, the resultant categories represent the total possible, rather than those appropriate to a single child or type of disorder, although of course, they have in common their relevance to the preschool population.

#### 7.7.4. Parallels with children's communication disorders literature

The categories identified tied in closely with the literature on children's communication disorders. For example, several authors point to the severity of the child's difficulties as a key predictor of outcome (Rescorla & Schwarz, 1990; Whitehurst & Fischel, 1994; Rutter, 1987). Severity was frequently cited as important in the interviews and in the respondent validation exercises. Other key factors identified, such as the child's intellectual development (Whitehurst & Fischel, 1994; Rutter, 1987), receptive language (Whitehurst & Fischel, 1994, Rutter, 1987; Paul et al, 1991) socialisation (Paul et al, 1991), patterns and progress of language development, medical conditions (Rutter, 1987; Whitehurst & Fischel, 1994) as well as the environmental influences such as maternal linguistic input (Paul & Elwood, 1991; Whitehurst & Fischel, 1994) were all identified by the slt sample. The relatively low emphasis by this sample of slts on motor development and medical history may reflect the type of caseload more commonly seen in community clinics and therefore forming the major, although not exclusive, emphasis of this sample: children with more severe and identifiable conditions such as cerebral palsy, mental handicap, epilepsy may well be identified via other routes and be referred to slts working in different contexts. Family history, likewise, received a relatively low emphasis although still regarded as important. This may reflect the debate in the literature about its relevance (Whitehurst et.al., 1991). Olswang & Bain, (1991) argue that the crucial issue in determining a child's eligibility for intervention is the balance between a child's communication difficulties and their potential for change. The results here suggest that slts do indeed consider wider factors than purely the clinical presentation of the child. For example, the range of other professionals involved and other provision available were noted as particularly important, as was the likely effectiveness of intervention. When these are placed alongside factors such as prognosis and severity, it seems as if slts are engaged in some kind of cost-benefits analysis. Figure 7.14 gives an extract from an interview which shows something of this kind of reasoning.

...there's a lot of other professionals involved...the timing of intervention wouldn't be right...she's got enough on her plate and I think the invasion of another professional.. would be too much.. an added complication that would hinder rather than help...once a week is like a drop in the ocean unless you're going to have support from home by the family, then any therapy is going to be unsuccessful right from the start..

**Figure 7.14 Extract from interview. Cost benefit reasoning**

### **7.7.5. Context**

One of the aims of the initial data collection was to identify relevant contextual and nonclinical factors which influence slts' decisions. At this stage in the project, such factors were merely noted in the texts and indexed for future consideration. The exercise which followed up this aspect is given in appendix B.

### **7.7.6. Agreement and variation**

Although consensus was apparent between slts about the range of factors considered, agreement varied in terms of which factors were given prominence. So for example, it was reported above that slts working exclusively in community clinics agreed most about the relative importance of factors. Differences were also apparent in the interpretation of some factors. Some of these were undoubtedly due to the context of the item in a particular child. For example, the item "parent responds appropriately to suggestions from slt" was used in support of decisions for and against intervention. From the interview data it is possible to understand the different interpretations: one might prioritise if parents do respond: their positive response increases the likely effectiveness of intervention. On the other hand a child with a less severe problem, who also has such a parent might not be prioritised; a shot of advice and the parent can provide an appropriate regime for the child without further intervention. The interpretation of the item is clearly related to other information known about the case.

In other situations, different working practices were implicated in the interpretation of items. For example, the item 'child is attending nursery' operates as an influence for prioritisation in some instances and against in others: one slt remarked that if a child attends a good nursery, she feels that the system has already prioritised them and it was

'almost unethical to give the child treatment',

whilst another slt reported that if the child attended a nursery serviced regularly by SLT, then the child would be prioritised because the slt could guarantee access.

Differences in the interpretation of items may of course be indicative of differences of opinion. For example, the item

"speech and language problems are part of a general developmental delay"

was cited as justification both for and against intervention. The popular wisdom has been that if the child has a specific delay, one should be more concerned and more likely to



prioritise. Other slts feel that, particularly at a preschool level, language is so intimately related to cognitive development, one should be intervening with these children too. This debate reflects a similar ongoing debate in the literature regarding the relative values of chronological age or cognitive referencing (Cole et.al., 1990;) for the determination of language difficulties. Cole et.al. for example found that

"there is little or no difference in the ability of children (aged around 4-5 years) to benefit from speech-language pathology services on the basis of the relationship between language development and general cognitive development"

They compared the response to treatment of two groups of children: one group whose language and cognitive age were similar, the other had cognitive levels in advance of their language level. Whilst acknowledging that more detailed linguistic measures may have identified differences in response between the two groups, they suggest that it is unlikely that these would be sufficient to justify differential treatment access.

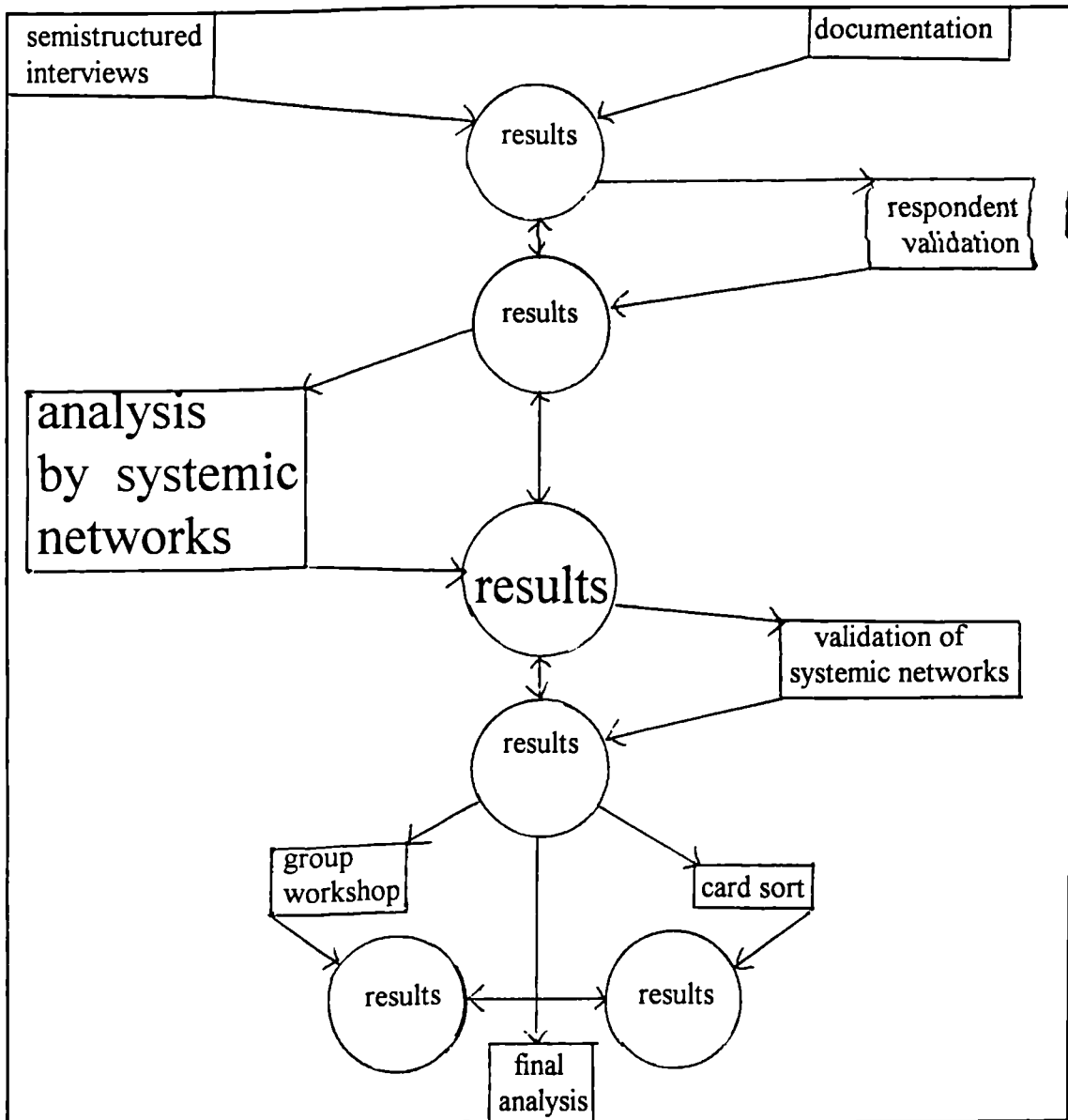
## 7.8. CONCLUSIONS

This chapter has described and discussed the first step in the knowledge elicitation process. The methodology of semistructured interviews, in the context of an observed live session and a willing and informed listener, provided large quantities of data. The various questioning techniques and respondent validation exercises produced a comprehensive coverage of factors relevant to the selection and prioritisation decision and paralleled by reports in the literature. Additional features such as nonclinical influences and cost-benefit reasoning which are not traditionally reported have also been identified.

The analysis has focused predominantly on the factual aspects of knowledge, establishing the domain concepts. However, some indications are already becoming evident about *how* these factors are used in the generation of a knowledgeable decision, for example, the relative importance of some factors has begun to emerge.

The data is therefore confirmed as relevant to the task in hand, allowing the analysis of the next chapter to proceed with some confidence.

# CHAPTER EIGHT ANALYSIS USING SYSTEMIC GRAMMAR NETWORKS



## **8.0. INTRODUCTION**

Following the preliminary analysis and confirmation of the interview data described in the previous chapter, a more detailed analysis was carried out. This chapter describes the purpose of that analysis and the tool used - systemic grammar network (SGN) analysis. The origins and applications of SGNs to qualitative data analysis are discussed. Then follows a more detailed explanation of the notational form, using data from the interviews to illustrate. The process of turning the qualitative data of the interview into five SGNs is then described. The headings of the networks are: the priority child, the nonpriority child, signs of change, effectiveness of intervention and management options. Each final representation is described and the development of the priority child network is given as a detailed example of the process. The chapter concludes with a discussion of the difficulties encountered when using the networks for data analysis. Whilst the focus of the analysis centres on the interview data, the results of the respondent validation exercises were also used to guide and support the identification of categories.

### **8.1. THE PURPOSE OF FURTHER ANALYSIS**

The preliminary analysis of the interview data had produced a broad set of categories considered by slts as they attempt to distinguish between priority and nonpriority children newly referred to SLT. Although hierarchical links were sketched out by examining the super and sub-ordinate structures of constructs, the structures between the categories have not yet been examined. The categories have so far been presented merely as lists which fail to show the inter-relationships between them.

The conclusions reached about experts' knowledge in section 3.5 requires that the analysis be taken further. It was argued in that section, that experts' knowledge differs from that of a novice, not only in quantity but in its quality. Experts not only have access to a greater amount of knowledge, acquired over their years of experience, they have imposed structure on that knowledge which facilitates access to it during practice. In seeking to make the knowledge of the expert slt explicit, it is not enough to show what they know but the significance of that knowledge and how they organise it for use in their everyday assessment of preschool children. The method of data analysis selected for this purpose was that of systemic grammar network analysis, adapted from linguistic notation by Bliss et al (1983).

## 8.2. SYSTEMIC NETWORKS

The following section describes the origins of systemic networks as a means of representing choice in language. Its adoption as a form of qualitative data analysis and representation is then outlined before discussing the key concepts and forms which have been adopted from the linguistic field.

### 8.2.1. Representing choice

Systemic networks have emerged as a form of notation from the school of systemic linguistics. Their view of language reflects a particular concern with sociological aspects of language and the view that language is linguistic potential; that is, they were interested in what one is able to do with language and the choices and options one has and makes, rather than what one knows about language (the view taken for example, by the Transformational Grammar school of linguistics). (Berry, 1975, p.23) This view of language has resulted in a model which has the system as its central idea, the system being

"a set of linguistic options available in a certain environment" (Berry, 1975, p.32)

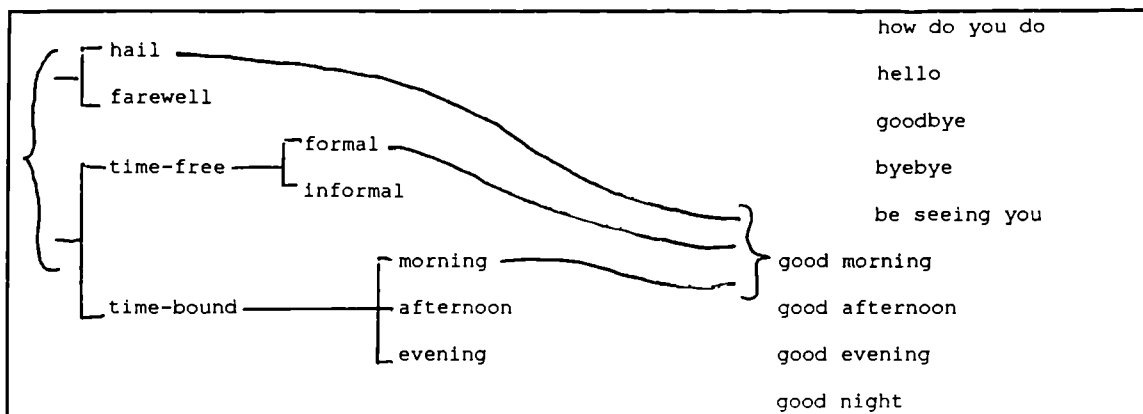
### 8.2.2. Choices in English greetings

So for example, in English we have available to us a range of greetings: cheers, hi, good morning, see you, goodbye. The exact form chosen depends on the context: the purpose of the utterance, the situational context, the mood of the speaker may all influence the choice. An analysis of these 'choices' in greeting suggest that the options are for example between a formal or informal word, a 'hail' or 'farewell' word. These choices can be represented diagrammatically.

So for example, figure 8.1 shows that

hail + formal + morning = good morn ing.

That is, in the context of meeting someone, on a formal occasion before lunch, the choice would be 'good morning'. If all the potential combinations are sketched in, a very complex picture of interacting possibilities ensues. For simplicity's sake, only the one example is given.



**Figure 8.1 Greeting system in middle class British English, from Halliday (1973, p.83)**

The existence of such choices enhances the meaning of each individual word. So 'good morning' takes on its formal level of meaning from the mere fact that an informal alternative 'hello' exists; there is nothing inherently formal in the form 'good morning'. The fact that such choices can be represented diagrammatically in this way illustrates the systematic nature of the range of options open to us within language. It was these systematic contrasts which the systemic linguists sought to represent diagrammatically and from which the notational form of networks emerged.

### 8.2.3. Adaptation to qualitative data analysis

Bliss et. al. ('83) adopted this notation for the purpose of representing qualitative data. They note the difficulties of representing qualitative information and comment that the usual approach is either to use a scheme of simple categories or to reproduce the data in its entirety for a reader. (p.3) They argue that the use of systemic networks lies somewhere on the continuum between these two ends of the data representation spectrum in that it does categorise the data, yet attempts to show relationships, interdependencies and conditional links. The networks have been adopted content-free from the linguistic field; that is, an understanding of their particular application to language is not necessary to the understanding of their use in qualitative data analysis and they are therefore easily understandable to someone without a background in linguistics. This content-free feature also means that the exact nature and eventual form of a network depends on the nature of the data being analysed and therefore represents that data, rather than being a set format which in itself shapes the data.

There is no standardised procedure for developing a network from qualitative data. However, the principles involved seemed to reflect those set out in Grounded Theory (GT) as discussed in section 6.1.8. For example, GT is said to be one that is

"inductively derived from the study of the phenomena it represents" (Strauss & Corbin, 1990, p.23)

In a similar way, SGNs are derived from the data and reflect the nature of that data rather than imposing any particular structure upon it. The coding process of GT is one by which the data are

"broken down, conceptualised and put back together in new ways" (Strauss & Corbin, op cit, p.57)

Although the coding of SGNs uses a different process and formalism, the principle is again similar, in that SGNs seek to make explicit a new level of understanding that is not immediately apparent in the surface structure of the data. (Johnson, 1983, p.209) The theory inherent in the data is uncovered via the coding process.

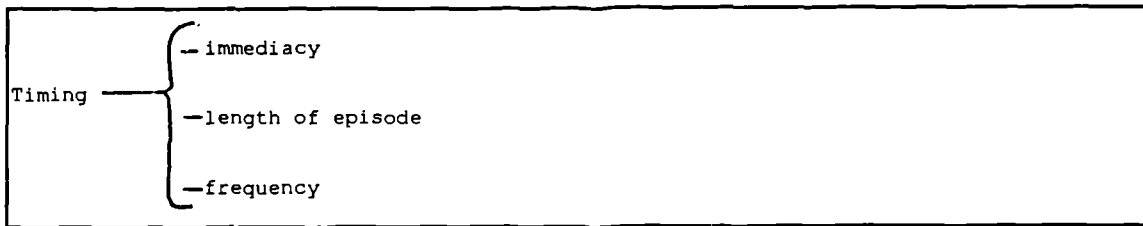
#### **8.2.4. Key concepts and forms**

The following concepts are central to an understanding and interpretation of the networks. They will be described along with their appropriate notational forms where relevant.

- systems and terms
- co-selection and exclusivity
- recursion
- delicacy and terminals
- restrictive entry conditions
- paradigms

The concepts will be illustrated using examples from the data collected during the interviews.

**Systems and terms:** Berry (1975) tells us that each system represents a set of choices or options which are available within a language. (p.142) The options or the categories they represent in the data are referred to as "terms" (Berry, 75, p.144; Bliss et al, 1983, p.10). So for example, a system which describes the way in which intervention is timed, might be divided into subcategories such as 'how soon, how often, how long for'. Figure 8.2 shows these can be represented as a system called Timing with three terms: immediacy, frequency, length of episode.



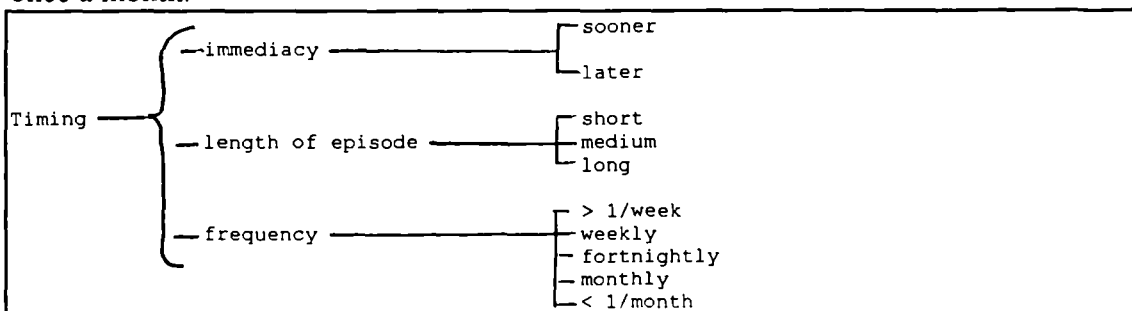
**Figure 8.2. Network showing the system 'Timing' with 3 terms and the use of a BRA bracket**

**Co-selection and exclusivity:** In order to fully represent the issues involved in the timing of intervention, the system must show that all three terms need to be considered simultaneously. The notation uses a bracket to represent this (abbreviated to BRA); this indicates that selections should be made from all three of the terms which follow this BRA.

Figure 8.2 therefore represents the analysis of the 'Timing' of intervention in which three features of the timing co-occur: immediacy (how soon should intervention commence), length of episode (how long is it likely to continue), frequency (how often will it happen).

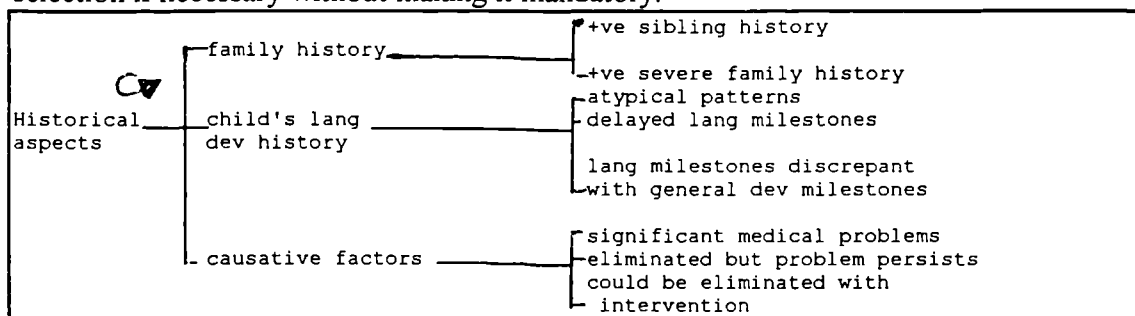
The data suggested a simple range of choices for each of the terms. So in answer to the question how soon, therapists seem to make a simple 'sooner/later' distinction. These specific values can therefore be added on to the system as subsequent options (Figure 8.3 and for further extension of the system, Fig 8.6). Alternatives such as these are represented in the notation with a single BAR, ie, a vertical line with the main term to the left and its subdivisions to the right.

Unlike the BRA notation which signals co-selection, the BAR signifies that the terms are mutually exclusive and only one selection can be made. This network therefore expresses the following options: the timing of intervention in terms of immediacy can be sooner or later, the length of episode can be either short, medium or long; the frequency of intervention has a range of five options varying from more than once a week to less than once a month.

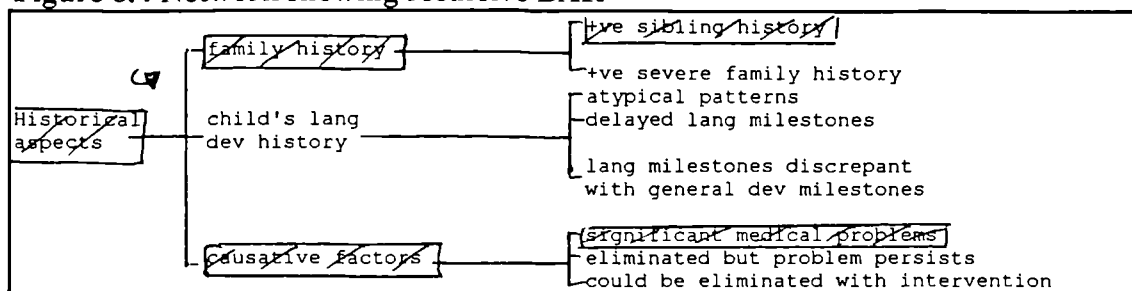


**Figure 8.3. Network showing subsystems with BAR notation**

**Recursion:** In some cases, it is more appropriate (and more economical Bliss et al suggest) to allow more than one scan through a network. For example, the historical characteristics of a priority child are represented in Figure 8.4 with a 'recursive' BAR. (ie, a small arrow occurring just before the node of the BAR) Without the recursive arrow, the notation allows only one selection to be made. The use of a BRA would mean that all terms must be selected. The recursive arrow allows a mid-point in that one *or more* options may be selected. In the example given, a child's history may show 'a family history with a positive sibling history' *and* 'significant medical problems' as causative factors (see hatched areas on fig 8.5). If a BRA bracket had been used, that would entail a choice from each of the three categories, family history, language development history and causative factors. But the data suggest that, in the case of many (but not all) priority children only one of these features might be present. Recursion allows for multiple selection if necessary without making it mandatory.



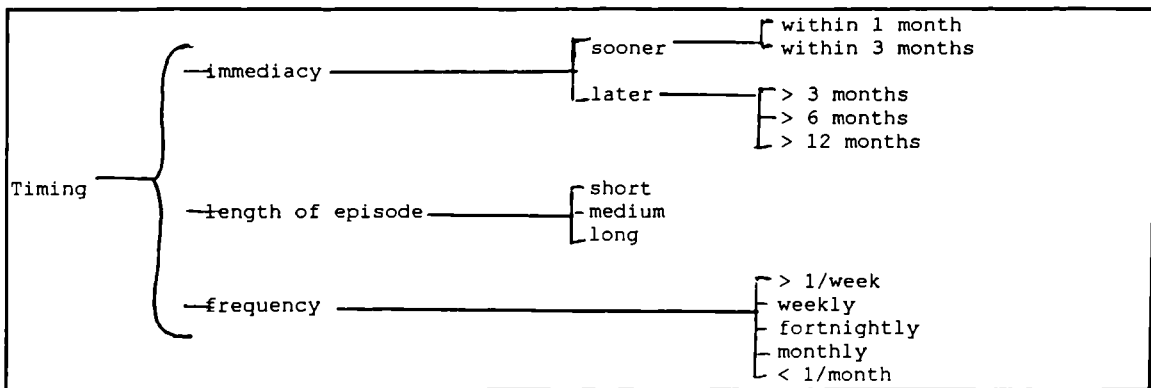
**Figure 8.4 Network showing recursive BAR**



**Figure 8.5 Coding of historical aspects of a priority child showing 2 passes through the network, allowable under the recursive arrow.**

**Delicacy and terminals:** Figure 8.6 shows further distinctions being added to some of the terms in the 'Timing' network. The notation regards these as of increasing "delicacy" (Bliss et.al., p.12; Berry, p.177); that is, progressively finer distinctions are made so that terms of decreasing delicacy are to the left of the network, those of increasing delicacy to the right.





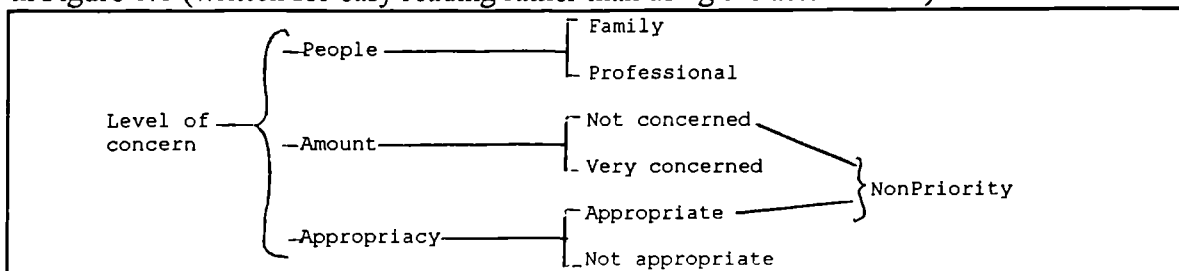
**Figure 8.6 Network showing increasing levels of delicacy.**

It is possible for the "terminals" (ie, those most 'delicate' terms beyond which one cannot make any more relevant, finer distinctions) to be at the same or different levels of delicacy. (Bliss et.al., p.13) In this case, (Fig 8.6) the terminals appear to be at different levels of delicacy: the 'frequency' branch has no intermediate level of delicacy; the 'length of episode' branch terminates at a higher level of delicacy. With the current data it was not possible to know whether therapists have defined consistent boundaries for 'frequency'. For example, the categories intensive, extensive, regular, review appear in conversations and in the literature; yet the definition of these will vary according to the therapist and/or district. It may also turn out that the distinctions made in the other two systems are spurious and therapists will disagree about their classification: therapists may not agree that 'within 3 months' should fall within the 'sooner' system. In such a case a level of delicacy may have to be deleted or an alternative classification found to represent distinctions.

**Restrictive entry conditions:** The categorisation and representation of data through the networks suggests that all resulting choices are possible. But as Bliss et.al. point out (p.18) the "data.. are not always.. so tolerant". The notation therefore needs to be able to show "restrictive entry conditions", that is, situations or conditions which restrict the application of terms and/or lead to further or different kinds of systems. Figure 8.7 shows a system describing the level of concern about a priority child. Slts discussed that concern in terms of the people involved, the amount of concern and its appropriacy. However, it is highly unlikely that the combination of "appropriate/not concerned" would be associated with a priority child. On the contrary such a combination would more likely lead to the view of the child as low priority. These two terms in combination are therefore inapplicable for this network. To notate this within the network a reverse bracket (CON) is used which shows the conditions which restrict or affect the choice of those alternatives.

**Paradigms:** The allowed combinations resulting from the various selections are referred to as 'paradigms' (Bliss et al 1983, p.20)

From Figure 8.7, the possible paradigms of 'level of concern' for a priority child are shown in Figure 8.8 (written for easy reading rather than using the actual terms).



**Figure 8.7 Network showing a restrictive entry condition**

Family are not concerned, inappropriately  
 Family are very concerned appropriately  
 Family are very concerned inappropriately  
 Professional is not concerned inappropriately  
 Professional is very concerned appropriately  
 Professional is very concerned inappropriately.

**Figure 8.8 Paradigms of 'Level of concern'**

So a total of 6 paradigms can be generated from this particular network. The generation of paradigms in this way is a first level check on the validity of the network. It might be argued for example, that in this illustration, the fact that another professional is 'inappropriately not concerned' would not necessarily be a highly significant factor in raising a child's priority status. Ideally, the way to check paradigms is to find real instances of the paradigm in the original (or subsequent) data, ie, by finding an item of data which corresponds to the description in the paradigm or through "instantiation" (Bliss et al, 1983 p.24). Bliss et al recommend that a failure to find a suitable fit for a paradigm in the data or equally, to discover that data cannot be adequately represented in a network should be the two main tools of checking the validity of a network (p.24). In this instance, the confirmatory exercise suggested that although other professionals' views are taken into account, they are accorded relatively less weight than factors such as the observed severity of the child's communication disorder. With respect to the nature of concern expressed by the professional, this paradigm goes beyond what was expressed in the original interviews and has been generated because of its coupling in the networks with more detailed information about the significance of parents' concern. Its inclusion is legitimated by the views expressed concerning potential mismanagement by nursery staff and other professionals of the child's difficulties. A paradigm such as this would require further instantiation to legitimate its continued inclusion. However, its inclusion within the SGN facilitates this instantiation by making the interpretation more

explicit through the paradigm and therefore open to discussion. (see also Bliss et al' comment later section 8.6.1 re tendency of SGNs to generate novel paradigms) The display of paradigms in this way also facilitates the differentiation between real examples of cases and potential cases.

### **8.3. THE UTILITY OF SGNs FOR THE EXPLORATION OF Slts' DECISIONS**

The general utility of SGNs as a qualitative data analysis tool has been briefly discussed above (section 8.2.3). This section will focus more particularly on their usefulness as a tool in the exploration of speech & language therapists' (slts) knowledge concerning the assessment of preschool children. The following issues will be discussed:

- the application of SGNs to the field of communication disorders as a whole;
- the mapping of relationships between factors;
- levels of delicacy as a means of expressing progressively more observable behaviours in relation to their superordinate constructs;
- the use of SGNs in the process of respondent validation;
- the potential for bias in the development of a network;
- the problem of developing representative categories.

#### **8.3.1. Application to communication disorders**

Gotteri (1988) suggested that systemic linguistics has potentially several applications to language pathology, but noted that to date, its contribution had been 'vanishingly small'. In fact his interpretation of its potential relates only to linguistic applications. That is, he reviews their potential as a tool for the description of disruptions to language that occur in speech and language disorders. However, this study uses the framework of network analysis in a nonlinguistic analysis of decision making; ie, it is not the *language* of the decision that is the focus of the analysis, even though the data is verbal data. Rather the focus of the analysis is the concepts and categories being used in the decision making process. Gotteri does suggest that Speech & Language Therapy (SLT) students could familiarise themselves with systemic concepts through practice exercises such as the classification of language pathologies but does not comment on their potential as a means of exploring the factors contributing to those diagnostic categories.

### **8.3.2. Relationships not lists**

As indicated above (section 8.1), the analysis to this point had resulted in lists of categories along with the links between particular features and the likelihood of prioritisation. However, the contextual nature of the symptoms was apparent from both the interviews and the respondent validation exercises. That is, some factors took on their particular significance only in certain contexts. In addition, it has been noted that experts do not keep their knowledge in traditional subject packages (eg psychology knowledge, linguistic knowledge) but integrate and structure it as a result of experience.

SGNs with their potential to place an item in the context of co-occurring or conversely mutually exclusive items, lends itself to this mapping process - a way of making the context of items clear and showing the relationships in an economical fashion. From her evaluation of networks as a means of knowledge representation, Johnson concludes that they are an "economical formalism". (Johnson, 1983, p.236) SGNs allow the representation of the context of items to be graphically illustrated. In fact just a glance at a network, even though often complex and convoluted, gives a feel for the general context of the subject matter. As Bliss et al comment

" a network can on a single page, store and display a collection of related categories, each 'obvious' enough in itself but whose interdependence would otherwise be difficult to manage, remember or communicate." (p.186)

### **8.3.3. Delicacy**

An extension of the expression of relationships is possible through the levels of delicacy which are shown through the networks. So, not only is it possible to represent relationships between constructs but also the relationships within constructs can be shown, with superordinate constructs being expressed at higher levels of delicacy (to the left) and subordinate constructs, the more observable, behavioural expressions at lower levels of delicacy (to the right). So when developing a network, coherence between the levels of delicacy within a system must be an aim, although establishing and maintaining coherence is often difficult. This was seen above in the timing of intervention system (section 8.6) where the terminals did not all achieve similar levels of delicacy.

#### **8.3.4. Facilitating respondent validation:**

It was important at this stage to see the networks not necessarily as the final method of representing the knowledge involved in slts' selection of preschool children. Various authors comment that networks often fail to reach publication. (Gotteri, 1988; Bliss et al, 193) Bliss et al comment wryly:

" Networks like poems, are abandoned rather than finished" (p.196)

They were rather a stage in the process of making those decisions explicit and open to examination. Their particular value seems to be that they help an investigator to examine and analyse the data thoroughly and to represent it economically and graphically. (Johnson, '193, p.236); Watts, 1983, in Bliss et al. p.196). This clarity in the representation of data is particularly helpful at this stage since it is necessary to be able to present to therapists an interpretation of their reasoning and decision-making in such a way that the links between items can be discussed and clarified. The process of feeding back interpretations of the data to slts was stated to be one of the principles of the methodology, - a process of respondent validation which allows the subjects opportunities to influence the interpretations and conceptualisations of their responses by the researcher. The potential of SGNs in making the relationships explicit therefore give the networks power as a mediating tool which can bridge the gap between qualitative interview data and a final representation. (Johnson & Johnson, '1987)

#### **8.3.5. Bias:**

As with any form of analysis, systemic networks are open to criticisms of analyst bias. As a slt analysing data from other slts, for example, there was the danger that the author could merely reproduce traditional conclusions, interpretations and categorisations. Any analysis of data of course depends on the analyst and is bound to reflect at some level the preconceptions or underlying theory espoused by the analyst. (Bliss et al 1983, p. 97) It is therefore necessary to return frequently to the data and 'ground' the categories being suggested in the data. As suggested above, this is done through the examination of the resultant paradigms, ensuring that such paradigms are both representative and sensible in terms of the data. The addition of glossaries for the terms of each network facilitated debate of the analyst's interpretation.

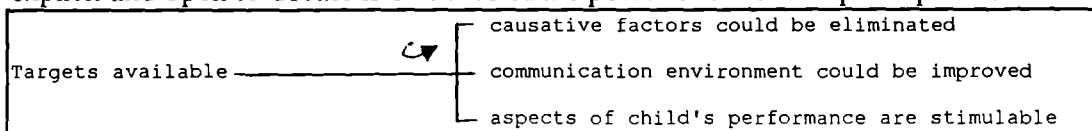
### 8.3.6. Representativeness:

One of the criticisms of systemic linguistics suggests that the terms used to label various structures do not represent reality, that the hierarchies presented are not real in terms of how language is used. Similarly, it could be argued that categories built into these networks do not necessarily form part of the way that slts conceptualise and build up their decisions. Bliss et al acknowledge that

"the question of whether the descriptive terms used represent real or fancied distinctions cannot be avoided". (p.170)

At this stage in the investigation, it was indeed often difficult to establish exclusive alternatives; instead the categories at a BAR often represented possible choices and a recursive arrow was used frequently to show this lack of exclusivity.

For example, part of the slts' consideration of potential effectiveness of intervention involves the identification of possible targets for that intervention. (Figure 8.9) It is not clear at this stage, whether or not these three options are exclusive: if only one were present, would slts feel that intervention has the potential for success. Certainly more than one may be present and the recursive arrow has been added to show that possibility until and unless the exclusivity can be shown in the data. However, the fact that such problems can be made explicit and open to debate is evidence of the power of the technique in practice.



**Fig 8.9 Aspects of the analysis of potential effectiveness of intervention**

When analysing qualitative data of any kind, it is sometimes difficult to know the significance of an item or its relevance and therefore the questions arise as to whether or not it should be included in the network. However, whilst thorough grounding in the data is vital, there has to be a stage at which the analyst "transcends" the original data rather than merely copying it (Bliss et al 1983, p 190)

### 8.4. DEVELOPMENT OF "ASSESSMENT " NETWORKS

The stages by which the networks were developed will now be outlined. A detailed example of the process, showing the development of the 'characteristics of the priority

child' network is given in appendix E. Although the networks were not designed as an assessment procedure, they were referred to as "assessment" networks because they represented the information considered during the assessment process.

#### **8.4.1. Network headings**

From the preliminary analysis, a number of potential starting places were available for the development of a series of networks. For example, the list of factors considered during the assessment (see fig 7.12) or those items associated with priority status. (see appendix E) Since the main contrast between constructs that had been probed in interview was that of priority/nonpriority, it was felt that this should be explored through the networks:

**the priority child**  
**the nonpriority child**

These two headings represent a simple dichotomy of management possibilities, but it was clear that although slts do have contrasts which operate in this way, the range of management options they consider is far more detailed. The range of these had been listed and it was decided to analyse them further via the medium of SGNs. A third network was therefore:

**management options.**

The data was then examined in terms of the underlying rationales given by slts. One of the methodological issues arising from the discussion of expertise was that experts knowledge is not necessarily extractable from their behaviour but in the meanings which they share which inform their actions. This had been part of the rationale for the use of PCT questioning techniques - to explore the significance, or meaning of for example, their case history questioning, via the exploration of superordinate constructs. The ladder questions had been traced (figures 7.8 & 7.9) in the preliminary analysis. The superordinate statements from these analyses were collated and analysed for recurrent themes. The collated list appears in Appendix D.

A number of recurring questions emerged from this analysis. Firstly, as one would expect given the emphasis on priority and nonpriority in the interviews, much of the slts investigation was argued from the point of view of identifying whether or not the child had a communication problem and whether or not the slt needed to intervene. Alongside this was a concern to identify potential approaches to any problem identified and consideration of the likely effectiveness of any intervention. The headings priority and

nonpriority child were felt to cover only the first two of these questions, so a further network was planned to investigate the later:

**effectiveness of intervention.**

Finally, another theme which seemed to be both a subordinate construct within the notion of priority versus nonpriority and yet at the same time on a level with them was the notion of a child's progress. Slts seemed to be developing the notion of a priority/nonpriority child from two sides, both of which focused on a child's potential for change. Firstly they looked for evidence which suggests that a child will (or will not) continue to make spontaneous progress. For example, a child with poor attention would be less likely to make spontaneous progress because they

"can't learn from their environment".

On the other hand, they regard progress as evidence of the presence (or absence) of a condition which requires intervention. For example,

"lack of progress shows that they can't respond to input which suggests a major problem".

It was felt that the first of these would be explored within the priority/nonpriority networks, but that as the second approached the notion of priority from a different starting point, a separate network should be developed to analyse the

**signs of change.**

The final list of networks is shown in figure 8.10

|  |
|--|
| Characteristics of a Priority Child    |
| Characteristics of a Nonpriority Child |
| Signs of Change                        |
| Effectiveness of Intervention          |
| Management options                     |

**Figure 8.10 Systemic Grammar Networks**

**8.4.2. Collation of relevant items**

The data and preliminary analyses were then scanned for items relevant to each category heading. These items, rather than being single simple statements made by slts, often emerged out of the conversation between the slt and interviewer and it



was often the interviewer who summarised the final agreed view as an attempt to clarify what had been said.

For example, in one interview, the interviewer probed the reason for the slt's question about the child's birth history. The slt gave examples of the range of medical factors she was looking for, such as anoxia, problems during pregnancy, early feeding problems; When asked why these were of interest, the slt indicated that they may be associated with signs of a general developmental delay or a more severe problem. The discussion continued around how these factors influence the slt's decision and finally the interviewer asked:

"so you're saying that if there are things in the history that account for it (the communication problem), that are now sorted out, that may influence you in a positive way (ie, not to prioritise a child)

The slt agreed, and then went on to place conditions on when it would be not be true.

The items collated as relevant to each network category are therefore often summaries based on several lines or even pages of discussion. Figure 8.11 shows examples of items relevant to the signs of change network.

|  |
|--|
| Spontaneous progress indicates a lower level of priority<br>A child who is able to make use of existing input (and therefore their behaviour changes as a result) doesn't need SLT<br>Progress is good relative to the child's environment<br>Increase in single word vocabulary<br>Changes noted in language over the last 3 months<br>Deviant progress noted |
|--|

**Figure 8.11 Some signs of change**

### **8.4.3. Analysis of variables**

The items relevant to each category were then analysed to identify the range of variables within each category, their features and alternatives and how they related to one another, for example, higher and lower order constructs, behavioural definitions versus general categories. So taking the signs of change items again, figure 8.12 shows dimensions covered by the items in this category. This analysis was then used as the beginning of the network.

As the network evolved the resulting paradigms were checked against the data and against the author's own experience to confirm that these were valid paradigms for the particular network title.

|  |
|--|
| Time elements (since referral, within 3 months, over 6 months)   |
| Aspect of behaviours (communication, social or emotional behaviours; attention or play)                    |
| Quantitative elements (how much change had occurred, some, none, move to another stage of language)        |
| The cause of the changes (as a result of a change in environment or management, spontaneous, maturational) |
| Nature of the change (whether or not the change was regarded as positive or negative or deviant)           |

**Figure 8.12 Dimensions considered within 'signs of change'**

However, Bliss et.al. (1983) indicate that although instantiation is the best check on a paradigm,

"paradoxically, networks, unlike other category schemes, are somewhat prone to generate descriptions of things that are not in the data...it may be that this is perfectly in order: that the missing instances are entirely reasonable paradigms whose lack of instantiation is in itself good information.." (p.190).

The choice between excluding a paradigm because there is no instantiation and including it with zero instances is recognized therefore as a difficulty. Through the development of a network, paradigms are generated that represent the possible occurrences as well as actual occurrences in the data. If a paradigm was considered sensible or possible in the authors experience, the network was therefore accepted. Further verification of the networks was planned and it was considered that such paradigms might generate discussion or be instantiated as further data was collected. It was therefore considered a positive feature for this stage of the study.

#### **8.4.4. Final checks and glossary**

As networks neared the point of abandonment (cf Bliss et.al.'s comment earlier, section 8.3.4) beyond which further analysis was not helpful, one final check was made on the structure and content of the networks. Eight cases were selected randomly from the author's own caseload. Information recorded at initial assessment was then coded using the networks. Any discrepancies, difficulties of coding or interpretation of categories were examined and the networks adjusted as necessary.

The terms used in the networks were often quite cryptic; so as a final stage in their development a glossary of terms was written to give more information on the interpretation of each one. If the writing of the glossary highlighted ambiguities, adjustments were made as appropriate.

## **8.5. THE FINAL NETWORKS**

The preceding description shows the general stages of analysis that took place. A detailed example is given in Appendix E of how one particular network, the characteristics of the priority child, was developed. The following section presents the final five networks. Although presented as 'final', it must be remembered that they were final only as far as this stage of the research goes; there were still problems with these representations. However, it was decided that further distinctions could not be supported from the data and that the network should be presented back to slts in order to verify the current representation and to gather further data.

### **8.5.1. Characteristics of the Priority Child**

Figure 8.13 presents the final network for the priority child. This suggests that characteristics of the child and his context will be significant. Characteristics of the child will include past and present features. The child's case history may include one or more significant features from the family history, language development history or features which have a causative connection with the communication difficulty. Each of these areas have exclusive alternatives. The child's presenting features are described in terms of type and degree, the latter providing an alternative of mild, moderate or severe. These were expanded in the glossary to suggest associated amounts of delay in months.

Primary and secondary types of problem were suggested. The primary problems focus on the communication problem itself, associated problems and discrepancies between various aspects of the child's development. The latter two were specified as straightforward alternatives. The communication category was further defined in terms of its nature (delay versus disorder) and the area affected (comprehension, expression etc). Secondary problems, in a similar fashion to associated problems offered a choice of areas affected.

The child's context was defined in terms of the level of concern of associated adults and the communication environment, the latter providing a simple alternative where either the family needed advice or no other support was available. A

significant level of concern was defined in terms of the people (family or professionals) associated with the child, the amount of concern (not concerned or very concerned) and the appropriacy of that concern. A reverse condition is applied to exclude appropriate concern.

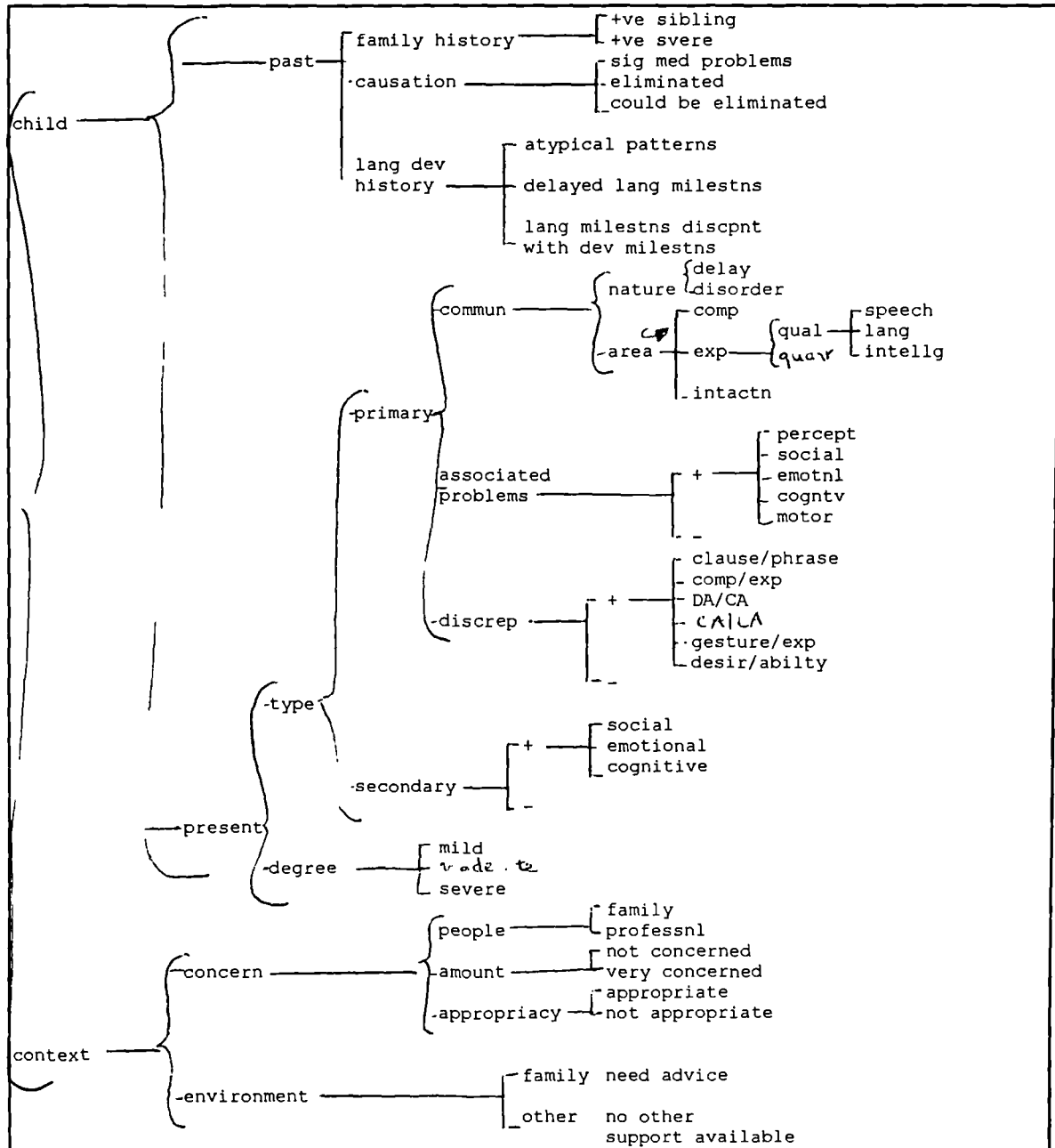


Figure 13 Characteristics of a priority child

### 8.5.2. Characteristics of the nonpriority child

The collation of items relating to nonpriority children, not surprisingly, revealed a similar range of categories. Examples are shown in figure 8.14. Figure 8.15 shows the final network.

|  |
|--|
| where the child is using lots of language and is reasonably clear<br>phonological processes are suitable for their age<br>emotional problems are so severe they must be dealt first before therapy could be effective<br>the parent has sorted out ways of helping the child<br>functional comprehension is fine<br>the child plays well in the clinic |
|--|

**Figure 8.14. Examples of items relating to the nonpriority child**

Where possible a similar arrangement of categories was retained to make the difference between the priority and nonpriority child more apparent. As one might expect, no secondary problems were referred to but a range of possible factors in associated developmental areas were described. An additional category described those children who were potential priorities but for whom therapy was not regarded as beneficial at the point of assessment.

The network in figure 8.15 therefore shows a similar division between child and contextual characteristics and between past and present features. The child's context was also described in terms of both positive levels of concern and support. This latter node was termed 'environment' in the priority child network and 'facilitation' in this network. In hindsight, there was no good reason for this difference since both referred to those aspects of the child's environment which did or did not facilitate the communication development of the child. At the time, different terms were used to make apparent the positive and negative connotations of the two networks, but the terms did not reflect this successfully.

Notions of degree, nature and discrepancies were not used for the child's present communication. Rather, each aspect of development received a positive description, such as "within normal limits, age appropriate, not deviant". At this stage it was not felt possible to put any further hierarchy on these aspects.

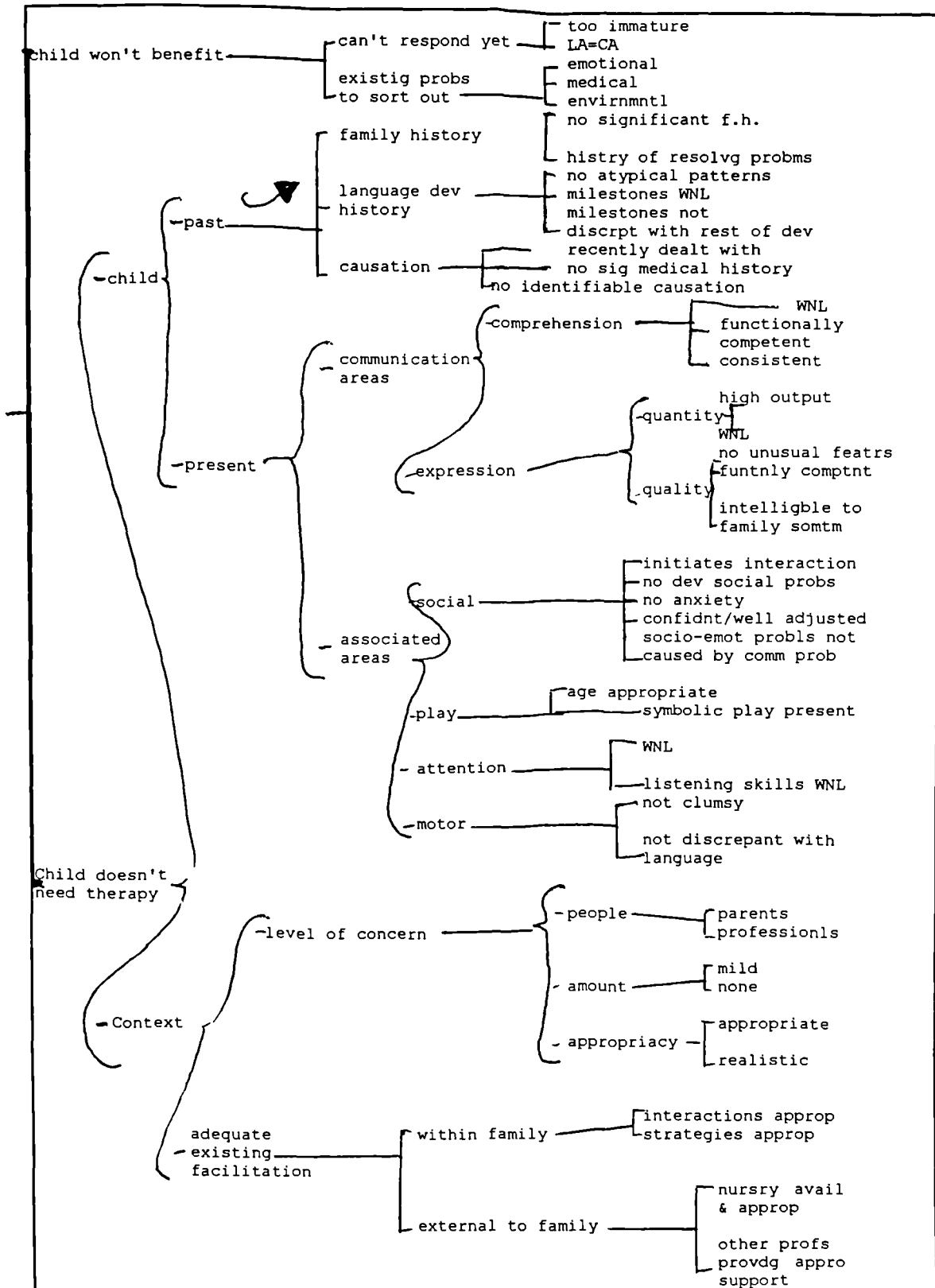
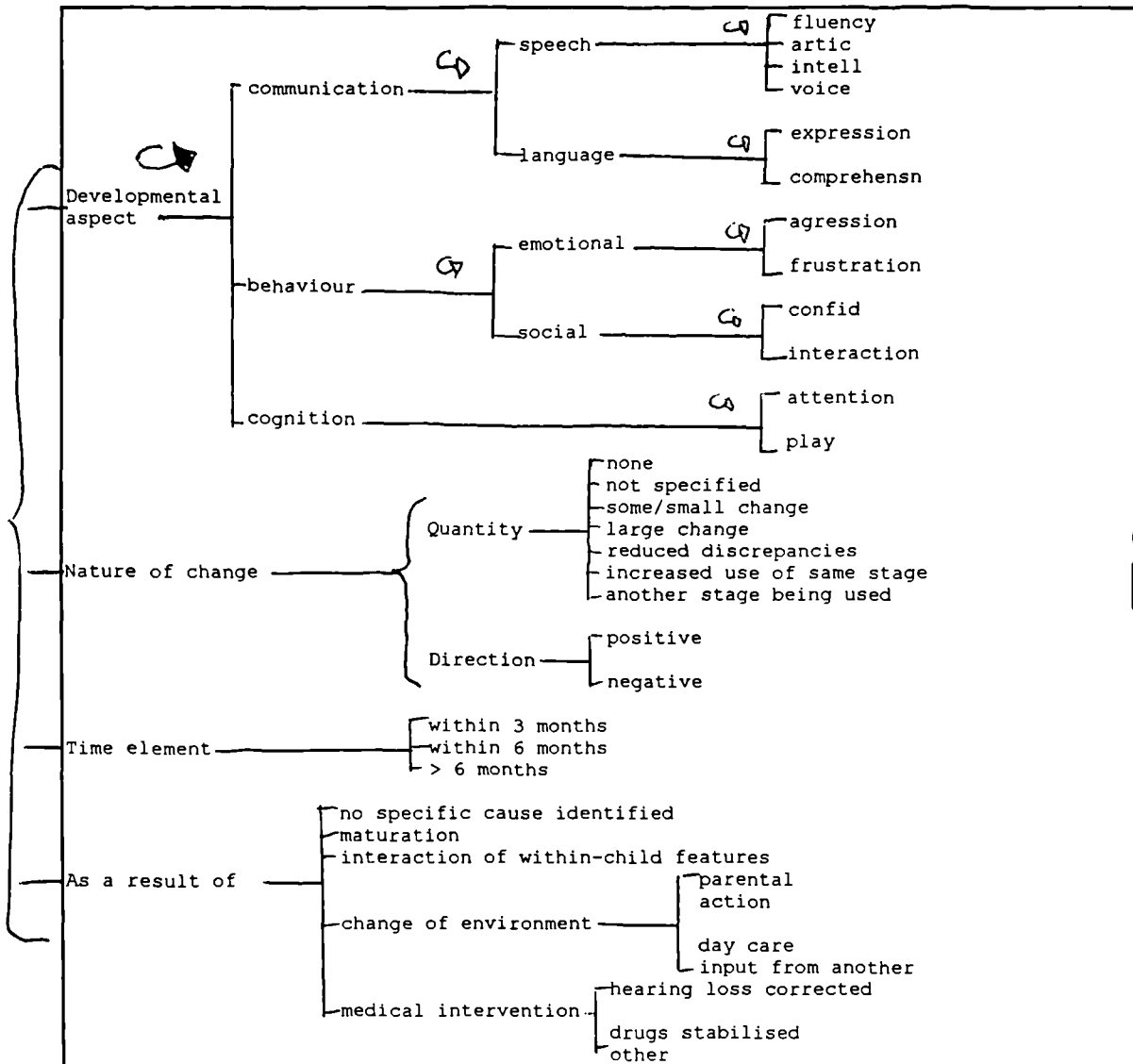


Figure 8.15 Characteristics of a nonpriority child

### **8.5.3. Signs of change**

Some items of relevance to this network had already been collated and analysed with respect to the priority child network. The data was scanned for other relevant items. Examples were shown previously (figure 8.11). The analysis from the priority child items was found to contain relevant variables and these were therefore used as the starting point for the network (cf figures 8.12). The final network is shown in figure 8.16. This suggests that a child's progress is considered in terms of four co-occurring variables: the aspect of development which shows the change or lack of it, the nature of the change in terms of both the amount and direction, the time period involved and the context in which that change had occurred, or what conditions if any had precipitated the change. Each of these main variables was further defined in exclusive alternatives with the exception of developmental aspects. A recursive node showed that changes in one or more areas of development might be significant.



**Figure 8.16 Signs of change**

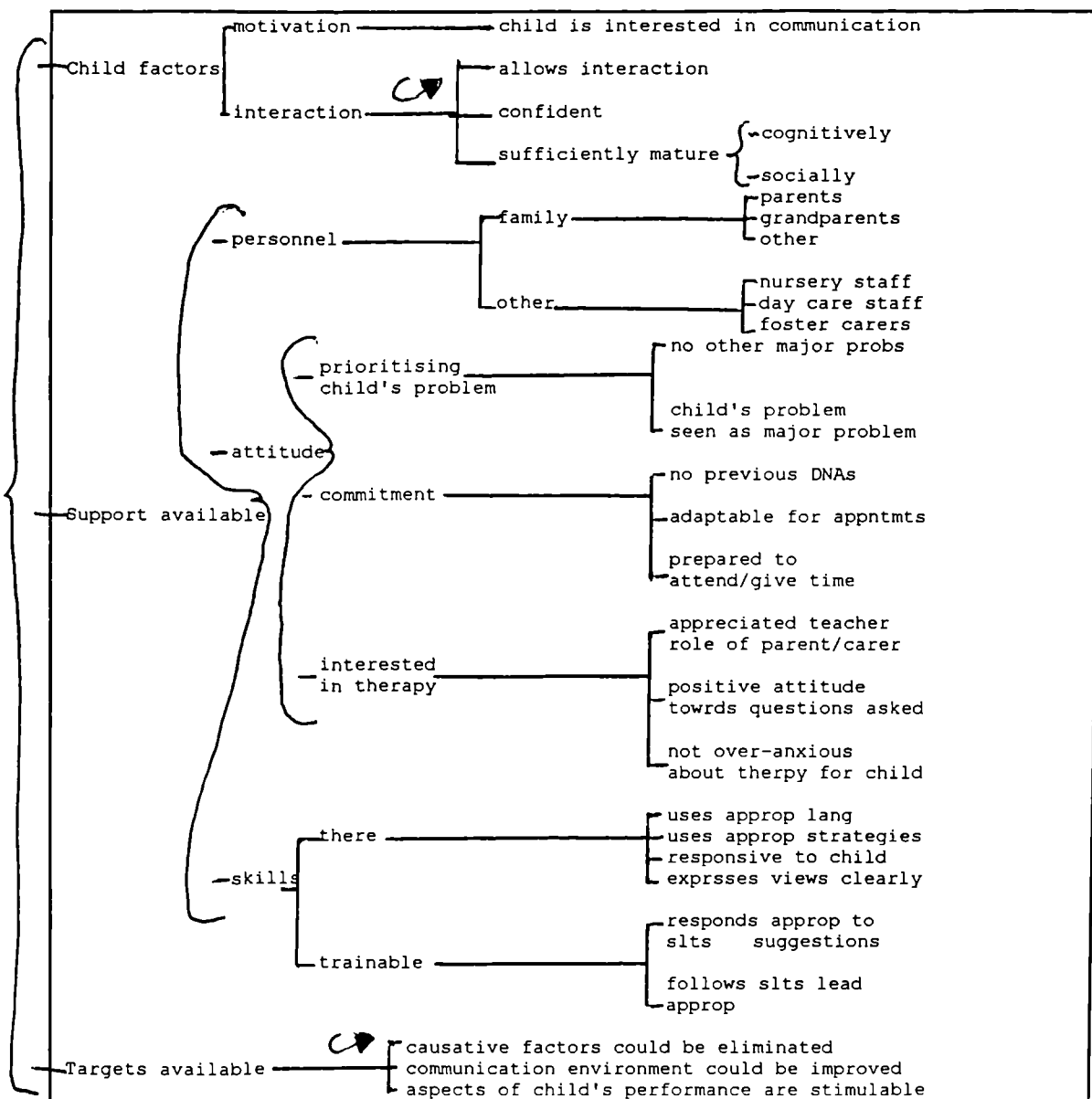
### 8.5.4. Effectiveness of intervention

Examples of items in this category are shown in figure 8.17. The final network is displayed in figure 8.18

- the child allows therapist to intervene in activities
- parent is willing to be adaptable for appointments
- parent appreciates teacher role of parent
- child's communication environment could be improved

**Figure 8.17 Items indicating effective intervention**





**Figure 8.18 Effectiveness of intervention**

Items forming the basis of this network fell into three main categories: firstly, those which reflected a judgment of the child's likely response to intervention, not in terms of a prognostic view of the child's disorder, but related to the child's motivation and interaction which suggested that they would cope with the therapeutic situation; secondly, a range of items reflected an evaluation of the level of support for intervention and thirdly, items which suggested that the slt had checked out and found appropriate targets for intervention. These three variables, child factors, support available and targets available were postulated as co-occurring variables, ie features from all three categories would be present in order for the slt to regard intervention as potentially effective.

Child factors were further differentiated in terms of the child's motivation and interaction with the latter area being represented by three recursive alternatives: child allows interaction with the slt, the child appears confident during the session and/or the child appears to be sufficiently mature both cognitively and socially to benefit from the intervention.

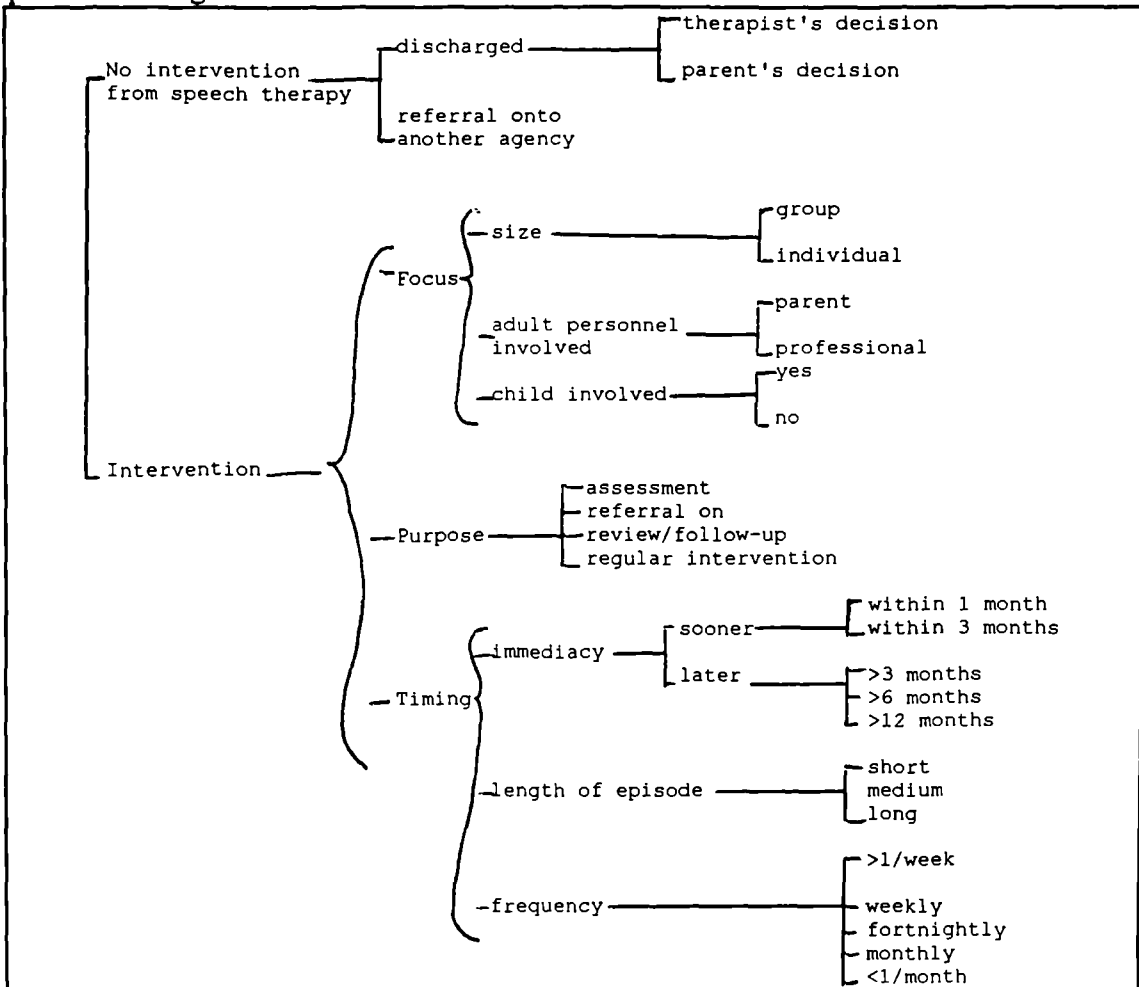
The support available to the slt was defined by three co-occurring variables: the personnel providing the support, their attitude and their skills. Firstly, for intervention to be effective either the family (eg parents or grandparents) or other carers (eg nursery or day care staff or foster carers) would be in support. Secondly their attitudes would all show positive support for the intervention in that they were able to give the child's problem some kind of priority in their lives, that they were committed to the programme in terms of attendance and that they showed a positive interest in the process of intervention in terms of their view of their own role, general positive response to the process or in that they were not overly anxious about the process. Thirdly, the support was viewed in terms of the skills of supportive personnel, either those in existence or potentially trainable. Indications of existing skills would be the use of appropriate language or strategies with the child, an appropriate level of responsiveness to the child or an ability to express their views about the child clearly. Indications that personnel were trainable would include appropriate response to slts' suggestions during the session or that they appropriately followed the slts' lead during session activities.

Three types of targets were identified as indicators of effective intervention: factors which could have been causative of the communication problem, which could be changed through an intervention programme, aspects of the child's linguistic environment which could be moved in a more positive direction and aspects of the child's performance which showed stimulability, that is an indicator of the child's learning potential. These were shown as alternatives, ie, only one need be present for the slt to perceive the potential for intervention as positive.

#### **8.5.5. Management Options**

This network was developed in order to represent the range of options considered by slts as ways of managing the communication disorder. Although the interview procedure had stressed a simple dichotomy between priority and nonpriority, it was clear that slts could interpret either of these in a multitude of ways. So, although the dichotomy of see again/don't see again was reflected in the data, the selection of 'see again' for example,

threw up a considerable number of possible choices of management programmes. Examples of these items was given in the previous chapter (fig 7.7). The final network is presented in figure 8.19.



**Figure 8.10 Management Options**

If a child was to be offered intervention the options could be defined by three co-occurring variables: the focus of the intervention, its purpose and its timing.

The focus of the intervention could be described by the client:slt ratio in a broad alternative of individual 1:1 versus a group based situation. The focus would also consider which main adult (either parent or other professional) would relate to the slt. Finally, the focus would consider whether or not the child would be directly involved.

The purpose of the intervention could be expressed as a range of four alternatives: the child (or carer) would be seen for further assessment before a treatment decision could be made, for a further session before referral on to another discipline, for a follow-up review after an intervening lapse of time or, finally, for regular intervention.

The timing of any planned intervention would be defined by three co-occurring variables: immediacy, length of episode, and frequency. The immediacy of an intervention

programme would indicate how soon the child or family would be seen in terms of a simple alternative - sooner or later. These were given specific time values ranging from within one month to more than twelve months. The length of episode would be anticipated as potentially short, medium or long. These were defined in the glossary as up to three months, up to nine months and over nine months respectively. Finally the frequency of intervention was defined by a simple list of alternatives ranging from more than once a week to less than once a month.

If a child was not to be offered intervention, two other choices were apparent: either the child could be referred to another agency or he could be discharged altogether. If the decision was to discharge, this could be at the behest of either parent or slt.

## **8.6. EVALUATION OF ANALYSIS AND SGNs**

In the preceding sections, the five networks which show the analysis of the interview data have been presented; particular detail was provided on the priority child network as an example of the analytic process. Only the final representation of the other four has been presented. However, the analytic process followed a similar pattern for each of the other four. As can be seen from the example, the networks grew through a series of expansions and evaluations and subsequent attempts to overcome problems with the representations. A number of problems cropped up during the analysis and these will be discussed in the next section.

This section provides a general evaluation of the analysis focusing particularly on the usefulness of SGNs and concludes positively, that the SGNs provided a stimulating and facilitative means of qualitative data analysis.

### **8.6.1. Real versus potential paradigms**

At several points during the preceding pages, it has been noted that the paradigms emanating from these SGNs represent potential cases. Bliss et al's (op cit) comments predicted this possibility in their reflection that SGN analysis does tend to produce paradigms which are not actually in the data. Given that one of the criticisms of qualitative methodologies is their lack of objectivity, this could be regarded as a major problem: one is no longer able to ground the theoretical representation in the data.

However, Bliss et al regard this as a positive feature in that the lack of instantiation can itself be useful information. In this data, slts discussed findings that are significant to

them during an initial assessment. However, the obvious contextual nature of many categories led to difficulties in identifying precise combinations.

So, for example, it was not clear how severe, or in what combinations, secondary features must appear before these over-ride a mild communication problem to make a child a priority. However, by making explicit the possible combinations the exploration of actual combinations is facilitated. An absence of instantiations for paradigms may trigger a re-evaluation of the network or it may stimulate more focused data elicitation. Since the SGNs were used as an interim stage of the study, their value as stimulatory tool was seen as particularly valuable.

### **8.6.2. Professional as researcher**

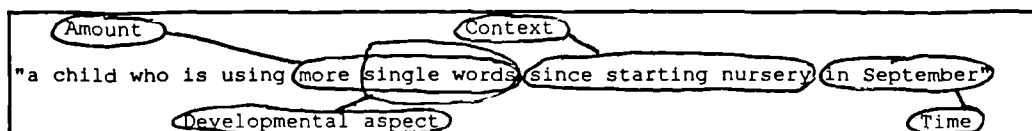
The professional background of the researcher had been a definite advantage during the interviews. As indicated, slts were happy to discuss their cases with an interested and informed listener. However, the issue of 'being native' needs to be considered not only at the data collection stage but also during analysis.

This evaluation must therefore ask whether or not the categories and their representation within the networks are a true reflection of the data or are over-informed by the researcher's preconceptions and experience within SLT.

It is the case that some of the categories would not be in any way novel or provide fresh insight to most slts. For example, within the network 'Priority child', the main subcategories are:

- historical aspects
- child's context
- child's communicative difficulties
- secondary problems

These would be common as subheadings in case histories written by undergraduate students. However, since these categories were fully grounded in the data their familiarity to slts lends support to the notion that the networks do indeed represent the knowledge domain of slts. Furthermore, the categories do show another interpretive level which goes beyond the immediate wording of the data and therefore beyond the traditional categories of the slt. Variables within the signs of change category were interpretations that were not made explicit within the data. For example the statement below (fig 8.20) shows the underlying themes which feature in the statement but are not made explicit in the wording.



**Figure 26 Emergent categories**

Furthermore, the use of SGNs promoted the development of grounded categories. For each stage in the development of a network, as paradigms were generated, these were tested against the data. As indicated above, they were not always instantiated positively; however, negative instantiations, where the paradigm was contradicted in the data were used to stimulate re-interpretation of the network. Searching the data for instances of paradigms and coding data onto the networks, thereby facilitated objectivity as well as a growing insight and understanding of the data.

### 8.6.3. Ambiguity of terms

For economy's sake, short phrases were often used as terms for the categories within each network. However, it was felt that these were often too cryptic to be interpreted with any reliability. A glossary was developed for each network in order to clarify terms. For example, the network on characteristics of a non-priority child has a term 'no unusual features' as part of the category of expressive language. This was further defined in the glossary as

'nothing observed during the session was unusual or atypical of children's normally developing expressive language'.

The glossary expands the term and reminds the reader of the meaning of that section of the network. So in this instance, the reader is reminded that this is part of expressive language and the present aspect is reinforced in the phrase 'during the session'. On the other hand, the definitions of some items had not been sufficiently clarified during the interviews to be able to expand in the glossary or to produce a common view. For example, 'nature' of communication difficulties in the priority child network is left as 'delayed' or 'deviant' and not further defined in the glossary. There was no easily categorised view of this in the interview data although slts were able to give examples of communication behaviours they regarded as deviant.

Despite the glossary therefore, there remained a number of terms which had no further definition, interpretation being left at this stage until further data was available.

Nonetheless, the process of writing glossaries often identified ambiguities within a network and led to a change in terms or structure.

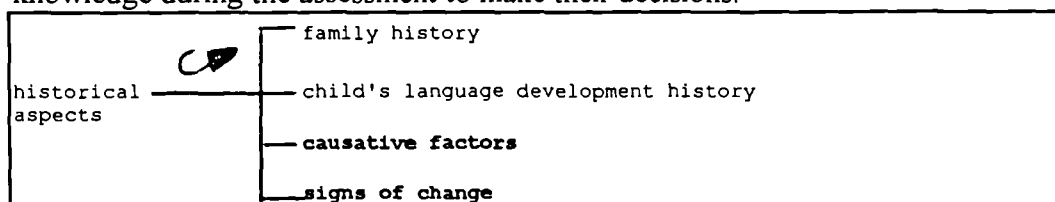
#### 8.6.4. Varying levels of delicacy

The levels of delicacy achieved in the networks varied with some of the terminals reaching observable behaviours and others staying at a broader conceptual level. This variability is noted by Bliss et al and is therefore not limited to these networks. In some cases, data was not available at the level of observable measurable behaviours. In other cases, finer distinctions led merely to a list of examples rather than categorisation. As all examples are not known, and to list all possible examples is not necessarily economically desirable, it was considered more advisable to retain examples in the glossary.

#### 8.6.5. Meshing the networks together

The interview data had been interpreted and represented in the form of five SGNs. However, these do not reflect any procedural order or emphasis in the data, but merely the categorisation of groups of items. Slts do not investigate all the priority features first, followed by nonpriority features before considering signs of change and potential effectiveness. However, if such features become apparent during their investigation, the SGNs show the significance of those factors. This analysis therefore considers factual knowledge rather than strategic knowledge.

Furthermore, by separating out the data into the five SGNs, some sense is lost of the whole and how the five fit together. So for example, slts clearly assess signs of change and the potential effectiveness of intervention as part of their assessment of a child's priority status. Signs of change can possibly be integrated back into the 'Priority' network on the BAR of 'Historical aspects' as an alternative alongside family history, child's language development history and causative factors (fig 8.21) as was considered early during the analysis. Further work was needed to show how slts used this factual knowledge during the assessment to make their decisions.



**Fig 8.21 Integration of networks**

On the other hand, the five SGNs were quite complex representations for anyone unused to this formalism. As noted by Gotteri (op cit) systemic linguistics are not applied extensively to the field of communication disorders and it was therefore unlikely that slts would be familiar with the network notation. For the next stage of the study, the larger networks were partially deconstructed into a series of smaller ones, making the components more accessible for slts. Figure 8.22 shows the resultant networks. The glossaries were reorganised to reflect the new divisions.

|   |
|---|
| <b>Characteristics of the Priority Child:</b><br>Historical aspects<br>Child's context<br>Communication difficulties<br>Associated difficulties<br>Discrepancies in developmental areas<br>Secondary difficulties |
| <b>Characteristics of the NonPriority Child</b><br>Child will not benefit from therapy<br>Context of child who does not need therapy<br>Historical aspects<br>Communication and associated areas                  |
| <b>Signs of Change</b><br>Communication aspects<br>Behavioural aspects<br>Cognitive aspects   |
| <b>Effectiveness of Intervention</b>  |
| <b>Management Options</b>   |

**Figure 8.22 Systemic Networks**

#### **8.6.6. Top-down or bottom-up**

Bliss et al (1983, p.185f) comment that the development of a network can proceed in a top-down or bottom-up manner. In their experience, both occur at once and it is often the middle layers of a network which require building. In the development of these SGNs the underlying rationales of slts were used as a starting point, representing a top-down approach, ie, the least delicate categories were used to make a preliminary scan of the data and collate items. However, items often represented the most delicate features of the network; so the work of building the network in the middle was the

"struggle to link the two" (p.186).



### 8.6.7. The competence model

As a final means of evaluating the SGNs, it is useful to use the competence model (Johnson & Keravnou, 1988) described in section 4.7 to reflect on the contribution of the SGNs to an understanding of the selection and prioritisation process.

As indicated above, the knowledge represented in the SGNs should be viewed as factual knowledge, particular to the domain of preschool children's communication disorders, rather than as part of a general diagnostic reasoning knowledge. However, at a very general level, the SGNs can also be seen as a series of questions and answers that drive the diagnostic task. Following Johnson & Keravnou's portrayal (1988) of the task (figure 4.5), terms to the right of the SGNs, that is, the least delicate, are similar to the "supertasks". They guide the slt as to the areas to be investigated (fig 8.23). The terminals of the SGNs, the most delicate terms to the right, are the conclusions to those investigations.

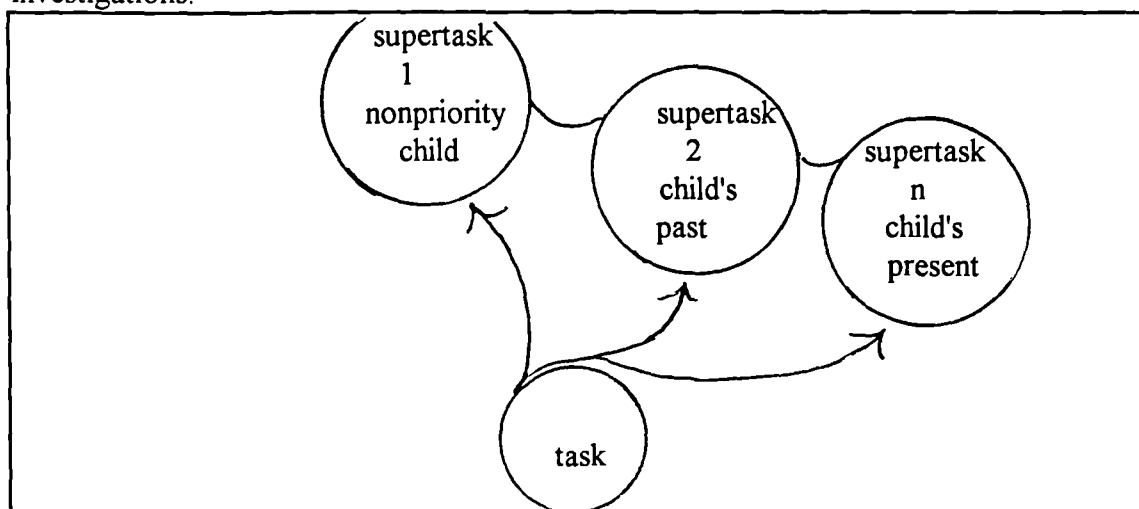


Figure 8.2329 SGNs as supertasks

So the SGNs do not guide the minute-to-minute deliberations of slts as they conduct their assessment but provide an overall framework for the domain concepts and their interpretation as evidence of the priority or nonpriority status of an individual child.

### 8.11. CONCLUSIONS

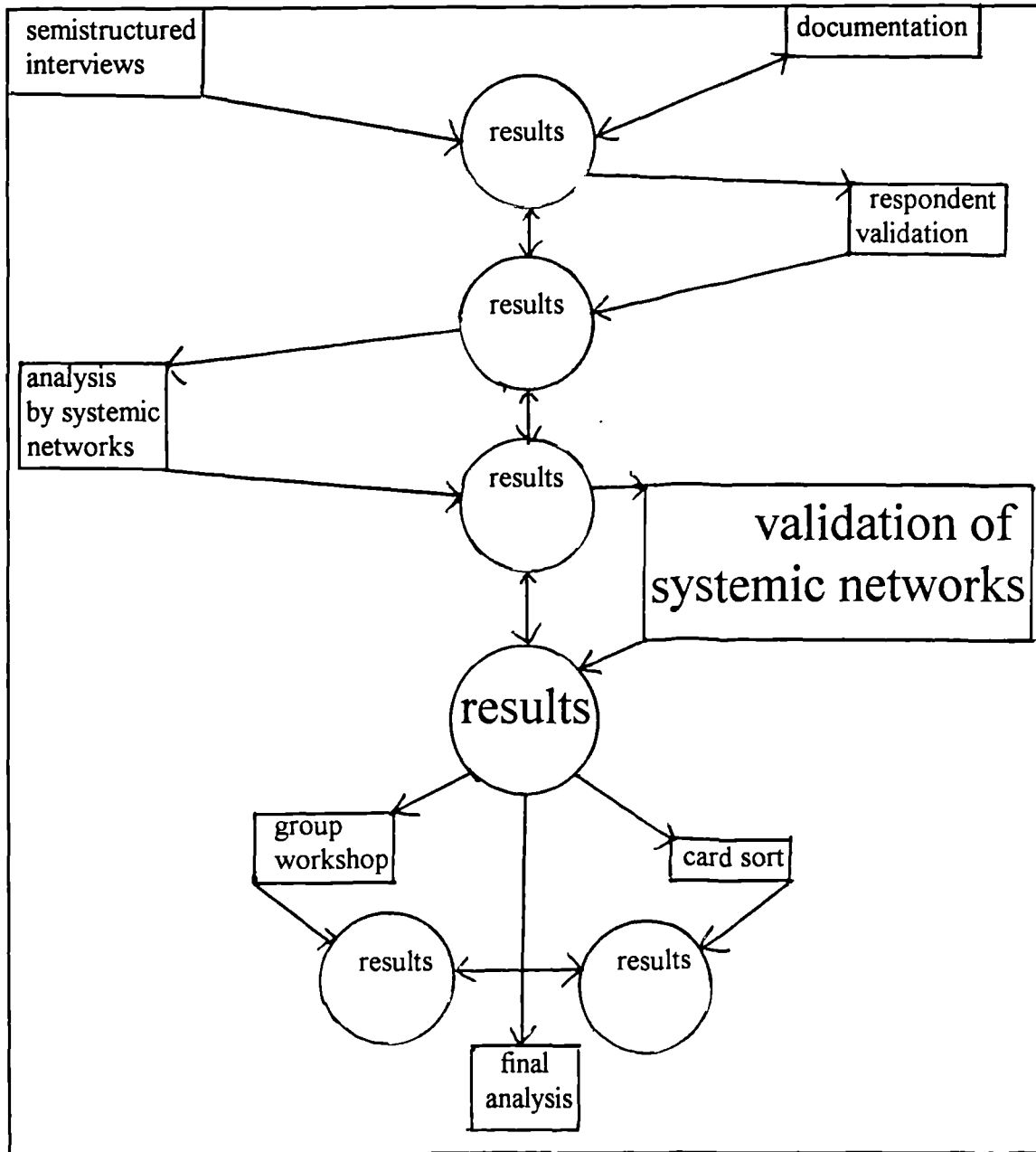
The notational form of systemic grammar networks has been adopted, content-free, from the field of systemic linguistics for the purpose of qualitative data analysis. A description of the notation and how they were used in the analysis of interview data has been presented. The networks represent the researcher's interpretation of slts' views of

significant factors to be considered during the assessment of a preschool child. They show those factors which are used by slts to distinguish between priority and nonpriority children. Furthermore they can be used as a framework within which information gained through assessment can be interpreted. For example, a finding of sibling history of communication disorders can be seen to be associated with a priority child.

The story of the project might have been completed here. After all, here is the range of options which might influence a slt decision, mapped out explicitly within the SGN representation. However, this level of representation is only the first stage of the story. The categories represented only factual knowledge, showing the significance and meaning of findings but not their strategic use in the decision process.

This study was planned as a multimethod process, and informed by GT; the aim was to use successive probes in order to build a model of the process of selecting preschool children for SLT. The successive probes are an important way of achieving depth to the study since each stage informs the next and provides insight to the process under study. Successive probes also provide the means by which to test the validity of the emergent categories. It was therefore planned to evaluate the interpretation contained within the SGNs against further incoming data and to check their face validity in the eyes of the expert group. A process of respondent validation was a planned part of the design and is described in the next chapter.

# CHAPTER NINE EVALUATION OF SYSTEMIC GRAMMAR NETWORKS



## **9.0. INTRODUCTION**

The next stage of the study had a two-fold purpose: firstly, the categories contained in the SGNs were to be submitted to the scrutiny and evaluation of other expert speech & language therapists (slts) Further, it was the intention that this process of evaluation should be a constructive one whereby solutions to any identified problems might be suggested and further light shed on the selection process. The procedures used to achieve these two aims are described below.

The results are presented and discussed in two sections. Firstly, the levels of agreement between slts are analysed using quantitative methods; these results are then discussed. The second section presents an analysis of the changes made to the structure and content of the SGNs by slts. This section draws on comments made by slts in debriefing discussions. The results of this second analysis are then drawn together with the results from the agreement section into a final discussion of this exercise.

### **9.1. AIMS**

As indicated above, then, the next stage of the study has two main aims:

- to validate the categories represented within the SGNs.
- to probe for further categories and relationships between categories which shed light on the selection process.

## **9.2. METHODOLOGICAL CONSIDERATIONS**

### **9.2.1. Consensus as validation**

Validation, a notion used widely within the field of psychological testing, looks at how well a test, or in this case SGNs, represent what they purport to represent. So for example, is the representation acceptable in the eyes of the expert body who supplied the data. Law (1992, p.112) describes face validity as consensus amongst those who have generated the measure that it is clinically acceptable.

A way of validating the SGNs then, is to look for consensus acceptance of the representation amongst Speech & Language Therapy (SLT) experts. Consensus also provides a wider view of their validity: earlier discussions suggested that consensus has a

role to play in the validation of data as belonging to the SLT body of knowledge rather than being idiosyncratic.

### **9.2.2. The context for validation**

Since the SGNs are supposed to represent features of slts' decisions, a view of their validity should include an evaluation of their performance in the context of that decision. This was desirable for other reasons: previous discussion had highlighted the difficulties for experts when interpretations of data are presented out of context section 6.1.9. It was therefore decided to base this exercise around real cases, using information usually available to slts at initial assessment. In particular, it was intended to evaluate how effectively slts could represent their decisions within the networks. If, following an assessment they decided to see a child for intervention, for example, could they adequately show factors which had influenced them and did structures of the networks reflect the relationships between items adequately.

A process was required therefore which enabled the identification of any omissions, ambiguities or errors in the SGNs; it was also hoped that the process would throw up potential solutions to such problems. The exercise therefore had to be sufficiently flexible to allow slts to offer their additions, alternatives and corrections and in the process spontaneously provide new data.

### **9.2.3. Quantitative component**

Whilst in the respondent validation exercises some simple counts and percentages were used, the emphasis remained firmly qualitative. During the evaluation of the SGNs, the balance shifted slightly. Whilst some of the questions to be asked retained a qualitative emphasis, for example, looking at the *nature* of the changes slts made to the networks, others focused on, for example, the amount of agreement, - a question of quantity. This part of the study maintains the 75% level of agreement as indicative of substantial consensus. Chi square and Kendalls coefficient of concordance are also used to investigate agreement.

## **9.3. SPECIFIC QUESTIONS**

More specifically then, the aims of this part of the study were as follows:

- i) to examine levels of agreement between slts.

ii) to examine changes made by slts to the structures and content of the SGNs as they represented their decisions.

## **9.4. PROCEDURE**

### **9.4.1. Sample**

It was at this stage of the study that the sample size was increased. So, whilst a more diverse group geographically, the expert slts had a more specialist experience of work with children in community clinics. The time commitment was set at approximately three sessions - one to introduce the task, one for slts to complete the task itself and one for a debriefing session, over a time period of six weeks. Full details of the SLT experts are given in section 6.3.3.

### **9.4.2 Case histories**

Slts were asked to record significant factors with respect to six real cases:

two children from their own caseloads who they had assessed themselves and for whom they had their own case data.

four children in the form of written case histories taken from the author's caseload.

The four children were aged between 2 years and 3 years 3 months and were selected on the basis of the different management decisions taken at initial assessment which were as follows:

Case 1: follow up assessment arranged for 2 months time;

Case 2: placed in an intensive phonology group - twice a week for one month but having to wait for 3 months for next suitable group;

Case 3: no further action from SLT;

Case 4: to be seen long term once a month.

The information provided to slts was that recorded at the end of the initial assessment for each child.

### **9.4.3. SGNs as recording tools**

It was decided to use the SGNs as a record keeping device, to note factors which were felt to be significant in the selection and prioritisation of the six cases. An 'assessment'

booklet (Appendix F) was prepared for the purpose, one for each child. Each booklet also asked slts to record the time taken to complete the task for each child. Slts were asked to highlight on SGNs those categories which best represented findings which had influenced their decision.

To aid slts with the task, an instruction booklet (Appendix G) was also compiled. This contained the written case histories of the four children, a worked example of the task and the network glossaries. Each slt was visited at her place of work. The tasks were explained and slts were talked through the worked example in the instruction booklet. Two completed examples are given in appendix H.

#### **9.4.4. Debriefing discussions**

A debriefing visit was arranged for six weeks later. During these six weeks slts completed the assessment booklets for each of the six children. It was decided to hold personal debriefing sessions for a number of reasons. Firstly the aim was to provide an opportunity for slts to comment on the networks, report any difficulties and to give their views on the exercise. It was also felt that it would encourage completion and prompt return. Finally, the exercise was time consuming and a personal debriefing session could be used specifically to give praise and thanks. These discussions were tape-recorded and used as a reference during the qualitative analyses.

### **9.5. RESULTS**

The main results are presented and discussed in two sections: firstly looking at consensus between slts and secondly examining the nature of the changes made to the SGNs. Before the detailed presentation of results however, some general comments are offered on slts' response to the task.

#### **9.5.1. RESULTS: Slts' VIEWS OF SGNs**

Slts were positive and constructive in the way they tackled this exercise. As predicted, they were unfamiliar with the formalism; however, they responded with good will to the challenge and reported a growing ease with the notation. Almost half the slts made positive comments concerning the value and/or validity of the networks. For example,

"..an interesting way of looking at things and it certainly breaks it all down"  
"I've seen loads of new cases recently and it makes you think about what makes you make the decisions"  
".. they're wonderful and the more you do, the quicker it is and the more useful."  
"..I enjoyed doing them and found them really quite challenging"

Others were more cautious pointing out specific aspects which had been problematic, rather than making global criticisms. Even slts who made general positive comments had much to contribute when it came to the specific networks.

Without exception, slts commented that the process was more difficult using the set case notes than for their own case. The value of having *seen* a child was frequently commented upon:

"when I got to doing my own, I was more familiar with them anyway. I found it easier and quicker, because you've got your own picture in your mind, you don't have to sift through someone else's information.."

The process of highlighting paradigms on the networks seemed to stimulate reflection on their decisions that, for some, carried beyond the exercise itself to the rest of their clinical work and they confidently represented their decisions within the networks, amending and annotating freely as they did so.

### **9.5.2. Results: agreement**

Levels of agreement between slts were investigated as a means of validating the SGNs and as a part of the methodological process of establishing the knowledge as part of a broader SLT body of knowledge. Because all ten slts used the same four written case histories as the basis for their responses, it was possible to make a number of comparisons, examining slts' views of the children and significant categories.

#### **High-low range of the ratings:**

There were differences between slts in the range of ratings used to characterise the priority level of the four children. (see Appendix J for a table of all the ratings). So, when using the 0-5 scale to indicate the priority level of children, some slts used the ratings at the extreme ends of the scale, others used ratings within a narrow band. Figure 9.1 shows that within the 0-5 scale, two slts utilized the full range for the 4 cases, another used a relatively narrow range (2-4), some rated cases relatively low (0-3) and others



relatively high (1-5). So there was variability between slts in their interpretation of the rating scale with respect to these four children.

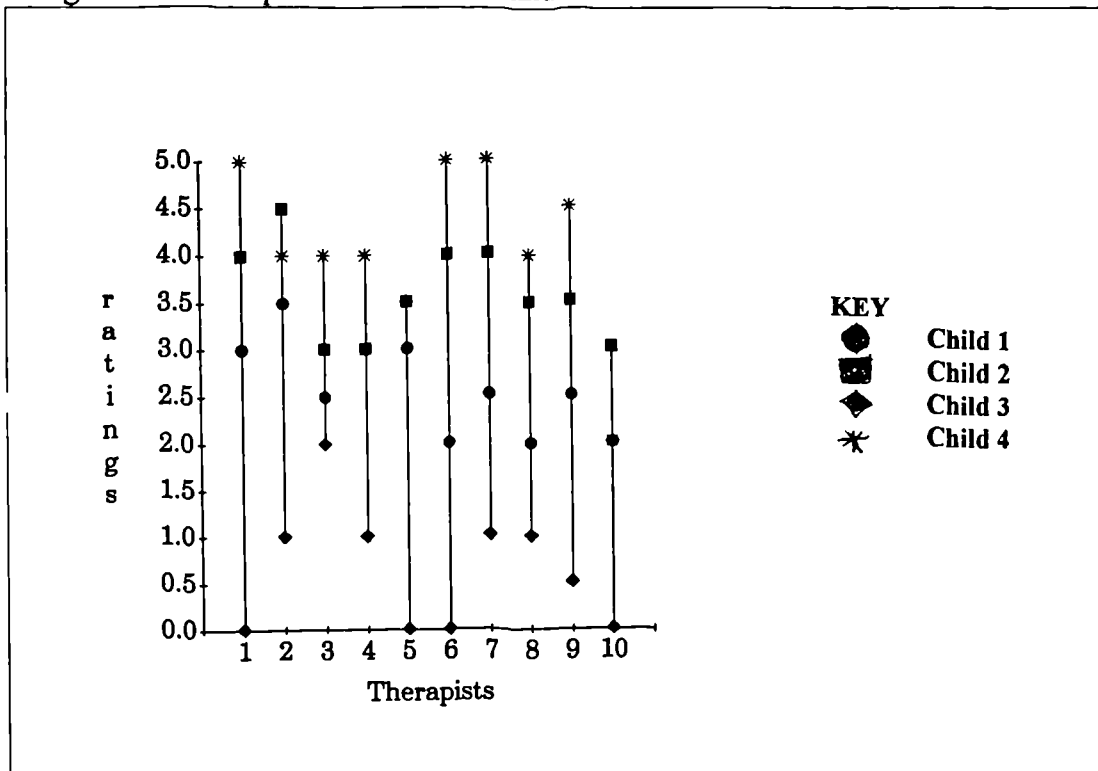


Figure 9.1 Range of the ratings

However, if the way that slts ranked the four children is examined, agreement is evident. The Kendall coefficient of concordance, W was used to examine the association between their ratings in terms of their relative ranks. This test is recommended as particularly useful for studies of interjudge reliability in a nonparametric context (Siegel & Castellan, 1988, p.262) and is therefore appropriate to check consensus between the slts. As four of the slts had tied ranks, the formula includes the recommended correction for this so that

$$W = \frac{\sum 12 R^2 - 3 k^2 N(N+1)^2}{k^2 N(N^2 - 1) - k \sum T}$$

where R is the sum of the squared ranks, N is the number of case histories, k is the number of slts and T is the correction for the tied ranks.

For these slts therefore, W = 0.528. The critical value for W at N=4, k=10, at 0.01 level of significance is 0.36. W is larger than the critical value suggesting that the rankings are not independent. This can be interpreted as saying that the slts are applying "essentially the same standard" (Siegel & Castellan, 1988, p.271) in ranking the four case histories.

## Categories coded

Figures 9.2-9.5 show the number of slts highlighting the various categories within each case. So figure 9.2 shows that for the first written case history, ten slts selected changes in communication as significant, whereas only two selected behaviour changes as significant in this case. As indicated above, substantial agreement was defined as 75%. So, substantial consensus can be seen in those categories where eight or more slts have selected a category or where eight or more have not selected a category. In the first case history then, substantial agreement was reached on nine of the fourteen categories; in the second case history (figure 9.3), substantial agreement was reached in twelve of the fourteen categories, ten out of fourteen in case three (figure 9.4) and finally, twelve out of fourteen in the last case history (figure 9.5). However, where consensus occurs on non-selected categories, this does not necessarily mean that slts agree that this category is not influential; information may not have been available. It is therefore the selected categories which are of particular interest. This makes the numbers more difficult to interpret since the balance between priority and nonpriority cases and categories is not equal. Overall, though it can be seen that slightly higher levels of consensus occurred with respect to the second and last case histories. These were rated by slts as the two highest priority of the four cases.

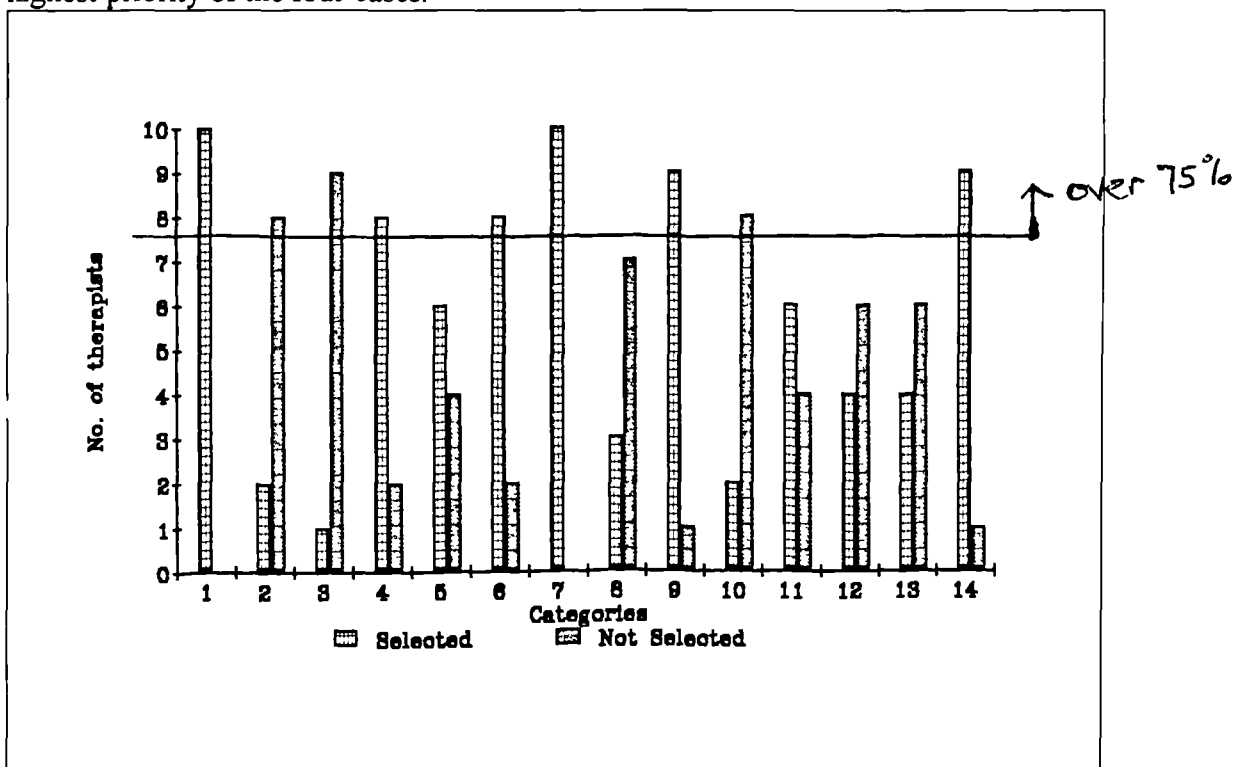


Figure 9.2 Categories coded by slts: child 1

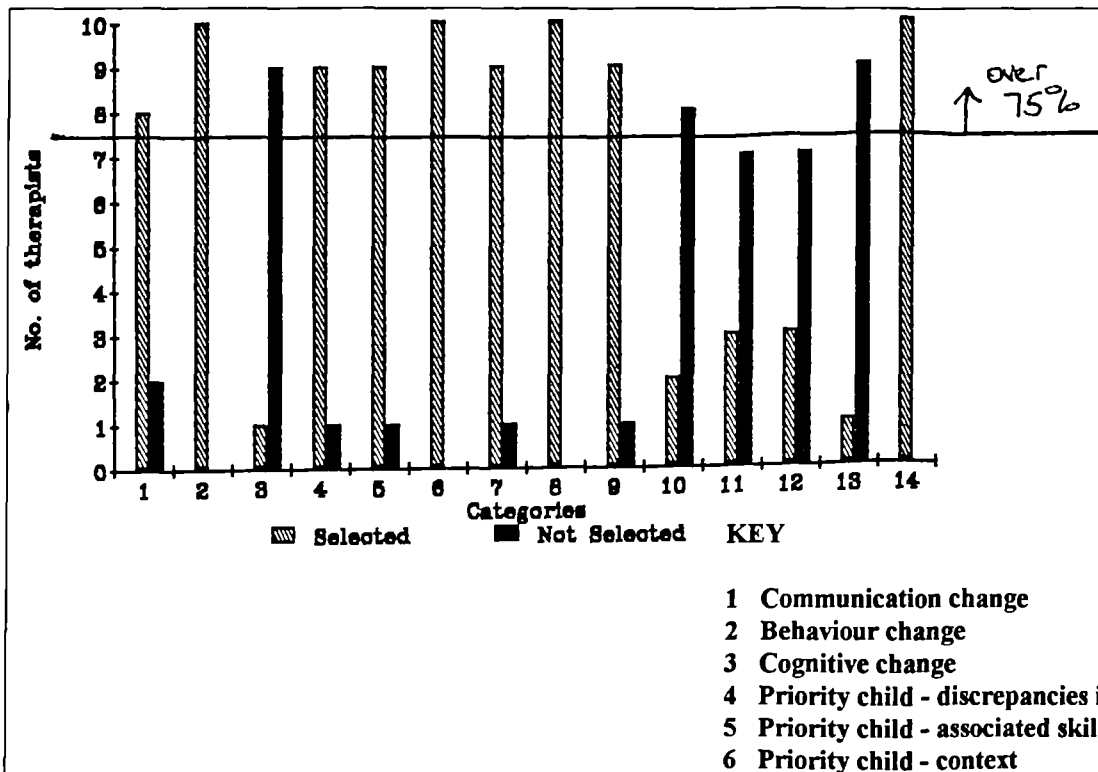


Figure 9.3 Categories coded by slts: child 2

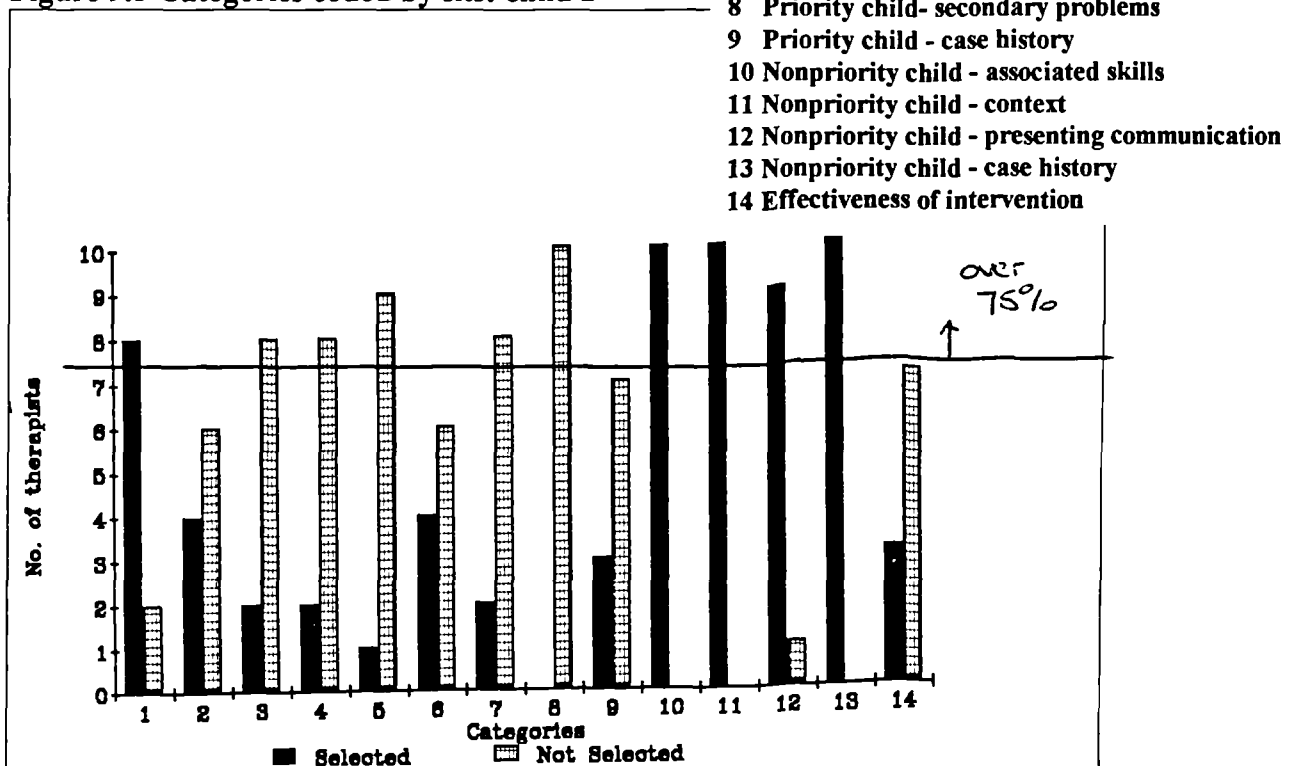
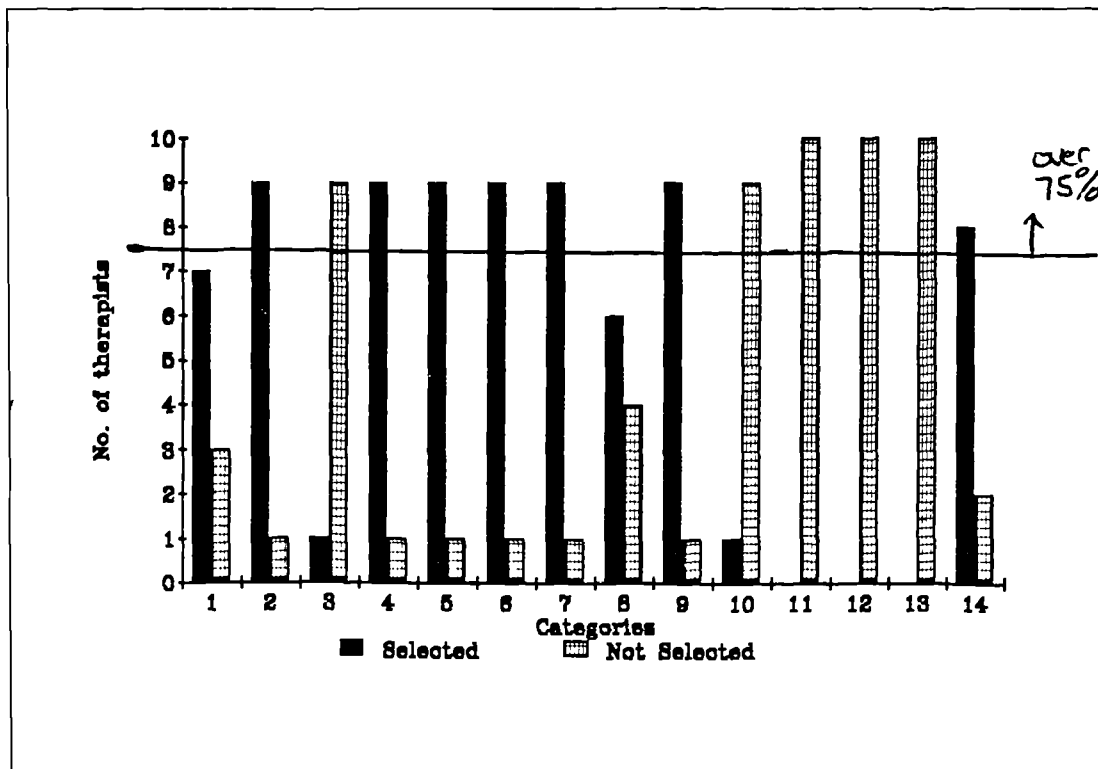


Figure 9.4 Categories coded by slts: child 3



**Figure 9.5 Categories coded by slts: child 4**

**Percentage of networks selected**

A further quantitative analysis was made in the form of a count of how frequently categories were selected. This was done firstly for the 20 independent children assessed by slts, that is, the children from their own case loads, and secondly, for the four case histories as a contrast. The number of actual codings was compared with potential codings to obtain percentages (table 9.1).

The analyses shown in figures 9.2 - 9.5 asked, if slts agree about the specific categories yielding significant information for each child. This next analysis did not look at agreement about the children, since they were from an independent sample. Rather it asked, for those children assessed, which are the categories with significant information. The analysis therefore shows categories most commonly yielding significant information for these slts in an independent sample.

In order to be able to compare the categories in this way, priority and nonpriority categories were combined and were only counted once per child. So that for example, if a child showed elements from a nonpriority language development history and a priority family history, then these were counted only once under 'history'. Only those networks which either have both priority and nonpriority aspects or are neutral in this respect were therefore included since it would be expected that the others would be differentially used with cases

with cases of varying priority levels. As there were more priority children than nonpriority children, the numbers would be difficult to interpret.

The following networks have therefore been excluded:

- Secondary factors
- Discrepancies
- Child who will not benefit from intervention
- Effectiveness of intervention

Similarly, within networks, categories were not always equally represented in priority and nonpriority versions. For example, 'interaction' features at the same level of delicacy as 'comprehension' and 'expression' on the priority network but is not specifically itemised on the nonpriority equivalent. The arrangement of categories within 'associated areas' is different in the nonpriority and priority networks. In order to make comparisons possible, two categories have therefore been omitted and some categories combined where their definitions were directly related to one another; this seemed to be particularly appropriate with social and emotional categories since therapists reported difficulties in distinguishing between them.

Deciding to which level of delicacy to pursue this analysis was not clear cut since the networks vary in the level of delicacy assigned to the various categories: one cannot merely pursue every network to the third level of delicacy and end up with comparable categories. The difficulties of maintaining coherent levels of delicacy was discussed in section 8.3.3. For example, the title of one 'signs of change' network (cognition) is a terminal in the priority 'associated areas' network. Comparisons have therefore been made of categories which are felt to be of comparable status.

Table 9.1 shows the percentage use of the various categories and their respective SGNs for the 20 independent cases and the four case histories. These have then been rearranged in descending order of frequency of use using the percentages from the independent cases as standard and the case history results to distinguish between ties. (Figures 9.6 & 9.7) It is clear that the stronger the communication element, the more frequently a category is used. So for example, language development history was highlighted more often than broader aspects of a child's case history; similarly social aspects were highlighted more often than motor skills.

|  | SLT cases<br>(N=20) | case histories<br>(N=4x10) |
|--|---------------------|----------------------------|
| <b>COMMUNICATION</b>                         | 100                 | 100                        |
| Comprehension                                | 55                  | 60                         |
| Expression<br>(priority interaction omitted) | 90                  | 95                         |
| <b>CONTEXT</b>                               | 100                 | 97.5                       |
| Level of concern                             | 100                 | 97.5                       |
| Environment/Facilitation                     | 100                 | 97.5                       |
| <b>ASSOCIATED AREAS</b>                      | 90                  | 87.5                       |
| Social<br>(includes social and emotional)    | 60                  | 65                         |
| Cognitive<br>(includes attention and play)   | 60                  | 60                         |
| Motor<br>(priority perception omitted)       | 25                  | 22.5                       |
| <b>HISTORY</b>                               | 90                  | 75                         |
| Language development                         | 85                  | 90                         |
| Family history                               | 60                  | 45                         |
| Causative factors                            | 35                  | 35                         |
| <b>SIGNS OF CHANGE</b>                       | 80                  | 90                         |
| Communication                                | 75                  | 77.5                       |
| Behaviour                                    | 45                  | 65                         |
| Cognition                                    | 30                  | 12.5                       |

**Table 9.1 Percentage use of networks and key categories.**

|  |
|--|
| Communication<br>Context<br>Associated areas<br>History<br>Signs of change |
|--|

**Figure 9.6 Networks headings: descending order of use**

|                                   |
|-----------------------------------|
| Level of concern                  |
| Environment/Facilitation          |
| Expression                        |
| Language development history      |
| Change in communication           |
| Associated social difficulties    |
| Associated cognitive difficulties |
| Family history                    |
| Comprehension                     |
| Change in behaviour               |
| Causative factors                 |
| Change in Cognitive aspects       |
| Associated motor factors          |

**Figure 9.7 Subcategories: descending order of use.**

## **9.6. DISCUSSION**

### **9.6.1. Interpretation of consensus**

Levels of consensus or agreement between slts were identified as a means of evaluating the incoming data: if slts agreed, that information is of significance or that information signifies a priority child, then it can be argued that these views are more likely to emanate from a body of SLT knowledge than being idiosyncratic views. Of course, in this study the number of slts was small and therefore the results are of little predictive value. The quantitative element is used rather to highlight similarities and differences which can then be further explored qualitatively through the verbal data and through subsequent data collection in order to gain insight into how slts make their decisions.

### **9.6.2. Substantial consensus**

Despite variation in their use of the rating scores, significant agreement was found between slts in the way they ranked the case histories. So that although they may have accorded a case a different rating, when comparing cases, they saw them in similar orders of priority. For each of the four case histories, substantial agreement was reached in over half of the categories selected; in the two higher priority cases, substantial agreement occurred in twelve of the fourteen categories (86%).

Records & Tomblin (1994), in their study of slts' diagnoses of language impairment, reported that greatest agreement was found with respect to cases at extreme ends of the

severity spectrum. These were also the cases that slts felt most confident about. Records & Tomblin suggest that it is the borderline cases which cause most difficulty and if slts had access to more information (their diagnoses were made on the basis of formal test results only), for example, to spontaneous speech performances, then agreement and confidence might increase.

The differences between levels of agreement were only slight in this exercise but reflect a similar trend, suggesting that agreement will increase with the higher priority children. Similarly, making judgements on the basis of someone else's written case history alone limits the amount of information available. Had slts assessed the children themselves, greater unanimity may have been found for the other two lower priority children.

### **9.6.3. Factors investigated**

Since the knowledge domain under consideration is that of SLT, a profession whose key focus is communication, it was unsurprising that communication factors and those related closely to communication should be highlighted more frequently than other categories. This issue is discussed in more detail below. (section 9.9.2)

A rather surprising finding was that comprehension was selected as significant in only approximately 50% of the children. This was in conflict with the results of the RV exercises where comprehension was reported to be always important. (appendix C) However, for the children in this study who were subsequently discharged, comprehension was always considered significant. This suggests that slts will prioritise a child on the basis of their expressive language alone, but would need to be reassured that comprehension was satisfactory before discharging. So, where slts are confident there is a problem, they do not scan such a range of categories, knowing that they can pick up the investigation later; where there is the possibility of discharge, slts check more avenues to be secure in their decision.

This view was supported by comments made by slts in the debriefing discussions. One slt remarked:

"with the families that I'm worried about I know I'm going to see that family again and don't need to ask everything..."

Another picks up a similar vein:

"I don't need to ask everything in this session, therefore I will ask it at the next or even the next session.."



## **9.7. RESULTS: CHANGES MADE TO THE STRUCTURE AND CONTENT OF THE SGNs**

One of the main aims of this exercise was to submit the SGNs to the scrutiny of other expert slts. It was hoped that using real case data would facilitate this evaluation process by helping slts to focus on the SGNs in detail.

This analysis therefore looked to see what slts had done with the networks as they attempted to represent influential factors. It examined, in particular, the changes they made either accidentally or deliberately to the structure and content of the networks. Although the notational forms were explained to therapists, they were not expected to stick to them rigidly; they were in fact encouraged to add to, delete or change the networks in any way and if the BARs or BRAs put constraints on ideas they wished to express, they were encouraged to ignore or change the notation. It was emphasized that the aim was not to standardize the networks but to use them to elicit further clarification of factors which were influential in their decision making.

An overview of the types of structural and content changes is given here. A detailed review of each network is given in Appendix K.

### **9.7.1. Highlighting paradigms**

Slts had been asked to use coloured highlighters to indicate significant paradigms within the networks. Different colours were to be used to follow through different paradigms. So a single pass through a network would be represented by a single colour; a second pass through the same network was to be carried out in a different highlighter colour. In the event, this caused some confusion and all slts made errors, although more than one admitted to using all the colours available at some point for sheer variety!

### **9.7.2. Task order**

A number of suggestions were made at the outset as to the order in which to complete the task. If it was their decision to see a child again slts were recommended to start highlighting with the Priority networks and subsequently scan the Nonpriority section, and vice versa where they did not plan to see a child again. Slts did not always follow this recommendation. This led to attempts to use the wrong network to reflect an

opposite decision. (For example, trying to code a nonpriority environment on the priority network) However, even where slts followed the advised order, unfamiliarity with the networks led to attempts to code information on an inappropriate network or at an inappropriate place on a network. This seemed to occur particularly with case history aspects and level of family concern. So for example, one slt had coded family history as a significant priority factor; in discussion, it transpired that this had actually had the opposite effect and acted as a nonpriority factor.

### **9.7.3. Structural changes**

The notational structures of the SGNs contain hypotheses about how information is combined within the selection decision. So for example, BRA brackets hypothesize that all categories at that node would be selected as significant with respect to a particular network paradigm.

An examination of what slts did to the structures as they represented their decisions therefore enabled an evaluation of the hypotheses contained therein.

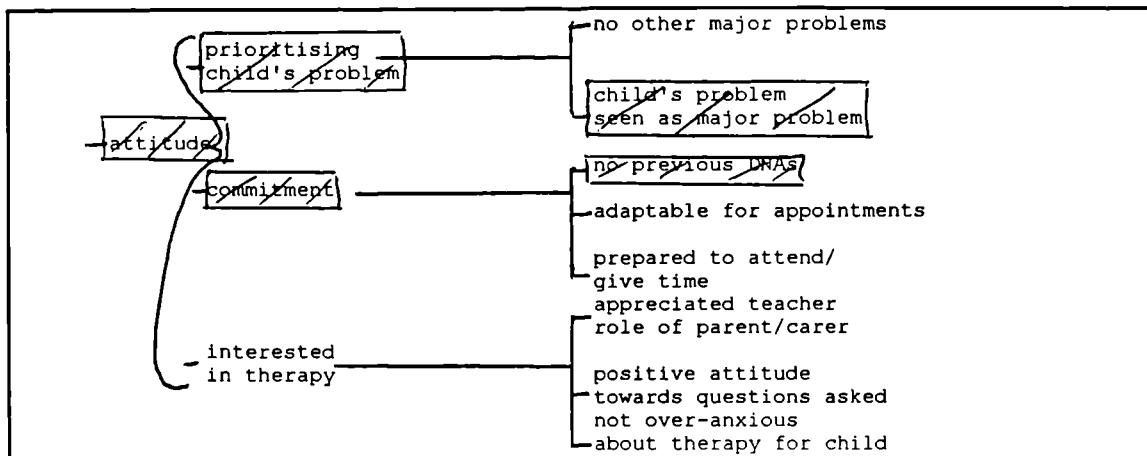
Therapists subverted the structure of networks in three ways:

#### **a) non-selection of a BRA category**

BRA brackets say that selections should be made from each of the categories co-occurring at the BRA node, indicating a hypothesis that *all* the categories at this BRA would be considered in order to adequately fulfil the criteria for paradigm. Where co-selection at a BRA should have occurred, slts did not always code all co-occurring categories. (Fig 9.8)

#### **b) multiple selection of BAR alternatives**

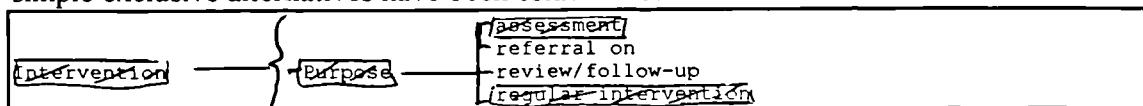
Where therapists should have made a choice of one alternative from several at a BAR, they selected more than one, treating the node as if it were recursive.



**Figure 9.8 Nonselection at BRA node**

One slt did in fact draw in her own recursive arrow suggesting that the principles of the notation were understood. A common example was in the purpose of intervention paradigm (figure 9.9). Slts wanted to indicate that assessment would occur as part of regular intervention and wished to make this explicit rather than leaving it as assumed. So in order to represent their ideas fully, they do not make a choice from the alternatives but select both.

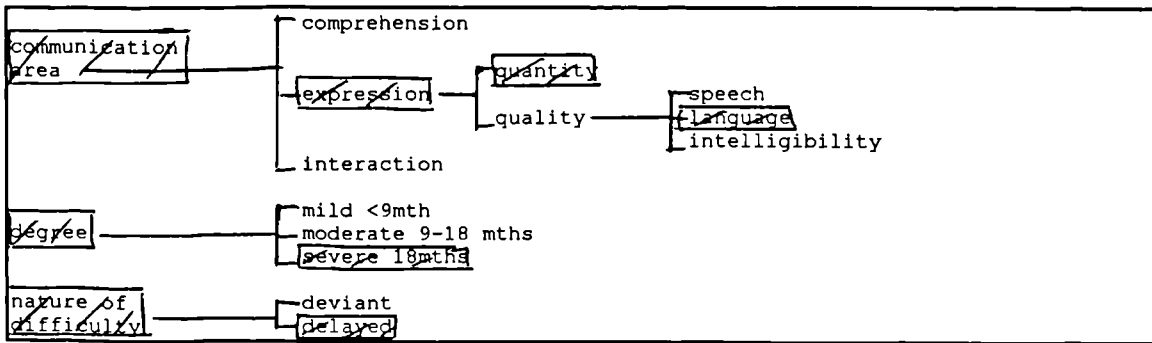
Where BARS did achieve 100% adherence to the structure, this seems to confirm that simple exclusive alternatives have been established.



**Figure 9.9 Multiple selection of BAR alternatives**

### c) cross-track coding

When highlighting a paradigm, the aim is to move through the terms from left to right, from least to most delicate. However, slts occasionally jumped across tracks using the terms of one track to define another. This mainly occurred on the Priority communication network. (Figure 9.10) As shown in the example, slts wanted to define quantity in similar terms to quantity and jumped across the network in order to represent this.



**Figure 9.10 Cross track coding**

#### 9.7.4. Decision Possibilities

The three main decisions allowed by the notational structure of SGNs are summarised in table 9.2. A count was made of the times when, if a network was used, the decision possibilities were upheld by the slts' selections.

| Decision possibilities                | % upheld |
|---------------------------------------|----------|
| select only one of several categories | 32%      |
| select all categories                 | 12%      |
| select one or more categories         | 100%     |

**Table 9.2 Decision possibilities upheld**

It is clear that the recursive choice, where it is possible to select either one or more than one category was the only one to have been used judiciously. The other two types of structure were subverted by slts a high proportion of the time. An examination of where and how these changes affected each network takes place below.

#### 9.7.5. Content Changes

Slts had been encouraged to add, change or delete categories as necessary to the adequate representation of their decision. At this point an example is given of each type of change.

a) new information added

most slts, at some point indicated additional information that they had not been able to represent in the networks, for example, early feeding and chewing skills.

b) categories further differentiated

in some instances, slts added another terminal into an existing category or altered the wording to produce an additional terminal. For example, a further terminal 'language and intelligibility' was added to the set of priority discrepancies. Slts also occasionally added explanations of their selected paradigms.

c) synonymous terminals identified

terminals for some categories were felt to be either synonymous (eg difficult behaviour, temper tantrums) or represent distinctions that were not reliably made in practice (eg, reasons for change: no specific causation vs maturation)

d) categories/terminals queried

the definitions of categories was sometimes queried, for example,

"does language include phonology"

"does speech include intelligibility"

"play and attention would be better categorised as prelinguistic skills rather than cognitive".

#### **9.7.6. Individual networks**

Each SGN was then evaluated in terms of the structural and content changes incurred as slts represented their decisions. Although some of the networks were presented in a simplified form, the analysis considered the networks in total as they were originally designed. (see Appendix K)

### **9.8. SUMMARY OF RESULTS**

This section will give a summary of the main results:

- \* statistically significant agreement was found between slts in the priority ranking of the four case histories, suggesting that they attended to essentially similar features of the case;
- \* slts showed substantial agreement for 77% (range 75-86%) of the categories in each case history that those categories contained findings that influenced their decision;
- \* slightly higher levels of agreement were found in higher priority cases;
- \* the child's present communication, unsurprisingly, was always regarded as influential;
- \* features more closely connected to communication were recorded as significant more frequently than those more loosely connected;

- \* comprehension was highlighted as significant in all nonpriority cases but not all priority cases;
- \* the level of concern and the amount of support in the child's environment were considered to be influential almost always;
- \* slts did not differentiate easily between secondary and associated features;
- \* whilst noting and attending to some case history features (eg family history), slts did not always feel confident about their significance in a particular case;
- \* the terms mild, moderate and severe could not be attached to specified delays in terms of months; definitions of deviance versus delay were also problematic;
- \* the dichotomy between priority and nonpriority did not adequately represent the management decisions for some slts
- \* structures of nonpriority SGNs were not challenged as frequently as those of priority versions;
- \* evaluating potential effectiveness occurs over time and negative findings at an initial assessment would not deter slts from offering intervention.

## **9.9. DISCUSSION**

This discussion will draw together the main results of the exercise as a whole and evaluate them in the light of the aims set out at the beginning of the chapter, that is, to validate the SGNs and to probe for further categories.

### **9.9.1. Validation of the SGNs**

The first aim of this exercise was to evaluate the SGNs as an interpretation and representation of the selection and prioritisation process. Their validity was tested by asking expert slts to use SGNs to record features of a case which influenced their selection and prioritisation decision.

### **Supported structures**

If the SGNs had face validity for slts then one would expect that a high proportion of the notational rules would be followed. The overall analysis presented in table 9.2 therefore seems disappointing: only the recursive nodes, which allow an either/or decision were fully supported. This does reflect the difficulty described in section 8.6.1 when developing the networks: it was difficult to identify exclusive alternatives.

However, the detailed analysis (appendix K) shows a much more positive picture with some of the central tenets being confirmed. In particular, features from the child's present communication and the child's context were shown to co-occur on almost all occasions, as predicted in the SGN structure. Generally, slts' decisions were represented on appropriate networks, so that priority children were more likely to have features recorded on priority networks and vice versa. Furthermore, with the nonpriority network, the notational rules were more likely to be followed with nonpriority children. This suggests that the categories have been allocated appropriately to nonpriority and priority versions of the SGNs.

### **Priority versus nonpriority**

However, although the balance of categories in priority and nonpriority groups was supported, slts were unhappy with this simple dichotomy. There were occasions when keeping a child on SLT lists did not equate with the slt's notion of priority, although this was not true for all slts. Some slts carry a review list and others do not, the latter preferring a two-way decision. The two SGNs therefore have to be seen as the opposite ends of a continuum of response. Children who are discharged are likely to show features which support the nonpriority SGN structure and vice versa, children with major problems are likely to show features which support the priority SGN. With a small sample as in this study, points along the continuum were not possible to identify.

### **Clarifying terms**

The SGNs proved to be a useful vehicle for clarifying terms: slts pointed out synonymous terms, overlapping and ill-defined categories. As hoped, the process was a constructive one with slts often offering alternatives. For some areas however, slts had no particular solutions. For example, whilst using terms such as delay, deviance, mild, moderate and severe on a regular basis, slts were aware of the variety of interpretations that exist but gave no suggestions as to how this might be avoided or overcome.

### **Potential versus actual paradigms**

Concern was expressed in sections 8.6.1 that not all paradigms represented in the SGNs were instantiated in the data, that is, that an instance or example of the paradigm could be substantiated or found in the data. However, it was to be expected that some categories and paradigms would not find instantiations. The sample of children used was small (24 different cases) with only a small percentage of nonpriority children. This means that categories or paradigms which were not instantiated cannot be ruled out. This was not an exercise to find further instantiations necessarily, but as a search for negative instances. Following qualitative methodological views, negative instances can be used to promote the development and testing of theoretical models. Where a negative instance is found, this acts as a challenge to the theory which must be dealt with.

### **9.9.2. Emergent relationships and categories**

The second aim of the exercise was to shed further light on the selection process beyond that already represented within the SGNs. Rather than merely attempting to standardise the SGNs, they were used to stimulate reflection on the process of selection and prioritisation. This discussion will focus on two particular issues: the key categories influencing slts, that is, the child's communication and context, and secondly, hints from the data as to the process itself.

#### **Primacy of communication and context**

Although the co-occurrence of communication and context was contained in the overall structure of the SGNs, slts had no access to the larger networks. The confirmation in the data, whilst not 100% is therefore still striking. As indicated, the significance of a child's communication skills is hardly surprising. However, the prominence of a child's context is not self-evident.

Other models such as those discussed in section 4.3 - 4.4 vary in the emphasis given to context relative to communication. For example, in the Ward et.al. decision tree (1990) three of the eight categories relate to a client's communication skills, four relate to secondary effects of the communication problem, three involve issues connected with potential response to intervention and one is concerned with client and caregiver anxiety. This latter would come under the SGN context category. All routes through the tree connect with at least one of the communication categories; three routes by-pass the anxiety category. The emphasis on potential effectiveness in the Ward et.al. tree differs from the findings here in that slts suggested that they would not use this to influence



their primary intervention decision although evidence accumulated over time would be taken into account in future decisions.

The Withers (1993) scoring system for prioritising clients focuses purely on communication skills. A decision was taken during its development to exclude aspects of the child's context as being too subjective.

Other flow charts and decision trees (Gerard & Carson, 1990; Yoder & Kent, 1988) along with the more general literature suggest that a child's presenting communication skills should be examined in the light of other factors such as the child's intellectual development, socialisation, medical history, environment and potential for change (Cole et al. 1990; Olswang & Bain, 1991; Paul & Elwood, 1991; Paul, Looney & Dahm, 1991; Rutter, 1987). The results here suggest that slts do indeed attend to the full range of features when they are present, although they are not always sure of their significance in particular cases. Whilst the features relating to potential effectiveness such as parental commitment and interest did not carry much weight as a first assessment in this study, these slts did seem to be looking for a child's potential for change *on their own*. Slts investigate whether or not there is enough existing support for change in the child's environment or if the child is only likely to change if offered some kind of external support through SLT.

So the child's context was seen to be particularly influential; that is, the level of concern (usually parents) and the sort of facilitation that was available were routinely considered. The child's level of difficulty is therefore balanced with the potential support that they are adjudged to need.

Finally, it is worth commenting on the need for further detail in the communication category as a whole. Given that this is their prime focus, it is again unsurprising that slts attend to this feature in a considerable amount of detail. Depending on the underlying model of communication followed, assessments of children's communication provide detailed descriptions of different linguistic rule systems (eg syntax, semantics, phonology) or developmental criteria or postulated cognitive neuropsychological processing, or standardised scores, some or all of which may be used during the child's initial visit. The SGNs gave very limited possibilities for representing these findings.

### **9.9.3. The process of the decision**

This exercise was not designed to look at process. Nonetheless, a couple of the findings are worth highlighting. Firstly, slts showed *individual differences in how they tackled the*

task. Some slts for example did not investigate progress or change occurring prior to the initial assessment. One reported:

"I don't give all that much credence to what is said about the last two months, I would monitor myself rather than rely on what is said".

The quote suggests a possible difference between slts in their relationship with families and other referring agents. Some slts treated information about change received from carers as reliable evidence.

Secondly, there was evidence showing differences which are dependent upon the presentation of the child &/or family on the day. In the preceding section, it was suggested that in an investigation, a single problematic aspect of communication is enough to prioritise a child, but that all aspects must be nonproblematic in order for a child to be discharged. This suggests that as slts conduct their initial assessments, they are searching through the communication skills for evidence of a problem.

In order to discharge a child after the first assessment however, a slt will have worked her way through a far greater range in order to rule out potential negative indicators. This may not be reflected in the time taken since, if children's skills are good, they are perhaps easier to evaluate. This was to some extent confirmed with the coding of comprehension. Slts highlighted comprehension more frequently in nonpriority children. Whilst this does not necessarily point to the iterative process described in section 4.6, it does suggest that the slt homes in on significant features rather than ploughing through the investigation in a linear set pattern.

## 9.10. CONCLUSIONS

The focus on SGNs was maintained in this chapter. They have therefore provided not only the means by which to analyse the interview data in the first place; they also provided the means by which slts could evaluate the interpretation placed on that data. That interpretation has been tested out with real case data, both *written case histories* and children taken from slts' own caseloads.

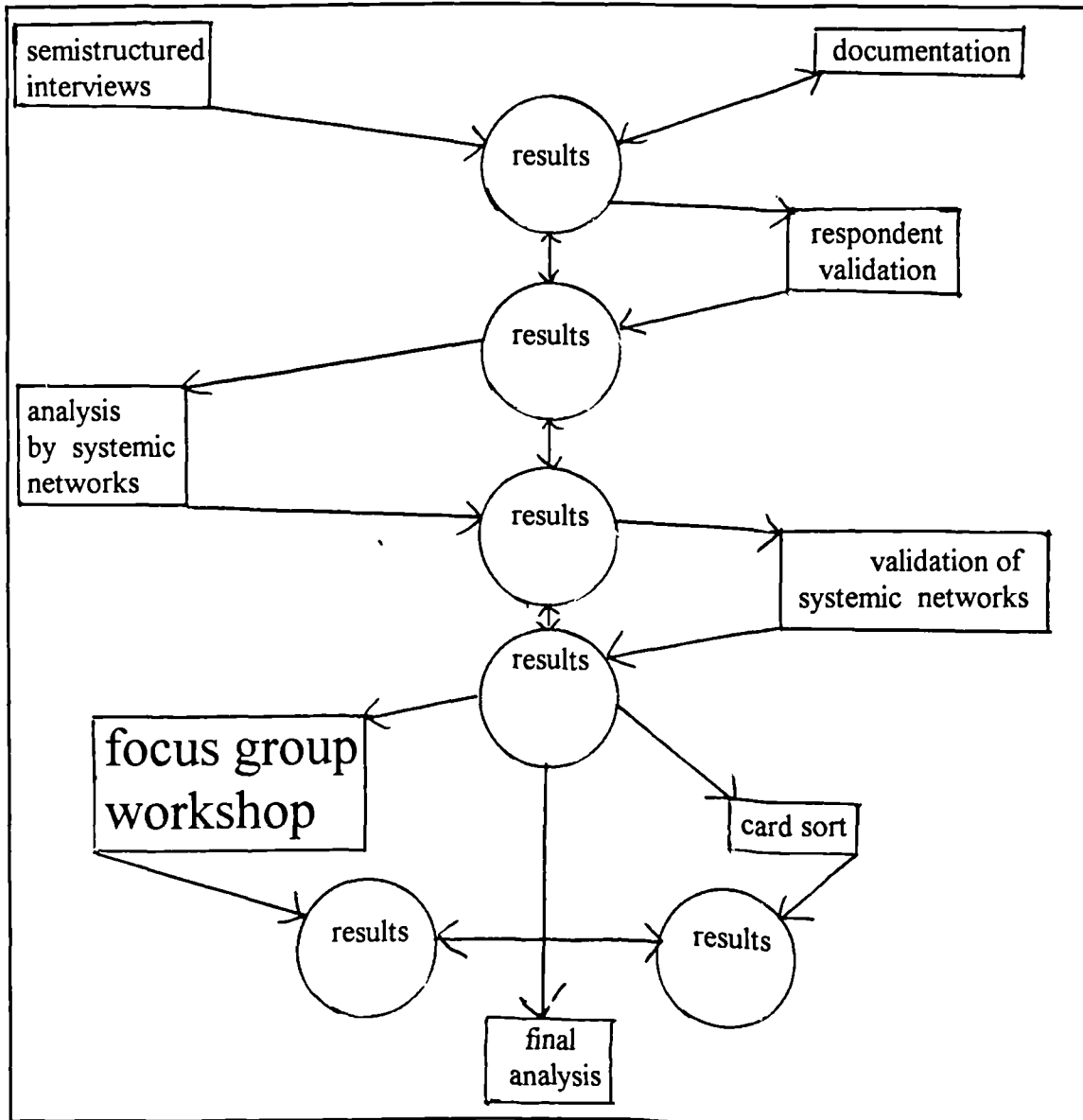
Using the SGNs in this way has proved an effective process for the stimulation of reflection in the experts slts. It confirmed some of the key relationships postulated within the SGNs, in particular, the co-consideration of the child's communication characteristics and the child's context. It has also produced further insights into the selection process in terms of additional detail and clarification of terms and the nonlinear nature of the investigation.

Simple quantitative measures were used to identify similarities and differences between slts in the way they make decisions. Consensus was also used as a means of testing validity: if slts agree about what and how they represent their decision within the SGNs, it gives some weight to the SGNs themselves.

So, using the methodology map, first introduced in figure 6.3, it can be seen that this chapter brings to an end the focus on SGNs, although the notational form is used again to represent further data at later stages. Following from this stage, the process of the decision had yet to be probed. Whilst the findings considered by slts in their investigations and the relationships between those findings had now been extensively explored, the strategic map which guides slts through the process of investigation and selection was uncharted.

# CHAPTER TEN

## FOCUS GROUP WORKSHOP



## **10.0. INTRODUCTION**

Following the analysis of the systemic grammar networks (SGN) more detail was needed as to the kind of concepts used by speech & language therapists (slt) to guide them through their investigations. To this end, an interactive group workshop was set up, attended by eight expert slts who viewed and discussed videotapes of assessment sessions. The aims of the workshop are set out below followed by a rationale for the techniques chosen. Data was collected in the form of written responses and transcripts of group discussions and the analysis proceeded by a series of scans to identify slts' problem formulations as the videotaped assessments proceeded.

As with previous stages of the project, the data was also examined for similarities and differences between slts and for confirmation of patterns and categories that have been apparent in previous data.

The chapter concludes with a discussion of the three aims. The problem formulations are displayed using Johnson & Keravnou's model of reasoning knowledge (1988) and finally are summarised in an SGN.

### **10.1. AIMS**

The main aim of this exercise was to identify the problem formulations of expert slts as they view an initial assessment of a preschool child. An additional ongoing aim of the project was to consider levels of agreement between slts; in this exercise, the particular aim was to identify sources of difference. It was also part of the methodological policy to seek confirmation of previous categories.

### **10.2. METHODOLOGICAL CONSIDERATIONS**

This section will present the main considerations which influenced the choice of techniques.

#### **10.2.1. Retrospective or concurrent**

Data collection so far has included a high element of real case data: the first interviews with slts had, as their starting point, slts' own initial assessments of children, as did one of

the confirmatory exercises; the validation of the SGNs likewise was based on real case histories from the authors' own case load and on children from slts own caseloads. However, the collection of the slts' cogitations on these sessions was retrospective. This in itself was not a problem. Ericsson & Simon (1984) argue that retrospective reports which immediately follow the cognitive activity can retrieve elements of that process (p.30). They note that there may be problems of interference from previously or subsequently occurring activities and, particularly if the gap between activity and reporting is too large, the expert may generate or infer what processes occurred rather than reports on what actually occurred. However, even though the data collection (eg, verbal reports, highlighting SGNs) happened immediately following the session, the data elicitation itself did not focus on process and slts provided their conclusions rather than a description of the process. Even when slts were asked to review the clinical session in the first set of interviews, only one provided a review of the decisions made during the session; the others produced a summary of the final decision.

As a result, at this point in the study, there was still little data on the minute to minute formulations that guided slts through their initial session with the child and parents. In section 3.5, it was argued that, particularly in domains where the phenomena are unstable and uncertain, the expert must frame their own context and decide what features of the problem are worth attention. This problem setting (as opposed to problem solving) stage of the process was the focus of this stage of the project, the particular question being what was the nature of the problems slts set for themselves throughout the investigation. It was suggested that these problem prototypes are the ways in which knowledge, acquired through experience, is structured for use and that as a result, relevant problem prototypes can be evoked easily to guide the focus of a problem solving activity. It was decided therefore that the next stage of data collection should elicit slts' formulations about a child/children as the evidence unfolded. However, in order to maintain a rounded picture, the summaries of children given in the debriefing discussions (section 9.4.4) were also included in the analysis.

### **10.2.2. Getting a picture**

On several occasions during the validation of the SGNs using the written case histories, slts remarked on the difficulties of 'getting a picture' of a child from written data. Since communication has many subtle nonverbal nuances, it is possible that some of these go unrecorded in case history data, but are nonetheless attended to during a session. They may be part of a slts' tacit knowledge and may be inaccessible in the general day-to-day

sessions for reporting, but it was felt that the next stage should at least provide the visual medium as an additional level of potential data.

### **10.2.3. Real life or videotapes**

Having decided that being able to watch the child was an important criteria, a means by which to achieve this was needed, the choice being to use real time assessment situations or videotapes. It was felt that attempting a 'talking aloud' protocol during a real time assessment would be too disruptive to the process itself: firstly, preschool children are less tolerant of interruptions and also because the focus of assessment, communication, is highly context sensitive.

### **10.2.4. Slt or researcher video**

In order to achieve concurrent verbal reports, it was decided to use recordings of the researcher conducting an assessment which could then be viewed by the slts. If slts viewed their own videotapes, the element of retrospective comments would not be eliminated. Furthermore, it would have been time consuming and disruptive for the slts involved to have their own assessment sessions videotaped.

### **10.2.5. Individual or group**

Previous data elicitation sessions had involved slts individually. In order to generate a new data set, it was felt that a group discussion would be facilitative. Section 6.3.1 set out the reasons for using several experts rather than a single individual, but so far the experts slts had not been brought together. Grabowski et.al. (1992) set out the advantages of a group workshop. They argue that the interaction between group members (as opposed to researcher and individual slt) is more likely to maintain the emphasis on the slts' viewpoint. As the group discuss together, the interaction is more likely to spark off insights and data that might not have become explicit without that interaction. They found that a focus group setting, with experts brought together for a one-off session, generated significantly more original and creative responses than in an individual:researcher condition, with the group situation producing more detail and a wider range of information. They further suggested that the resolution of conflict occurring spontaneously within the group provided additional insights into the experts' lines of reasoning.

Consensus has been viewed in this project as an expression of expertise, and the establishment of consensus as an important part in the validation of the knowledge elicited. However, it is not good enough simply to establish where consensus occurs and ignore instances of disagreement. Those instances must be examined to establish the source of disagreement and whether or not this challenges the notion of shared expertise within the professional group. So, the group situation can be used not only to generate situations of potential disagreement, the resolution of which within the group does in itself provides interesting material, but also to give clues as to the sources of that disagreement.

### **10.3. PROCEDURE**

With the above points in mind, it was decided to adapt procedures described by Grabowski et.al. (1992) and by Elstein (1978). Elstein et.al. showed videotapes of diagnostic sessions to doctors. The doctors watching the video individually were required to write down problem formulations as they occurred to them and at the end, to complete a response sheet which asked for evaluations of each formulation. After that, the film was replayed and the doctors were asked to reconstruct their thinking.

The study by Grabowski et.al. concerned scenarios from the field of banking sales. The tape was stopped at five points and each time, participants were asked to discuss their reactions to what they had viewed.

#### **10.3.1. Videotaped assessments**

The first step therefore was to secure videotapes of assessment sessions. To this end, the author carried out initial assessments on ten preschool children from the local Healthcare Trust SLT department. The assessment sessions were videotaped. Ethical approval had been sought and received from the Healthcare Trust's Ethical Committee and written consent from parents for the use of the tapes was obtained. These assessments were typical of initial assessments carried out by slts but obviously followed the author's own personal style.

Three tapes were chosen to represent in the author's view, one child with a marked problem, who was highly likely to require SLT support, one child with no problem and a third child with a mild to moderate problem whose needs were less obvious. Tapes were also selected on the basis of auditory and visual clarity.



The videotapes were reviewed by the author in order to identify points at which major changes in activity occurred. These seemed to be the points when key formulations had occurred; that is, the termination and beginnings of activities signal the points at which the slt pursues a different line of inquiry. These points were as follows:

- a) after reading the referral and after the first few moments of the session, when the child and parent were settled into the room;
- b) after the mother's initial story. It is the personal policy of the author to give the parent an open question to invite their story from the outset. Not all slts pursue this format;
- c) during case history taking, the questions moved from open to more closed and probing; an open question usually signalled a new line of inquiry, so just prior to an open question seemed to indicate another potential formulation point.
- d) at the end of the case history, before the session moved to a more direct assessment of the child;
- e) at points during the assessment where a new activity was undertaken;
- f) at the end of the assessment, before the slt started the summing up for the parent.

These points were used as the points at which to stop the videos for discussion. (see below)

### **10.3.2. Expert sample**

Slts who had taken part in previous exercises were invited to attend a group workshop. Eight of the eleven invited were able to attend. Details were given in section 6.3.3. In the event, although a national sample had been aimed at, slts attending came from Birmingham and further south.

### **10.3.3. Anchoring opinions**

In order to avoid what Meyer & Booker (1991) call a "group think" (p.40) where the opinions of a group gradually merge and are affected by strong characters in the group, slts were asked to write down their views at each stopping point in order to anchor their views. The following headings were given for each stop:

Immediate reactions: slts were encouraged to write down what immediately occurred to them as the video stopped.

Reasons: secondly they were asked to give evidence from the video for that reaction

Next step: thirdly, they were asked to indicate what they would do next if they were conducting the session with the child.

#### **10.3.4. Group discussions**

Finally, slts were asked to discuss in the group what they had written down, The discussion was usually started with an open question such as "what's your reaction at the moment?"

The first videotape was used as an example with the full group of eight slts. The second video was discussed in two smaller groups of four, allowing more participation of each member of the group and more detailed viewing of the video. These discussions were run as parallel sessions with a card-sorting activity which is described in the next chapter. The third and final tape was viewed and discussed by the whole group together.

The discussions were audiotaped and transcribed. Slts written responses were collected after each video.

#### **10.4. RESULTS**

The day's programme went successfully and slts found the discussions interesting and participated thoughtfully despite the long journeys that some had made.

Each video-discussion session lasted approximately one and a half hours.

The transcripts and written responses were examined in three ways: Firstly, they were scanned for new content categories: none were apparent. Secondly, the types of responses occurring in each session (reactions, reasons and next steps) were examined. Slts did not differentiate clearly between reactions and reasons and these two sections were therefore eventually combined, The information given in 'next steps' usually involved quite broad suggestions for further assessment. Thirdly, the sections were examined consecutively for each slt, ie in the order that slts had provided the responses or discussed issues, to identify any changes that occurred during the progress of the assessment. Finally, the results were compared with the slts' summaries from the debriefing discussions in order to obtain a complete picture. (A transcript example is included in Appendix L) The results will be presented under the following headings:

Confirmatory evidence - focusing on data which confirm previous results

Differences between slts - focusing on those elements where disagreement between slts was apparent

Problem formulations - focusing on the way that slts expressed their views of the children which guided their assessments.

### 10.4.1. Confirmatory evidence

In terms of the content areas investigated by slts, no major new ones were apparent during the discussions that had not been elicited previously, although more examples and detail for existing categories was forthcoming. Transcripts and written responses were scanned to check that each finding remarked upon by slts, could be represented within the SGNs or had been noted in the evaluation as an area needing development. For example figure 10.1 shows all the written responses of one slt for one child and the corresponding SGN terminal/paradigm.

|  |                                     |
|--|-------------------------------------|
| Child able to occupy self  | Attention WNL                       |
| Good attention considering hearing history   | Attention WNL                       |
| Mother not overanxious - mildly concerned  | Significant medical history         |
| ?concerned with perhaps the wrong aspect - clarity rather than language structure. May be significant in treatment       | Parent mildly concerned             |
| Single words + one learned unit - delayed  | * Evaluation                        |
| No information yet re comprehension  | Delayed expressive language quality |
| Some interaction seen with mum and some vocalisation   | * Evaluation                        |
| Is mum's voice quiet? significant?   | * Evaluation                        |
| Older sister is a chatterbox   | Family need advice                  |
| Special care for 2 days - might be interesting   | Significant medical history         |
| No family history of problems - good sign  | No significant family history       |
| Good play  | Play ?age appropriate               |
| Good co-operation but didn't always do as suggested eg 'stir, blow on it'  | * Evaluation                        |
| Some vocalisation - couldn't hear the words but intonation patterns sounded normal                                       | * Evaluation                        |
| How much is going on at home that is appropriate to his level eg books for the older children                            | Family need advice                  |
| Delayed, all round delay   | * Evaluation                        |
| Benefit from some help in the form of advice to mum  | Family need advice                  |
| Has more words that Mother says  | * Evaluation                        |
| Uses the ones he uses with normal intonation and use, eg, all gone   | * Evaluation                        |
| Vocabulary limited, confusing bear, monkey   | * Evaluation                        |
| Delay is looking significant though everything about the child is otherwise normal, ie language delay of 12 months or so | Moderate communication delay        |
|  | * Evaluation                        |

**Figure 10.1 Written response and SGN category**

As can be seen from this analysis, some responses map onto the SGN easily. For example, 'no family history of problems - good sign' is an easy instantiation of the nonpriority past terminal 'no significant family history'. Other responses seem to provide new instantiations of a category. For example, 'child able to occupy self' is to do with a

child's attention, concentration perhaps socialisation and play, all of which are covered in the nonpriority network. However, it is an instantiation that might lead to some reconsideration of the nonpriority paradigm as it cuts across these terminals. Other responses had been noted within the SGN evaluation. For example, the need for another category to reflect that the *focus* of parental concern is not always appropriate was noted in the evaluation and appears again here: "concerned with perhaps the wrong aspect, clarity rather than language structure". The more detailed comments for the communication category also confirmed the SGN evaluation.

Other instantiations of existing categories were found at a higher level of delicacy. For example, the co-occurrence of child characteristics and context is seen clearly in the written responses of one slt where one element from each category is included at each response level. (figure 10.2)

|   |
|---|
| Mum worried about speech sounds<br>Child has obvious language delay                                   |
| ?Mother's reaction to him<br>Still little interaction with Mother<br>Attention, play seem appropriate |
| Has ability to respond given appropriate input<br>Mum not able to incorporate ideas                   |

**Figure 10.2 Instantiation of co-occurrence of child characteristics and context**

Finally, the difficulty of interpreting case history information was mentioned again during discussions. One slt commented on one child's case history:

"there seem to be a whole lot of factors which might be significant or have no significance at all, the convulsions, the jaundice at birth, the feeding problems in the first six weeks"

There was therefore a confirmation of existing categories through further instantiation and a confirmation of how slts view the supporting case history information, as well as a confirmation of the need for further detail in the communication category.

#### 10.4.2. Differences between slts

As anticipated, when setting up the groups, there were occasions of disagreement. These discussions were examined to try to identify sources of disagreement. Three sources were identified: assessment procedures, locus of attention, management plans.

### **Assessment procedures:**

Firstly slts were not always in agreement about which assessment procedures were appropriate. So for example, although they agreed about the area needing assessment, (eg comprehension), some slts preferred a more formal approach, whilst others preferred to use naturally occurring situations.

Researcher: "So your next step would be...?"

SlT 1: " to get a bit more structure, remove some of the stuff and really see if he could do some instructions"

SlT 2;" I wouldn't. I'd carry on using the play situation because I think I'd get a more realistic view with it being within a play situation"

Also, slts differed in how long they would pursue the case history taking. One slt became quite impatient with the researcher's approach and commented in her written response

"I'm raring to get in and assess him - less history until I feel there's a problem I need to ask about"

Within the discussion this was followed up with

"I'm not terribly interested in anything until I've looked at the kid... and if he's alright he can go out the door. I don't' know yet, so I'm not fearfully interested in what she's got to say"

So although slts might agree about the areas they would investigate, their methods for doing this differed.

### **Locus of attention**

At the beginning of the videos, slts seemed to be attending to different features. In the short term this led to disagreements about whether or not a problem existed. For example,

slt 1 "I'm still not very concerned because what the mother was describing was good understanding so at two and a half that's alright, not worried too much"

slt 2 " I think I would disagree. I think if she was only reporting a dozen single words and he's two and a half, I would be concerned

slt 1 " was that not her report of understanding

slt 2 " no that was his expressive"

SlT 1 had focused on the child's comprehension and slt 2 had focused on the child's expression. As a result they ended up disagreeing about what they had heard from the mother and subsequently about whether or not they would be concerned.

Similarly, if the immediate reactions were compared across slts at the same stopping point of the video, it can be seen that they record a range of different features. (see figure 10.3).

For example, three of the eight slts commented on the child's

comprehension although one slt disagreed with the other in that she recorded that no information was available whereas the other five recorded positive comments.

Another example occurs when slts discussed a mother's interaction attempts with her child; in this instance, the two slts both focused on the interaction but had different conclusions about what they had seen. It is not clear whether they were attending to slightly different aspects or whether they were interpreting what they saw in different ways:

slt 1 "I think she's very good with him...tries to play with him and tries to encourage him...responds to him when he vocalises or when he comes to show her something and she tries to extend his play a little bit."

slt 2 "I wasn't quite that confident. I think sometimes she didn't read him very well and she didn't always pick up on his communicative intent so she wasn't reinforcing"

However, as videos and discussions progressed, the written responses became more similar. Figure 10.4 shows responses at the end of the same video. It can be seen that, with the exception of one slt who did not respond (this was the slt who became particularly frustrated with the researcher's approach), although differences were still apparent, there was more parity between slts' comments than at the beginning. So for example, six slts made reference to the child's positive response to the researcher's interaction attempts. Five slts made negative evaluations of the mother's interactions. These two features were the main ones commented upon.

|  |
|--|
| <p>Slt 1<br/> not too alarmed by number of words, in view of hearing history<br/> not sure if mother's counting all he can do<br/> OK re 1 word level comprehension</p>  |
| <p>Slt 2<br/> mouth breathing<br/> single word utterances<br/> using what he's got appropriately<br/> comprehension better than expression<br/> seemed to follow and interact</p>  |
| <p>Slt 3<br/> Open mouth posture<br/> wide-eyed gaze<br/> beginning to play meaningfully - reassuring<br/> single words + 'go away'<br/> Mother still concerned about sounds<br/> 'Understands mostly what you say'<br/> Level of intelligibility less clear<br/> Contradictions in story</p>            |
| <p>Slt 4<br/> Single words + 1 learned unit, therefore making some judgments that he's delayed<br/> no information yet re comprehension<br/> some interaction see with mother and some vocalisation<br/> is mother's voice very quiet?<br/> emphasis on clarity of words is important</p>                |
| <p>Slt 5<br/> Mother's level of expectation is inappropriately high<br/> Mother not really able to answer 'how many words'<br/> Play OK - pouring from kettle<br/> interested in toys and responding nicely<br/> child possible within normal limits<br/> hearing problems predisposing expectations</p> |
| <p>Slt 6<br/> Interacting with mother<br/> Mother still talking about pronunciation<br/> May have more words that reported</p>   |
| <p>Slt 7<br/> Word endings<br/> Phrase 'go away'; only single words<br/> Good understanding<br/> Interaction with mother</p>   |
| <p>Slt 8<br/> Late development of expression<br/> mouth breather so ? hearing<br/> interaction normal - some evidence that comprehension is at least at 1 word level<br/> No unusual features<br/> not too concerned</p>   |

**Figure 10.3 Slt's' reactions after the second stop of the video**

|   |
|---|
| <p>Slt 1<br/>no response</p>  |
| <p>Slt 2<br/>Not making effort to copy - much more intrigued by dynamic voice<br/>Copied later<br/>unable to recognize all animals or reproduce without prompt</p>  |
| <p>SLT 3<br/>Mother doesn't always read him well<br/>interacts well with less familiar people<br/>enjoys interaction - beginnings of turntaking<br/>laughing/sociable<br/>a little immature</p>   |
| <p>Slt 4<br/>Has more words than mum says<br/>uses the ones he uses with normal intonation<br/>vocabulary limited - confusing bear, monkey<br/>delay is looking significant through everything about the child is otherwise normal, ie, language delay of 12 months or so</p>             |
| <p>Slt 5<br/>Not very long concentration but again in line with other development<br/>Some word joining - capable of more when SR interacted<br/>Mother not extending - only statements<br/>much more lively and productive response to SR's intonation</p>                               |
| <p>Slt 6<br/>Responded to slt's more simple language and enjoyed the interaction with repetitive language<br/>becomes distracted possibly due to all the toys around<br/>did not respond so well to mum - she tended to use flat intonation and lots of language and answered for him</p> |
| <p>Slt 7<br/>Child responsive to SR<br/>Mother didn't pick up on techniques used</p>  |
| <p>Slt 8<br/>Child can become more responsive if encouraged by language play<br/>Hopeful that change can occur</p>  |

**Figure 10.4 Slts' reactions after the last stop of the video**

### Management plan

Such disagreements as described above were usually resolved comfortably by the end of the videos and slts ended discussions in agreement regarding whether or not a child had a problem and about the severity or degree of problem. However, there was evidence that even when slts agreed on the child's problems, their management plans would be dissimilar. For example, in one of the smaller group discussions, the four slts agreed that the child had a borderline difficulty. All four slts recommended slightly varying management plans. (figure 10.5) The general approach has similarities but the detail of how they might implement that approach varied.

- |  |
|--|
| <ul style="list-style-type: none"> <li>a) see soon within a short period, for a few time, before three months - that is too long without support</li> <li>b) see again in three months, give mother a target to watch for but not necessarily any concrete advice</li> <li>c) concrete advice and see again in three months</li> <li>d) reflect back the positive features that had occurred in the session and see again in two months to monitor progress</li> </ul> |
|--|

**Figure 10.5 management plans offered by four slts for one child**



So there were a number of differences expressed within the discussions on a number of occasions, but these did not necessarily reflect differences in the slts' final view of the children.

### **10.4.3. Problem formulations**

The main aim of this workshop was to investigate the concepts used by slts to guide their initial assessment of preschool children.

This part of the analysis therefore examined the statements made by slts in their written responses and during the discussion for clues as to the sort of categories which guided their investigations. As discussed above, increased similarity seems to emerge between slts towards the end of the videos. However, the type of statements made by slts does not seem to differ significantly across the time of the video and a similar range of statements is observable throughout the process. Five categories emerged from this analysis:

- descriptions and baseline behaviours
- historical features
- evaluations of those behaviours and features
- significance of the findings
- management targets

These will each be presented in turn.

#### **Descriptions and baseline behaviours**

Slts seek to establish "what the child can do" said one slt. They are trying to "establish a baseline of abilities" said another. They are also trying to establish baselines of behaviours for significant adults in the child's communicative environment, or context as it has been referred to previously. So in their reactions to the video, they make statements describing elements of the child's behaviour or the parent's behaviour or attitudes. (Figure 10.6)

throwing toys  
blew in imitation  
single word utterances  
responded at a two word level  
pouring from the kettle  
comprehends single word vocabulary  
he's at a playgroup  
he spends all day with her own mum out of the area  
mother talked using long sentences  
mum seemed to get the idea of commenting and naming  
Mother worried  
mum is asking questions

**Figure 10.6 Descriptions and baseline behaviours**

### **Historical features**

As indicated in the SGNs chapter, slts probe a child's case history for features which are associated in the literature or in their experience with communication disorders. Slts have also indicated that they are not always sure of the significance of these histories, but they do nonetheless attend to such features. Figure 10.7 lists examples of features which were picked out of the videotapes by slts in their written response or discussions.

convulsions  
jaundice at birth  
high temperatures  
hearing loss  
didn't babble  
feeding problems in the first six weeks  
ENT problems  
difficult birth history  
no family history

**Figure 10.7 Historical features identified**

### **Evaluations**

As slts described behaviours, they evaluated them in a number of ways. At a preliminary level they sometimes indicated through the phrasing, whether or not the feature was regarded positively or negatively. For example the 'only a few' of the example in figure 10.8 has negative connotations. Similarly in the discussions, behaviours were described in a way which clearly showed whether or not slts saw it as a positive or negative feature. The implied value of repetitive play (figure 10.8), in particular the lining up of cars, is negative.

has only a few single words  
only just beginning to turntake  
expression is difficult to understand  
mother talked but used long sentences  
mother not able to incorporate ideas  
but (his play) was very much a repetitive thing, it wasn't developing on from there, it was just doing the same thing over and over again, lining up cars, which mum says he does all the time  
I thought the birth history was quite interesting  
No family history of problems - good sign

**Figure 10.8 evaluations of baseline behaviours**

At another level, slts summarised an area with an indication of whether or not this area was within normal limits. This of course only applied to those behaviours and historical features attributed to the child and not those descriptive of the parent or context. In the examples in figure 10.9, words such as 'good' and 'appropriate' seemed to equate with a statement of normality. So 'good symbolic play' meant that the child was showing symbolic play of a level that is at least appropriate to his chronological age. On the other hand, the negative evaluations such as 'poor' or 'limited' suggested a problem.

attention poor  
good symbolic play  
good understanding  
limited vocabulary  
intonation patterns sounded normal  
attention and play seem appropriate  
levels demonstrated are not at a two year level

**Figure 10.9. Evaluations of normality**

Comments such as 'in line with other development' show that slts also compared behaviours within the child. Figure 10.10 gives examples where slts compared different aspects of the child's behaviour with each.

not very long concentration but in line with other development  
comprehension is better than expression

**Figure 10.10 Comparisons of behaviours within the child**

Descriptions of parent behaviours and attitudes, as indicated above, sometimes contained a positive or negative evaluation, but were not given a normative value. However, slts did go beyond a simple positive/negative evaluation. Slts' statements suggest that they are evaluating the parents' behaviours in terms of how fitting they are for the child's communication stage or difficulty. This was particularly evident during the discussions. Figure 10.11 shows some extracts from slts' discussions which illustrate this.

Nobody's facilitating him. Whatever the cause of this delay, even if its a specific language problem, he hasn't had the best possible input to facilitate him and develop what he has got.

Mum seemed to be doing the right sorts of things, she'd obviously tried to give him choices at home, she was trying to model things for him and he was still obviously having problems.

I felt mum didn't intervene particularly to introduce more meaning to his games, I mean she still let him line up the cars and even when you'd demonstrated she didn't actually pick up on that so I feel she needs some guidance.. and perhaps being shown things to do with him. I didn't feel I could give her something and then say off you go for six months. I felt she needed something more with him being such a low level.

I wonder how much she's been attempting to develop his language, its all been a focus on pronunciation until now.. I really wonder how much she's been trying to promote the words. he came out with a couple of phrases during the session ..so he is communicating but how much has she dismissed that as unrecognisable words.

if parents concern is misguided, so she's actually focusing on his speech sounds, this child is going to come under a lot of pressure to be producing words correctly, he may then miss out on the stimulation he needs for his language to expand and then other things may happen - you've got a child who's under so much pressure what he going to be like at three and a half and you can guarantee he'll be a stammerer

**Figure 10.11 Evaluations of parents' behaviours and attitudes**

So in conclusion, descriptions of child and parent behaviours and comments on historical features often carried within them an evaluative component or were subsequently evaluated in terms of positive or negative indicators. Behaviours or historical features relating to the child were also evaluated as indicators of normality in relation to the normal population or in relation to other aspects of the child's performance. Parents' behaviours and attitudes were also evaluated in terms of whether or not they indicated an appropriate communicative context for the child.

**Significance of the findings**

As clusters of findings were evaluated during the investigation, slts seemed to be "making some judg ments" about the significance /of those findings. These judg ments fell into four groups: diagnoses, level of concern, progress and prognoses.

**Diagnoses:**

Both general diagnoses, such as developmental delay or autism, and specific speech and language diagnoses such as language delay, were considered. At this level though, it was both individual behaviours and the overall presentation of the child or clusters of behaviours which were the trigger for the consideration of these diagnoses. Examples are

shown in figure 10.12. SIts gave examples of comments, made by parents about children, which slts associate with severe problems. The discussion shown in figure 10.13 elicited a number of these 'trigger' comments which in this instance were associated with semantic-pragmatic type disorders.

mouth breather so ? hearing  
late development of expression  
delayed play skills  
dribbles ++ - ENT link  
he hasn't moved that much.. I just wonder about his motor skills.. at the back of my mind there's a possibility of dyspraxia  
I think the history's a little bit worrying, high temperatures, convulsions, jaundice, there may be possibilities of hearing loss or damage, general delay

**Figure 10.12 Diagnostic links**

Slt 1 "(its) not usually a good sign when they say they line up cars, your heart sinks...there's some phrases and sayings that parents use and when they say one of those you think oh dear, there's trouble here. One is 'lining up cars', one is 'watching the adverts on television'.  
Slt 2 "and he has his favourite video which goes on at breakfast"  
Slt 3 "in a world of his own"  
Slt 1 "no sense of danger, no reaction to people or stimuli".

**Figure 10.13 Parent reports linked to severe communication problems**

Often built into the diagnostic descriptions of the speech and language was an indication of the severity of the problem. Examples of diagnostic statements are given in figure 10.14.

we're looking at language delay - receptive and expressive  
a low average child with specific speech and language problems  
the delay is looking significant  
I think he's a fairly normal developmental dysfluency  
this is a severe phonological delay  
I explained to mum that this is a very mild problem

**Figure 10.14 Diagnostic statements**

Concern:

One of the ways that slts drew together their overall reaction to the child was in an expression of their own level of concern about the child (figure 10.15) The statements seem to reflect a personal response to the child's presenting situation. They also sometimes contained a reference to the priority status accorded to the child, for example, how urgent they perceived the child to be.

so she was very worrying, lots of worrying things about her and very few things that weren't worrying  
I'd be very happy with the way this is going  
I'm a little more reassured by that  
Not too alarmed  
slightly more concerned  
moderate concern - I'm not putting him with the list of urgent cases

**Figure 10.15 Statements of concern**

Progress: Some slts also judged incoming information as evidence of changes: either positive progress, the absence of progress or negative changes. Examples are given in figure 10.16.

she has improved a little socially  
father was very concerned about this child's lack of progress..he felt that the child had made no progress since starting to talk  
no recent change at all  
becoming disturbed  
beginning to have temper tantrums

**Figure 10.16 Statements about progress**

Prognoses:

This final category shows slts' view of the child's prognosis. Where these were offered spontaneously by slts, they were always positive. These examples (figure 10.17) have come mainly from the debriefing discussions; prognoses were not a major feature of the written responses or discussions although they did occur. These statements seem to take account of the level of contextual support for the child's difficulty.

I feel more positive about outcome  
the prognosis is probably pretty good, I'm sure he'll get there eventually  
no reason why she shouldn't progress normally  
there's something positive there - there's potential  
I'm still asking myself is he going to catch up on his own without any extra special help or any extra interaction at home

**Figure 10.17 Statements of prognosis**

### **Management targets**

Slts' formulations during their assessments of preschool children also included a running catalogue of potential management targets. This occurred in the written responses, the group discussions and the debriefing discussions. These targets might be areas of the child's performance which either needed further assessment and investigation or specific programmes of intervention. Aspects of the supporting environment such as parenting

skills or placement in nursery were also targeted as components of the management programme. Examples are shown in figure 10.18.

|   |
|---|
| advice to mum<br>listening programme<br>advice to mother on attention<br>I would like her to make a diary of all the things he said and all the things he joined together<br>support nursery recommendation<br>I'd want to know over the next few months what the rate of spontaneous change was<br>parents skills for play and for facilitating language |
|---|

**Figure 10.18 Management targets**

## **10.5. DISCUSSION**

This section will reflect on the results under headings corresponding to the three aims of the chapter - confirmatory evidence, differences between slts and the main aim, problem formulations.

### **10.5.1. Confirmatory evidence**

Following the methodology set out in section 6.1, the design of the project aimed to give weight to the results obtained by building in opportunities to confirm results. So that, results obtained from one source of data could validate (or otherwise) results obtained by another means. Unlike the previous chapter, where the interpretive analysis was evaluated directly, this exercise looked for confirmation of previously identified categories in a completely new set of data. Three new components were introduced for this data elicitation stage: the visual medium of videotapes, the expert focus group and thirdly, contemporaneous reflection on an unfolding assessment. The new elements were aimed at eliciting a different view of the selection process, the problem formulations, which are discussed below. However, the results were also examined for any confirmatory evidence.

Further instantiations were found of terminals and paradigms explicated in the SGNs as well as additional confirmation, if that were needed, that the category of communication needed considerable development.

The elusive nature of case history information was also confirmed. Slts did attend to case history findings such as family history, medical history, but were not always sure about

their significance. As previously suggested, slts varied in how far they would pursue this type of information.

So this exercise confirmed that the range of categories identified was comprehensive although more examples and details have been elicited. Such examples are always likely to be forthcoming, no matter how many data elicitation exercises are carried out since the children are all individuals and likely to present in finely differentiated ways. However, for this group of clients, ie preschool children, it seems that the range of categories likely to contain significant information has been identified. So, whilst further instantiations are likely, major new categories are unlikely to emerge unless new knowledge leads to a different model of the process. Further instantiations may however lead to adjustments of existing categories, enabling better definitions and the delineation of terms which more closely reflect the nature of the categories.

### **10.5.2. Differences between slts**

As with the notion of confirmatory evidence, the idea of searching out consensus between slts was a recurring theme in the design of the project. However, in this analysis, particular emphasis was given to the differences between slts in order to explore the source of disagreement.

In the written responses and discussions, agreement existed between slts about whether or not a child had a problem and how severe that problem was; they also agreed about the kinds of area in which to focus their assessments. This ties in with previous findings. For example, in the previous chapter, agreement was reported between slts in how they ranked the priority status of four case histories. Substantial consensus was established with respect to the categories containing significant information. So agreement in the interactive group session, although not measured statistically, seems to reflect previous findings.

However, variation occurred at three points in the process: with the preferred assessment procedures, the locus of attention and the management plans. So although slts agreed about the child's problems and the areas needing investigation, they varied in terms of how they would get that information, the features they attended to at any one point and how they would interpret the child's needs in a management plan.

Based on the work of Records and Tomblin (1994), one might expect a higher level of disagreement about whether or not the children would be classified as language impaired since the two main children providing the stimulus material were borderline cases. Yet it is not this aspect of the cases which caused disagreement.



The first type of variation concerned the choice of assessment procedures and how are certain types of assessment would be pursued. So, some slts preferred formal assessments; some collected more case history information. These seem, at first glance, to be purely procedural differences: slts were apparently looking to answer the same questions (eg what level of comprehension does this child have) but had preferences in the methods used.

If the preferences had been between two formal methods, then one could perhaps accept that the differences were indeed at the procedural level. However, the preference for a formal assessment as opposed to informal methods might reflect a more fundamental difference about the underlying view of what constitutes acceptable data - the non-contextual formal assessment or the contextualised informal assessment.

Whatever the source, procedural differences result. Given that slts develop their own preferred methods of assessment, it is likely that they are more able to interpret findings in that context. For example, one slt, who wanted to pursue a formal procedure commented apologetically:

"I'm afraid to say what I do. I would actually formally test his comprehension 'cos I feel much happier with doing that".

Another slt joined the discussion in her support:

"but you'd learn a lot from that formal test of comprehension...when you're doing something all the time, the end result isn't always important. It's all the other clues it gives you. I think everyone has a set pattern they go through"

The first slt concurred and concluded:

"I suppose I need my own view of it"

So it seems likely that whilst slts were looking for similar attributes of a case, they were seeking them in a context with which they were familiar. It follows from that, that certain contexts would lead slts to look out for particular attributes and therefore, given a particular context, different slts might be focusing on different aspects of that situation leading to the different locus of attention noted in the results.

Miller (1981) recommends that assessment formats should reflect not only the presenting attributes of the individual child but also the goal of the evaluation within the particular service context. Slts in this project were deliberately drawn from a wide geographical sample in order to take account of potential differences in service goals and provisions. The differences between slts within the project may therefore be a reflection of this wide sampling and the differences between services nationally.

Similarly the variations in management plans may be reflective of the different practices current in these services. Whilst some of these differences may have developed almost incidentally as a response to resource issues, they are likely to be indicative of differing underlying theoretical models which influence service delivery development. The

difference shown between the four slts in figure 10.5 does not seem huge, but they do reflect differing views which can be summed up broadly as interventionist or review models. This difference was evident in the SGN evaluation as the source of difficulty about the priority/nonpriority dichotomy (section 9.9.1). An 'interventionist' slt believes that as much information as possible should be elicited at initial assessments as possible, in order to make a discharge/intervene decision.

"I would either want to say to myself, yes he's significantly delayed, enough that I need to make his progress go on a bit faster or I'd say no, I'm fairly convinced in my mind that he's going to be alright and I'll ask her to get back to me if she's worried.

I think I'd try and get more information before I send her away because if you send her away then you've got to get her back again and if at the end of the session you're still not very concerned about him - its a waste of time"

If the decision is to intervene, the aim would be to see the child sooner and more frequently.

"..you have to have more than one session to make that (advice) effective and (a break of) three months is a long time if she's got no support...she'll probably forget..so there's no point in giving advice"

A 'review' slt on the other hand bases her final decision on assessments over time and would be less likely to believe a parent's report of progress but would instead want to monitor that for herself; she has a three-way decision choice of discharge/ review/ intervene. If the decision is to review, then the sessions offered can be assessment only sessions and do not necessarily seek to give parent advice.

"I think probably I might give a three month kind of target ..I'm not giving advice. I'm giving information and saying watch for this, this and this. I'm not really treating in any sense. I'm giving her knowledge and expecting that the thing will take it own course."

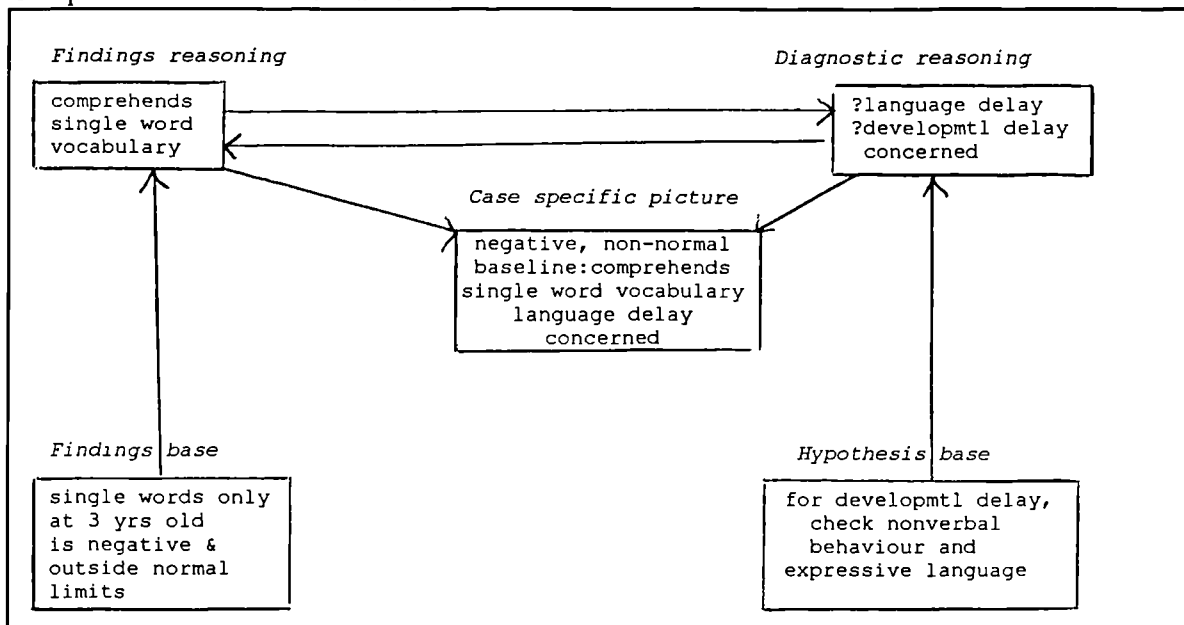
Two slts discuss their plan for the same child:

Slt 1: " I don't think a great deal of intervention...I think mum needed advice and a little bit of reassurance and guidance"

Slt 2: "She's going to need support and modelling on a regular basis and perhaps a few intensive sessions.. I don't think its something you can just give her advice and just go away and hope that she'll...you'll have to check that she is in fact doing what you want her to do."

The conversation reflects the difference in approach which has been presented here in a rather caricatured fashion; there might not necessarily be the extremes of opinion every time. The underlying 'theories-of-action' (Schon, 1988) are likely to be more complex than expressed here. However, the sources of variation that have been touched upon here include attitudes to information provided by parents, attitudes to the validity of clinical data collected in different contexts, beliefs about the range of effective management plans.

once evaluated is then lodged in the case specific picture. Figure 10.19 applies the model to one particular baseline behaviour:



**Figure 10.19 Reasoning associated with one baseline behaviour (adapted from Johnson & Keravnou, 1988)**

During the session, the slt notes that the child "comprehends single word vocabulary". Her knowledge (from the 'findings base') about specific behaviours and child language acquisition allows her to evaluate this finding: for a child aged three years old, this is outside the range of normal variation; this is a negative indicator. As an evaluated finding, this is then lodged in the case specific diagnostic picture - it has become a finding to be remembered and to take account of.

This baseline is also judged in terms of its significance relative to the broader picture that it triggers. So for example, a slt would consider whether or not this particular baseline is sufficiently negative to evoke concern, to suggest a particular diagnosis or give an indication of prognosis. It would then be linked with other behaviours in the same category as they emerge. So, comprehension at a single word level in a three year old might be indicative of a simple language delay and is negative enough to cause concern.

These 'significance' formulations carry with them a set of questions that they then evoke. For example, are nonverbal aspects of behaviour delayed, is the child's expression significantly delayed, is there something to explain the delay in the child's history, can the child's context support this level of delay. Final statements about a child will include some formulation of the significance of the findings but not always all four suggested here. As these formulations are confirmed, they too are stored in the case specific picture as confirmed findings.

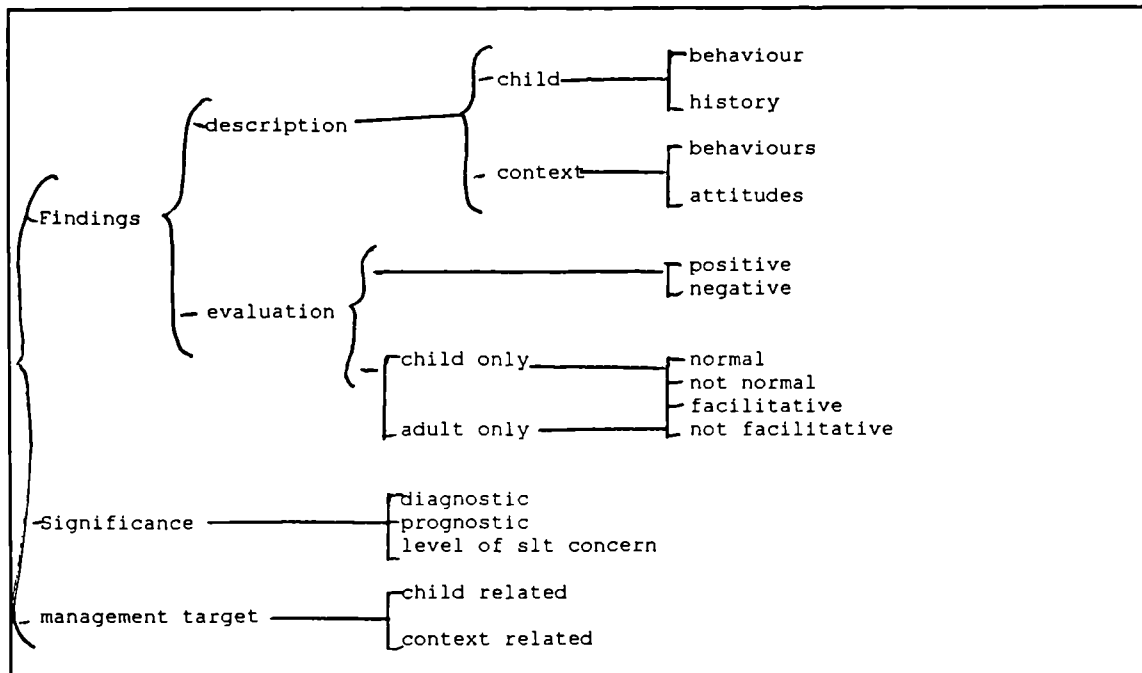
One problem formulation that has not been mentioned so far in this discussion is the 'management target'. As indicated, the data suggest that slts accumulate potential targets for intervention as they progress. It seems that as baselines and descriptions of behaviours and attitudes are evaluated, they are also considered in terms of whether or not they require some kind of intervention.

Because the project had, as its starting point, the notion of prioritisation, particular links between management and case features were not investigated. The focus had always been on the evidence which tips a slt from discharge into intervention or vice versa. So although the emerging model described here displays the link between evaluated findings and management targets, this explains only the *content* aspects of management and does not necessarily shed light on links through to the focus, purpose and timing categories of management that were identified in section 8.5.5.; the discrepancies between slts in management plans seem to occur within these latter parameters.

To conclude, it is worth summarising the problem formulations of slts with preschool children into the shape of an SGN. This is presented in figure 10.20. So, figure 10.20 shows that descriptions of both the child and significant adult or context are collected. These might include historical information about the child and information about affective states of the parent. The descriptions are evaluated as having positive or negative connotations. Further, the child's behaviours and history are evaluated as indicative of normal development. The parents behaviours and attitude are evaluated in terms of how appropriate they are to the child's communicative needs.

Evaluated findings are then judged in terms of their significance in one or more of three categories: diagnostic, prognostic, progress and level of concern to the slt.

Finally, some evaluated findings give rise to the development of management targets, for both the child and significant adult.



**Figure 10.20 Summary of slts' problem formulations**

## 10.6. CONCLUSIONS

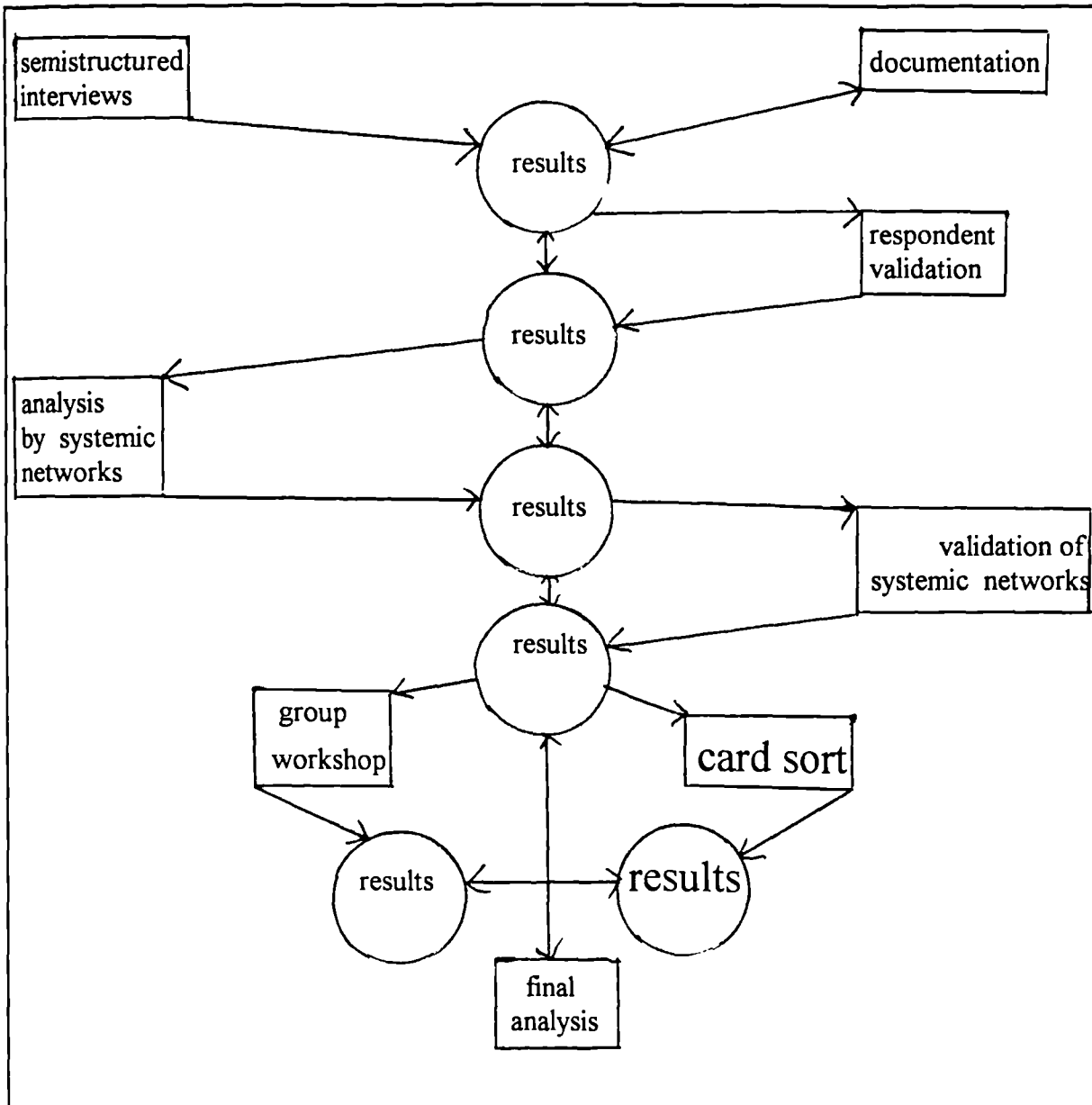
The interactive group workshop brought together experts slts from what turned out to be a relatively southern England sample. Discussions of videotapes, stopped at key formulation points, were transcribed and used as the main source of data. Slts' written formulations were also collected. The results were used to confirm categories previously identified and to explore sources of disagreement between slts. The main focus however, was on slts' problem formulations as the investigative process progressed. These confirm the task as an iterative one whereby baseline data is collected and evaluated until a point is reached where the significance of the case specific data can be judged. The formulations identified were displayed using Johnson & Keravnou's model of reasoning knowledge (1988) and finally summarised via an SGN.

This chapter felt like a significant milestone in the progress towards making the selection process explicit because it focused on process and on the strategic underpinnings which guide slts through the investigation. The summary SGN presents an overview which slts should recognize as descriptive of the process they follow, although different elements will receive different emphases by individuals. The variation noted between slts pointed to possible differences between slts in their underlying philosophies which show

themselves at a procedural level. Further investigation of agreement and variation was pursued on the same occasion via a card sort activity which is described next.

# CHAPTER ELEVEN

## CARD SORT OF COMMUNICATION STATEMENTS



## **11.0. INTRODUCTION**

On the same day as the interactive group discussions, the expert speech & language therapists (slts) were asked to complete a card sorting exercise. This chapter sets out the aims and background methodology for the exercise which used the context of communication behaviours to further investigate the nature of consensus between slts. Some qualitative comments are made about the items used for sorting and the insights that this gives into models underlying slts view of communication is briefly considered, However, the main data collected were quantitative. The results presented here include some straightforward statistical analyses which investigate consensus and sources of variation.

### **11.1. AIMS**

The main aim of the card sorting exercise was to investigate slts' consensus regarding the categorisation of descriptions of children's communication.

More specifically, the exercise asked the following questions:

- i) do slts agree as to the categorisation of these descriptions;
- ii) does the child's age influence consensus;
- iii) are other sources of variation between slts evident.

## **11.2. BACKGROUND**

### **11.2.1. Primacy of communication**

The key focus of assessment by slts is the child's communication. Present and historical features are taken into account alongside any signs of change. Evidence for the primacy of communication comes in various guises: the child's present communication was always taken into account and there was always consensus about whether or not this category contained significant features; the child's language development history was more often reported as important than other historical features and changes in communication were noted more often than changes in other areas.

It was therefore felt to be potentially a useful area to use as a means of examining consensus between slts. If slts use this area frequently as part of their assessment then one would expect high levels of consensus.



A review of the data at this point showed that it contained a considerable number of statements about children's present communication skills, to the point where it was considered unnecessary to elicit new data at that level. What was required rather was a process which would investigate consensus.

### **11.2.2. Card sorting**

It was decided that a card sorting situation would elicit from slts their views on the influence of these statements. Card sorting usually falls within a qualitative framework whereby a single expert is presented with a set of cards, each bearing the name of a single concept. (Burton et.al., 1988; Neale, 1988) The expert is asked to sort the cards into groups according to any classification they deem appropriate and to label each group. Sometimes they are asked to verbalise their reasoning during the sorting process (eg, Gammack, 1987).

Card sorting was found to compare well with other techniques in terms of technical ease and time taken, as well as its effectiveness in eliciting declarative knowledge. (Shadbolt & Burton, 1990) Although some experts balk at the unfamiliarity and unnaturalness of the task, it is this very unfamiliarity which is considered useful in stimulating the reflection and resultant explication of experts' knowledge. (Burton et.al., 1988; Hoffman, 1990)

However, since the aim of this card sort was to elicit a very particular feature of slts' knowledge, that is their shared knowledge about particular aspects of communication, the card sorting procedure was adapted and structured very tightly. This structuring turned the activity into one of quantitative categorisation. So instead of providing statements and following slts' spontaneous categorisation, the task required slts to allocate the statements to specified categories (concerned and not concerned). As with other stages of the project, 75% agreement between slts was taken as an indication of consensus.

This change also reflected the plan to conduct the card sorting as part of the group workshop day; it was not practical therefore to monitor each slts' individual and spontaneous categorisation of the cards.

### 11.3. PROCEDURE

#### 11.3.1. Expert sample:

The card sorting exercise involved the same eight slts as for the focus group.

#### 11.3.2. Items for sorting:

A considerable number of statements which referred to children's presenting communication skills had been elicited so far, from the original interviews and respondent validation (RV) exercises and from the debriefing interviews of the SGN evaluation. The sentences and phrases used on the cards were taken straight from the transcripts with minimum change.

For ease of analysis they were sorted into 5 broad categories reflecting traditional divisions within communication and any duplications were removed. Where a slt had listed several features within one sentence, these were separated onto individual cards. General statements which described aspects of communication as satisfactory (eg, comprehension is OK; expression was normal), were also eliminated. Since the sorting task was to be related to concern, it was felt that such statements pre-empted the sorting task and they were therefore removed. Table 11.1 shows the categories and the number of items in each one. A final total of 169 items were typed individually onto cards. Table 11.2 gives examples from each category. The full list appears in appendix M.

| Categories   | No. of items |
|--|--------------|
| Expression   | 45           |
| Comprehension  | 20           |
| Interaction  | 41           |
| Intelligibility                                      | 17           |
| Speech (including phonology and articulation skills) | 46           |
| Total  | 169          |

**Table 11.1 Categories and number of items used in the card sort**

|                  |   |
|------------------|---|
| Expression       | has 3-5 single words<br>lots of jargon with the occasional word<br>using a mixture of two languages<br>child comes out with things out of the blue        |
| Comprehension    | not understanding words<br>enjoys following instructions<br>finds it difficult to locate sound<br>comprehension is at a two word level                    |
| Interaction      | in his own little world<br>no eye contact when turntaking<br>raises arms to be lifted up<br>didn't interact with slt                                      |
| Intelligibility  | Mother can't understand<br>Mother interprets his speech to others<br>intelligibility deteriorates in connected speech<br>people around him understand him |
| Phonology/speech | no labial consonants<br>open syllables<br>poor imitation of gross sounds<br>very quiet voice  |

**Table 11.2 Examples of statements in each category**

### 11.3.3. Sorting the cards

Card sorting sessions involving four slts at a time were run as parallel sessions to the group discussions. Slts were given the cards in a jumbled order and told that the statements were made about a two year old child. They were then asked to sort them into two piles according to whether or not the statement would make them concerned or not. Any items they were unsure about for any reason were left in a third pile.

When all slts had sorted as many as they could, items in the third 'don't know' pile were discussed together in the group. Finally, slts were asked to have a final check of the 'don't know' pile and allocate them to a category if they could.

The three piles 'concerned, not concerned, don't know' were sealed into envelopes coded to record the age of child, category allocated and slt sorting.

The process was repeated, with breaks in between with respect to children aged 2;06 and 3;0 years.

## 11.4. RESULTS

The number of slts allocating a card to a particular category was analysed for the three age groups and for the five broad categories of items. Consensus was taken to occur when six of the eight slts (ie, 75%) agreed about the categorisation of an item. Errors made in the distribution stage resulted in a slightly uneven number of cards being allocated to each slit. This shows up particularly in discrepancies in tabel 11.4. However, the overall error rate was less than 1% (0.69; range 1.6 - 0.4) and the results were still considered valid. At only one item at one age level did this interfere with judgement of consensus. (see appendix M) In all other instances of missing items, consensus was either achieved anyway or the additional item could not have led to consensus.

### 11.4.1. Age and category

Table 11.3 shows the percentage of items reaching substantial consensus in each category at the three ages. As can be seen, consensus was reached on a total of 68% of the items (range 53%-88%) and there was no difference in the level of consensus reached for the different age groups. Chisquare was used to investigate the differences in percentage consensus between the different categories.

The null hypothesis which postulates only chance differences between percentage consensus for expression, comprehension, interaction, intelligibility and speech was not rejected ( $\chi^2 = 3.191$ ; degrees of freedom = 4; significant at 0.05) and the differences seen are therefore not significant. So, consensus between slts does not appear to vary with the broad area of communication being considered.

| Category | exp | comp | interact | intell | speech | Total |
|----------|-----|------|----------|--------|--------|-------|
| Age      |     |      |          |        |        |       |
| 2;0yrs   | 78  | 50   | 66       | 88     | 57     | 67    |
| 2;06yrs  | 80  | 60   | 61       | 76     | 65     | 69    |
| 3;0yrs   | 71  | 60   | 76       | 53     | 72     | 69    |
| Total    | 76  | 57   | 67       | 72     | 64     | 68    |

**Table 11.3 Percentage consensus**

### 11.4.2. Slt differences

Table 11.4 shows the number of items allocated to the three categories - "concerned, not concerned or don't know" for each slt.

| Therapist | Not Concerned | Concerned | Problem |
|-----------|---------------|-----------|---------|
| slt1      | 201           | 243       | 60      |
| slt2      | 229           | 220       | 57      |
| slt3      | 197           | 301       | 7       |
| slt4      | 152           | 275       | 72      |
| slt5      | 195           | 273       | 39      |
| slt6      | 214           | 284       | 7       |
| slt7      | 225           | 257       | 20      |
| slt8      | 219           | 205       | 79      |

**Table 11.4 Categorisation of items by therapist**

Chisquare was used to investigate the differences between slts in the number of statements they allocated to each category. Firstly, the null hypothesis, postulating chance differences between slts in their allocation of statements to "not concerned" was rejected, ( $\chi^2 = 20.78$ ; degrees of freedom = 7; not significant at 0.05.) suggesting that there were significant differences between therapists in the number of items they coded as 'not concerned'.

The same hypothesis was again investigated but this time, extracting the scores from slt 4, since hers was the lowest score. This time, the null hypothesis was not rejected ( $\chi^2 = 5.62$ ; degrees of freedom = 6; significant at 0.05) suggesting that, between the other seven slts, the differences in number of items coded as 'not concerned' was not significant. This result did not occur if the scores from any other slt were extracted suggesting that this slt had a lower rate of coding 'not concerned' than the others. This slt also took longer to sort the cards and was the last to finish on each occasion.

A similar process was used to investigate slts allocation to the 'concerned' category. As before, the null hypothesis was rejected ( $\chi^2 = 29.15$ ; degrees of freedom = 7; not significant at 0.05) suggesting that the differences seen were greater than would occur through chance alone. Unlike the 'not concerned' category, chisquare investigations failed to identify one slt as the possible source of difference. Instead slts seemed to fall into a 'low concern' and a 'high concern' group where differences seen within each subgroup were explained by chance.

So that the number of items allocated by slts 1, 2, 7 and 8 to the "concerned" category were the lowest but do not differ significantly from each other ( $\chi^2 = 6.97$ ; degrees of freedom = 3; significant at 0.05).

Similarly the number of items allocated by slts 3, 4, 5 and 6 were the highest, but do not differ significantly from each other ( $\chi^2 = 1.72$ ; degrees of freedom = 3; significant at 0.05). However, significant differences were found between slts in the number of items left in the "don't know" pile. Slts who allocated fewer items to the "concerned" category left significantly more items in the "don't know" category. (Using the Mann-Whitney-U test,  $U = 4$ , significant at 0.05 level) Overall, therefore it would seem that some of the differences between slts in the number allocated to the concerned category could be explained by the number consigned to the "don't know" pile. One slt in particular, seems to be an exception to this rule. Slt 4 allocates a high number of cards to the "concerned" category and yet had one of the highest scores on the "don't know" category. This was the slt who had the significantly lower rate of allocation to "not concerned".

### 11.4.3. Developmental progression

Table 5 shows the total number of items coded "not concerned, concerned and don't know" for the three age groups

| Age     | Not Concerned | Concerned | Don't know |
|---------|---------------|-----------|------------|
| 2:0yrs  | 662           | 545       | 146        |
| 2:06yrs | 561           | 658       | 106        |
| 3:0yrs  | 409           | 854       | 86         |

**Table 11.5 Number of items coded by category and age**

Firstly, chisquare was used to investigate the differences seen in the number of items left in the "don't know" pile for the three age groups. The null hypothesis, which would argue that these differences were occasioned by chance, was rejected ( $\chi^2 = 16.53$ ; degrees of freedom = 2; not significant at 0.05). The differences show a gradual reduction across the three age groups. Since the 'don't know' items were discussed between each trial this suggests that slts were gradually clarifying their understanding of items as the trials progressed.

The correlation coefficient was calculated between items allocated to the two main categories "not concerned and concerned". A high negative correlation was found between age and category, where  $r = - 0.99$ , suggesting that the proportion of not concern vs concern was negatively related to age, with the number of items causing concern, rising with the increase in age.

This pattern of concern rising with age was also reflected in the way that consensus emerged between slts. So for example 'limited range of two word utterances' achieved consensus no-concern at age 2:0 years, at age 2:5 years, therapists were evenly split and at age 3:0 years, there was consensus that this feature would be of concern. ( Table 6) This

there was consensus that this feature would be of concern. (Table 11.6) This pattern of consensus was evident on several occasions as can be seen in the tables in appendix M.

|         | Not concerned | Concerned |
|---------|---------------|-----------|
| 2:0yrs  | 7             | 1         |
| 2:06yrs | 4             | 4         |
| 3:0yrs  | 1             | 7         |

**Table 11.6 Coding of 'limited range of two-word utterances'**

Appendix M lists the items and shows the ages at which consensus occurred.

## 11.5. DISCUSSION

The main methodological emphasis in the analysis of results has been a quantitative one, using simple statistical analyses to examine the data. However before launching into a discussion of those results, it is interesting first of all to pause and reflect on the nature of the cards being sorted.

### 11.5.1. Theoretical models

As has been said, the statements used were taken directly from interview data. They were not therefore neat concepts but verbatim words, phrases and sentences used by slts in discussions with the researcher. They vary from general descriptions of a child's behaviour to diagnostic summaries. Interestingly, they include a wide range of descriptives from chatty comments such as " he's not apparently bothered that no-one understands him" through to technical terminology in the form of linguistic descriptions such as "ingressive fricative" or speech pathology diagnoses such as "aphonic".

As a result of this variation, the grouping of items was not particularly straightforward and the arrangement used here does not follow any particular theoretical direction but attempts to reflect the range of statements in as straightforward a way as possible. The variability meant that the statements did not fit easily into any of the models typically associated with communication disability. So for example, a statement such as "expressive language delay of 18-22 months" fits within a medical model of 'diagnosis' but does not sit easily within a linguistic model. So for example, the model by Bloom & Lahey (1978) in common use in SLT, shows three interacting components of language: content, form and use. The example cuts across the three components. On the other hand, descriptions such as "uses nasals for labials"

or "omits determiners and pronouns" is at a level of linguistic detail not referred to in more medical models (cf, Bishop & Rosenbloom, 1987).

However, the analysis suggested that a strong developmental model is held by slts in that, as the age of child increased, there was a corresponding increase in the number of items giving rise to concern. So slts operate developmental norms which they apply to incoming information about a child. This confirms the findings of the previous chapter which suggested that one of the main problem formulations involved the evaluation of a finding in terms of its relation to developmental norms. Since child development and language acquisition are a major feature of SLT training and are found within many assessments available to slts, this is not a surprising result. What is of interest is the inclusion of less traditional behaviours within this format. For example, it is not unexpected to find well-accepted language milestones such as "using two word utterances". This in a child of two years old causes no concern. Rather more interesting are items such as "therapist could not understand the child" or "not apparently bothered by the fact that no-one understands him"; slts agreed that these would not be of concern in a two year old or a two and a half year old but would cause concern in a three year old. Such items are unlikely to appear in written texts under developmental norms and yet achieve consensus between slts from different parts of the country.

### **11.5.2. Consensus**

On a total of 507 card items, slts achieved substantial consensus about the categorisation of 68%. The age of child and area of communication being considered did not affect consensus. The results suggested two main sources of variation.

Firstly, variation was attributable to one slt who apparently had a lower threshold of concern than her colleagues. She allocated fewer items to the "not concerned" category. This slt also took longer to sort the cards, was the last to finish on each occasion and also consigned a high number of cards to the "don't know pile".

The other main source of variation was the number of cards consigned to the "don't know" pile. There were significant differences between slts in the number of cards slts left in the "don't know" category, although the number declined with each sorting attempt. However, although slts apparently clarified their own views of the meaning of the cards during the three sorting trials, consensus did not improve as a result.



## 11.6. CONCLUSIONS

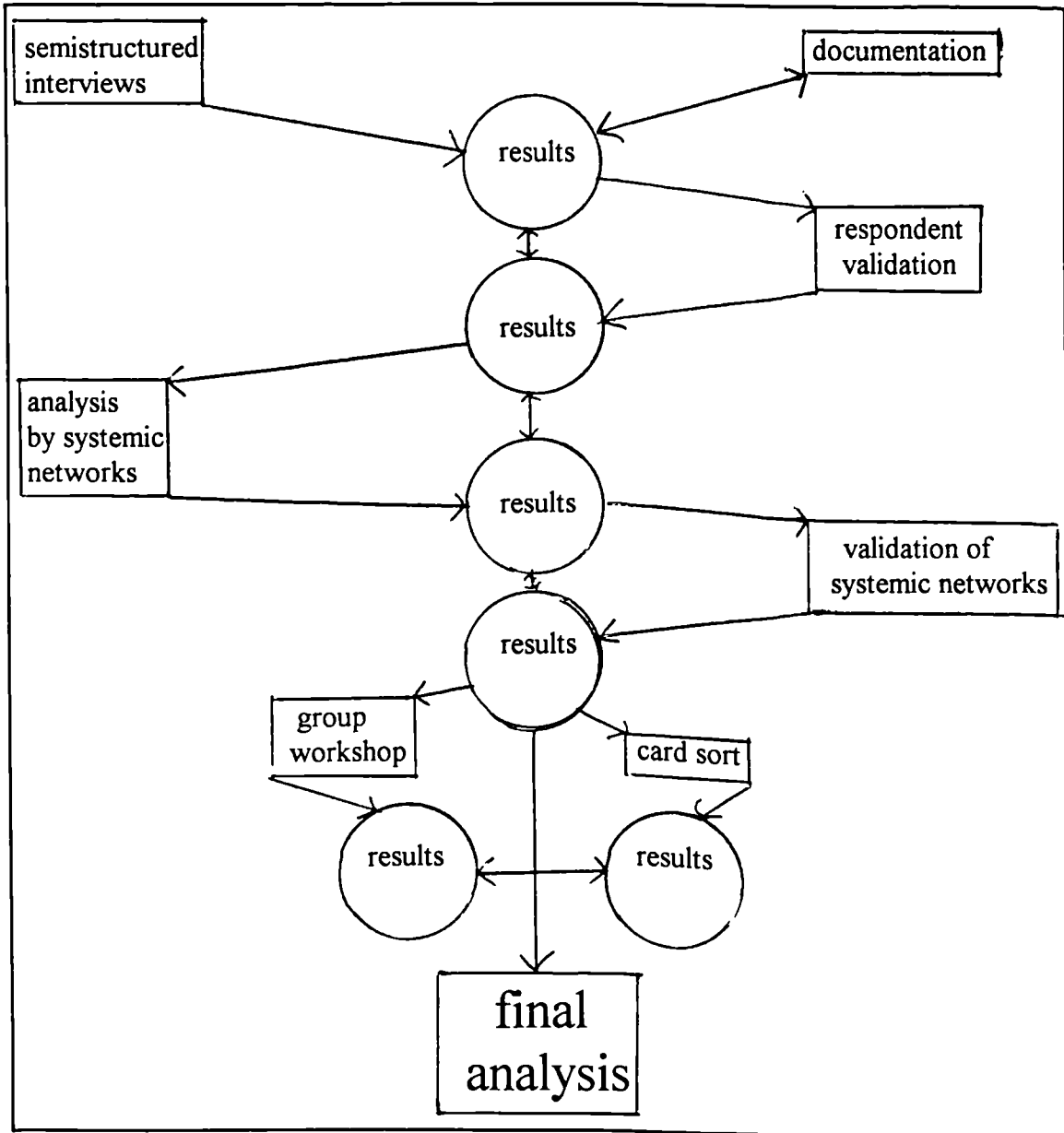
This small exercise set out to explore consensus using elicited statements about communication. It was suggested that since this is the key area in slts' assessments, consensus would be high and indeed well over half of the statements drawn from all the interview data (that is, statements made in open discussions) attracted substantial level of consensus. This level of consensus was stable with the age of child and aspects of communication being considered. A strong developmental trend was clear in the meaning that slts attributed to the statements although the thresholds for concern among slts was variable.

The results from this exercise were combined with other investigations of agreement from the various points throughout the study and discussed in more depth in the final chapter.

# CHAPTER TWELVE

## THE CHILD, THE PROCESS AND THE EXPERTISE:

### THE FINAL ANALYSIS



## **12.0. INTRODUCTION**

The story of this project has unfolded a series of data collection, analysis and respondent validation stages in a qualitative multimethod project. One of the dangers of qualitative research is that of losing control of the study: such detailed, rich and extensive verbal data, tempt the researcher into 'just one more' analysis. In using a multimethod design there is also a risk of ending up with small unconnected pieces of research and no feeling for the strength of the whole. It is therefore the challenge and task of this final stage to draw the project to a close, for the present purposes at any rate, and to bring together all the pieces of the jigsaw to present a coherent picture and to discuss the significance of that picture.

Specific questions were generated at the outset to guide the study. These included the identification of factors considered by speech & language therapists (slts), their definition and categorisation, the hypotheses considered by slts along the way and the levels of consensus between slts about the various features of the decision. The nonclinical context of the decision also featured in the investigation. These focusing questions were all subsumed in the overall aim of the project which was to build a theoretical description of the process by which slts select preschool children for intervention with specific emphasis on those who are given priority in some way. The results have therefore been gathered together to summarise a model of that process under three headings: the child, the process and the expertise. These three sections reflect three theoretical threads which were explored in the literature chapters and which have underpinned the development of the study questions. Before the results are discussed, this chapter will undertake a brief review of the methodology used in the study.

## **12.1. METHODOLOGY**

The main discussion of methodology took place in the earlier chapters, predominantly in chapter six; also, in each data collection chapter, the particular knowledge elicitation (ke) techniques, the rationale for their selection and comments on their usefulness were discussed. It remains only to take a summary look back to evaluate the overall methodological approach of the study. To do this, some criteria are needed against which to judge the study and being a mainly qualitative study, the criteria should be fitting to that methodological approach. Using canons of good quantitative research are

## **12.0. INTRODUCTION**

The story of this project has unfolded a series of data collection, analysis and respondent validation stages in a qualitative multimethod project. One of the dangers of qualitative research is that of losing control of the study: such detailed, rich and extensive verbal data, tempt the researcher into 'just one more' analysis. In using a multimethod design there is also a risk of ending up with small unconnected pieces of research and no feeling for the strength of the whole. It is therefore the challenge and task of this final stage to draw the project to a close, for the present purposes at any rate, and to bring together all the pieces of the jigsaw to present a coherent picture and to discuss the significance of that picture.

Specific questions were generated at the outset to guide the study. These included the identification of factors considered by speech & Language therapists (slts), their definition and categorisation, the hypotheses considered by slts along the way and the levels of consensus between slts about the various features of the decision. The nonclinical context of the decision also featured in the investigation. These focusing questions were all subsumed in the overall aim of the project which was to build a theoretical description of the process by which slts select preschool children for intervention with specific emphasis on those who are given priority in some way. The results have therefore been gathered together to summarise a model of that process under three headings: the child, the process and the expertise. These three sections reflect three theoretical threads which were explored in the literature chapters and which have underpinned the development of the study questions. Before the results are discussed, this chapter will undertake a brief review of the methodology used in the study.

## **12.1. METHODOLOGY**

The main discussion of methodology took place in the earlier chapters, predominantly in chapter six; also, in each data collection chapter, the particular knowledge elicitation (ke) techniques, the rationale for their selection and comments on their usefulness were discussed. It remains only to take a summary look back to evaluate the overall methodological approach of the study. To do this, some criteria are needed against which to judge the study and being a mainly qualitative study, the criteria should be fitting to that methodological approach. Using canons of good quantitative research are

inappropriate and unhelpful. So for example, replicability is seen as a canon of sound quantitative research: would another researcher, following exactly the same procedures, come up with the same results. However, replicability is an inappropriate standard for qualitative studies since it misses the point of qualitative research: that of achieving in-depth individualised insights about a single context. The standard instead, it is argued, is not whether another researcher would come up with the same final concepts or model, but whether the findings are worth paying attention to. (Baker et.al., 1992; Marshall & Rossman, 1989)

A variety of principles for evaluating qualitative methods can be found in the literature. Recurrent themes include the preservation of data, the search for negative instances, bottom-up analytic strategies which result in categories firmly grounded in the data. (Marshall & Rossman, 1989; Miles & Huberman, 1989; Van Maanen, 1983) Each of these will be used to review to methodology of this study.

#### **12.1.1. Preservation of data**

Interviews and group discussions were audiotaped and transcribed and a sample from each data set is included in the appendix. During each stage of analysis, verbal data from which the concepts and categories have been derived is presented in the text. Sometimes these are quite small extracts, from several different points in interviews, collated to illustrate the derivation of a category. Although removed from their context, these extracts retain the wording from the originals. The text also includes larger chunks of extracts and sample transcripts are included as appendices.

#### **12.1.2. Negative instances**

The search for negative instances as a means of validating categories has formed an integral part of the methodology and was particularly prominent during the SGN analysis. As a network was developed, items of data were coded onto the network as a means of checking its content and structure. During the SGN evaluation, the qualitative analysis of the changes made to the structure and content of the networks in itself constitutes a search for negative instances. Negative instances have been used therefore to correct and develop the interpretations of data contained in the SGNs.

### **12.1.3. Bottom-up analysis**

The concern of qualitative research is to "discover" (Layder, 1993, p.39) the theory from the data rather than setting out to confirm a preconceived theoretical position. The analysis reported in chapter 8 (analysis using SGNs) and in Chapter 10 (problem formulation) as the main theory generating chapters, show this bottom-up approach, where the data was read and re-read, collated and re-collated, checked and re-checked as the categories were established. Each of these two chapters starts in the raw verbal data from interviews and discussion and makes explicit the stages towards the theoretical description. Where an existing model has been used (eg Johnson & Keravnou, 1988) this has not been used directly in the analysis itself, but, following the analysis, used to reflect on and display the results.

### **12.1.4. Significant research**

The final canon for good qualitative research concerns the significance of the resultant theory or model: was it all worth it and does it mean anything at all? A challenging question for any researcher to consider and one that comes too early in this discussion since the results have not been considered in total. The next few sections will therefore attempt to pull together the results. The discussion can then draw some conclusions about the overall significance and worth of the study.

## **12.2. A MODEL OF SELECTION AND PRIORITISATION**

"Science it has been said, is a continued search for fresh models and language pathology is no exception"

Crystal, 1980, p.14

Here then is another! Pursuing the same process of attempting to explain an event, to interpret and predict (Baker et al., 1992), the model presented here consists of a series of descriptions which reflect on the nature of decisions made by slts. Models previously used in the field of language pathology give their allegiance to a particular theoretical standpoint: medical models, linguistic models, psycholinguistic models, developmental models and so on. Their name announces their allegiance. Within SLT there are also models such as consumer, expert, participant, which conceptualise and characterize the role of the slt in relation to her clients. As indicated in the literature discussion, shifting paradigms within associated disciplines lead to secondary shifts in the field of language

pathology (Ringel et al, 1984) as the new paradigms are applied to the field and their models explored.

### **12.2.1. Theories of action**

The model presented here however had a different kind of theoretical beginning. Rather than aligning itself to a particular view of language pathology or the roles adopted by professionals in practice, it attempts to describe the process of practice itself. In the view of Argyris & Schon (1974), it could be regarded as a "theory of practice" (p.6). Such theories, they suggest, consist of a number of theories of action which for the holder of the theory, control their actions in the context of professional practice and serve to predict and explain their behaviour to the onlooker. It is the practitioner's own theory, and a view of how she organises her knowledge for use in practice. The theories may reflect models such as those above which influence the practitioner but will be subsumed within the structures developed for practice. The 'theories' presented here therefore have their origins in the practice of the professional.

The results of this study can therefore be regarded as a number of theories of action, together forming a theory of practice which describes the process of selection and prioritisation of preschool children referred for SLT. The results will be presented under three headings: the child, the process and the expertise.

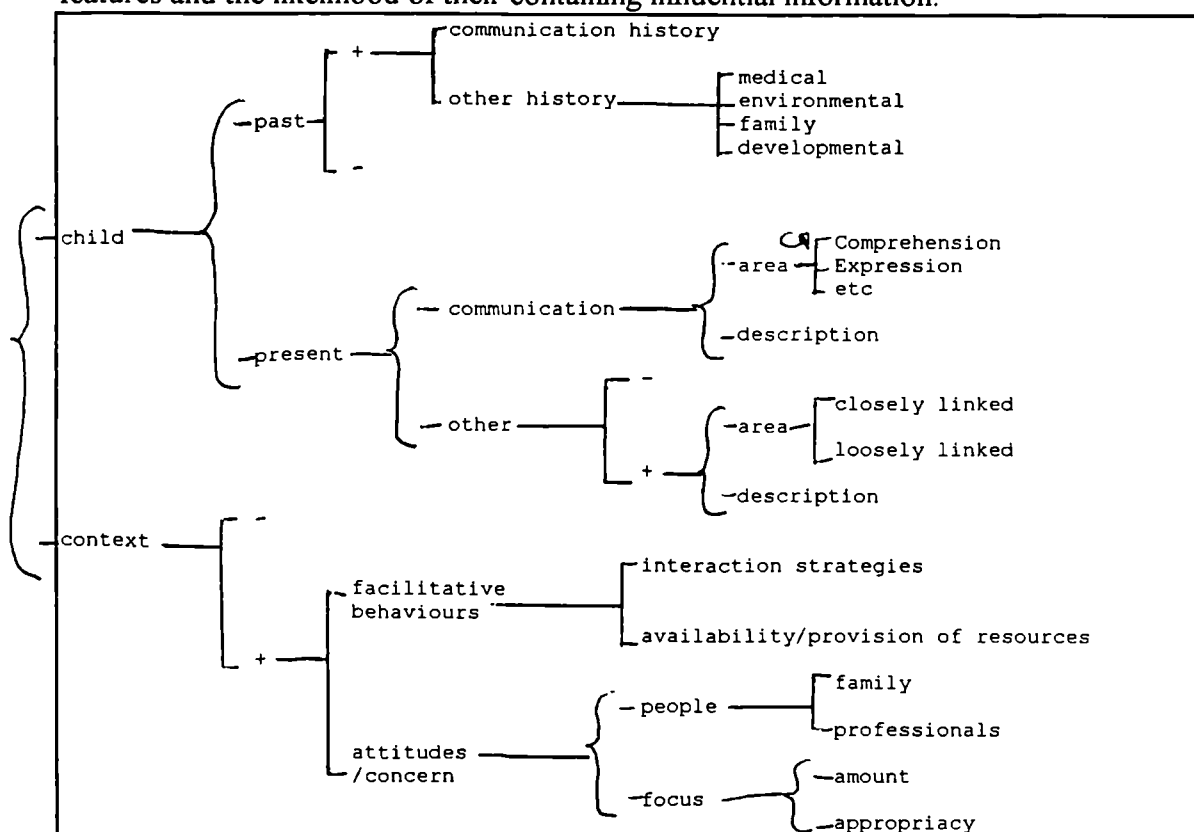
### **12.2.2. The Child**

One of the driving forces behind this project was an awareness of the difficulties of identifying the priority child from preschool referrals to SLT. The literature review showed that whilst guidance is available to slts from the literature, the picture is far from easy or certain. The picture emerging from this investigation is the expert's view; the complexity is evident and uncertainties remain. The exact combinations which constitute different levels of priority have not been identified. However, using SGNs, it was possible to make explicit the range of factors taken into account and the relationship between those factors.

The first theory of action, presented in the SGN in figure 12.1 concerns those areas investigated by a slt during an initial assessment. This picture should hold no surprises for slts: it includes features commonly discussed in the epidemiological and language pathology texts; the categories are similar to those found in any case history pro forma

and would feature as the headings used by slt undergraduate students for their case studies.

The difference is that the arrangement within the SGN shows the relationships between features and the likelihood of their containing influential information.



**Figure 12.1 Areas under investigation**

The picture of the priority child that emerges is one where the child's communicative context can no longer support the child's communicative needs unaided. The communicative needs of the nonpriority child, on the other hand, are being met adequately by the child's communicative context. That is, when making a selection and prioritisation decision, slts balance the child's communication difficulties with the levels of support available to that child already.

When making decisions about the child's level of difficulty, the child's presenting communication skills are obviously paramount. The exact interpretation of 'communication areas' in figure 12.1 will depend on the model of language pathology espoused by the individual slt; the results suggest (section 11.4.3) that developmental models predominate. Other skills and attributes of the child are also taken into account, with those more closely associated with communication being held as more significant. Aspects of the child's history are also attended to, providing indirect or "circumstantial" evidence. (Johnson & Keravnou, 1988) Slts are often unsure of the significance of such

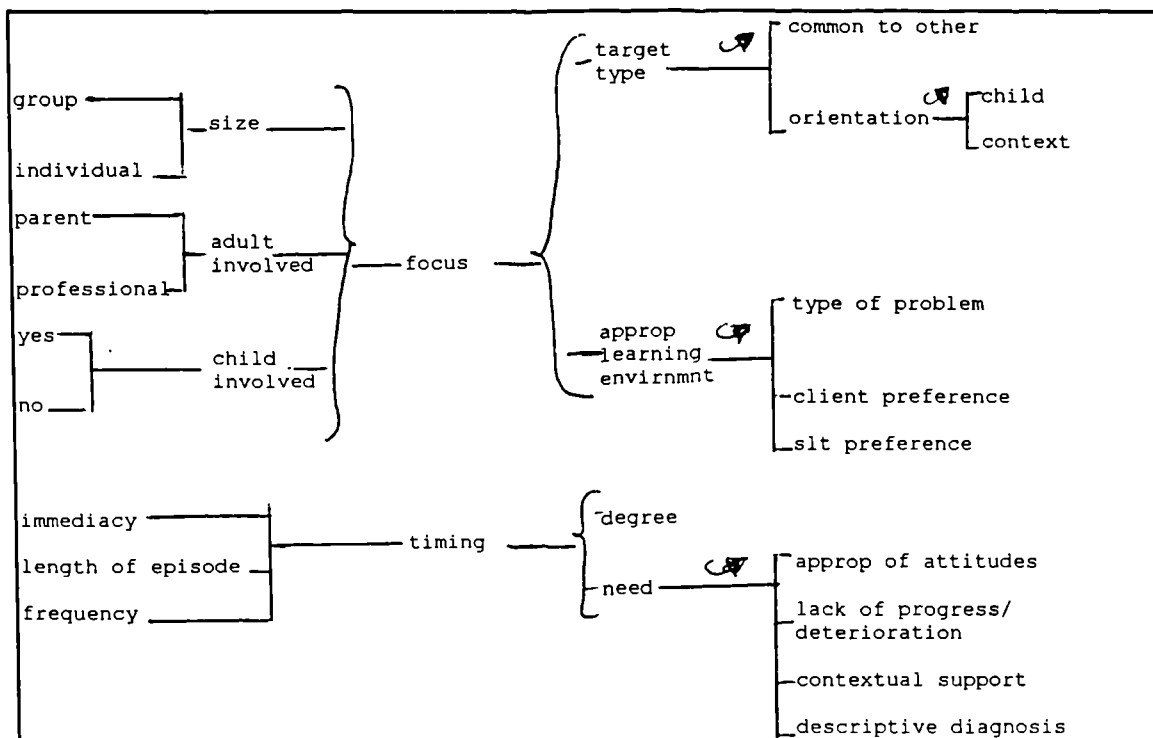


information in any particular case, but it is nonetheless attended to, retained and if confirmed, held as part of the diagnostic picture.

The communicative context is seen in terms of the behaviour and attitudes of significant adults, typically, the parents. There are occasions when context was not taken into account; for example, if it is established early that no communication difficulties are evident, then there is no need to consider context. On the other hand, where a severe communication difficulty is present, context may affect the timing or focus of intervention, although not necessarily the 'take on/do not take on' decision.

### **12.2.3. Assessment to management**

A theory of action showing more specifically which features gave rise to these variations was not identified and care must be taken not to overinterpret data. Only the priority/nonpriority distinction was investigated. However, some fairly straightforward comments can be made about the links. Section 10.4.3 suggested that management targets are accumulated as findings are evaluated. For children who are prioritised for follow-up, the investigation process is likely to continue to establish more in depth details of their difficulty. The management targets established as part of the first session are therefore likely to be general guidelines or overall aims, which lead the subsequent actions and provide the slt with initial comments and suggestions for parents at the end of the first session. These provide the initial content of intervention. Once a prioritisation decision has been made it can be further interpreted in terms of the focus and timing of intervention. These are displayed in figure 12.2.



**Figure 12.2. Management Options**

**Timing:** As suggested above, the timing of interventions may be judged in terms of the child's needs and it seems that the timing may vary on a sliding scale. It is likely that the appropriacy of parent attitudes influence slts' perception of urgency; the length of time a child's communication development has been static or deteriorating is also likely to influence the immediacy with which intervention is offered. The degree of support and its potential for change will affect the length of episode needed and finally, the type of problem and its severity is likely to affect all aspects of timing. For example, it was seen in the regional documentation that dysfluent children are given preferential waiting times - dysfluency carries with it a certain urgency that is not associated with language delay. (Appendix B)

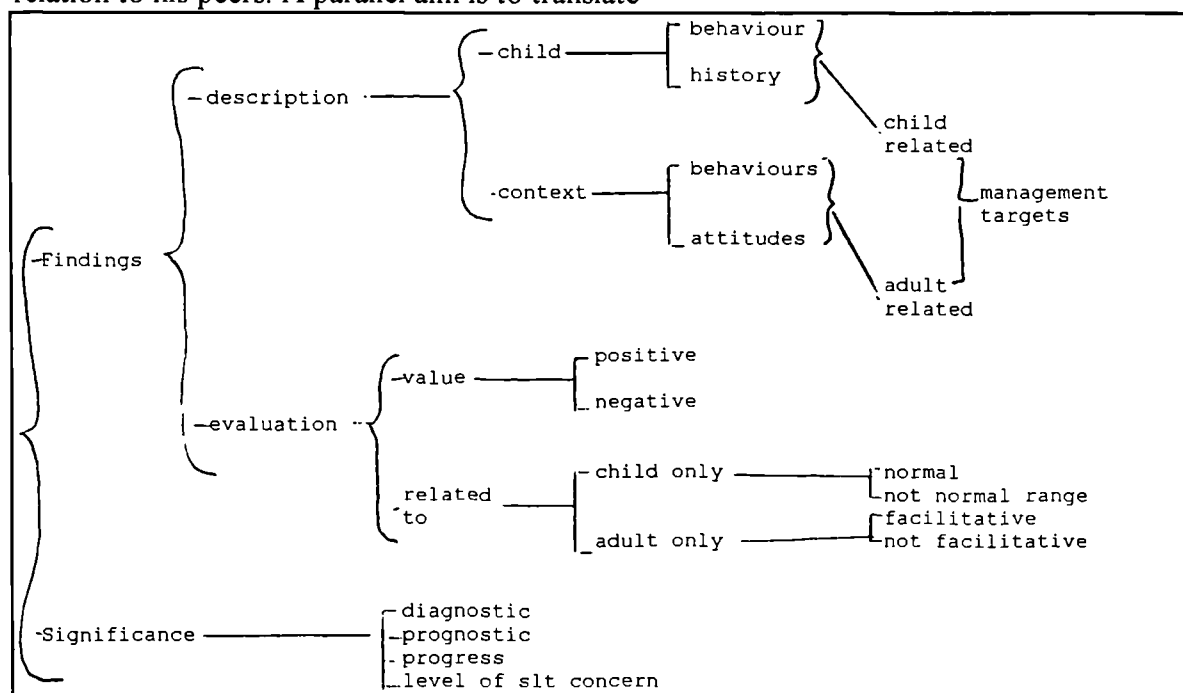
**Focus:** Together, the link between target types and judg ments about the most appropriate learning environment seem to determine the choice of focus. So for example, slts will consider whether the target is common to other clients and could therefore be efficiently tackled in a group context; the orientation of the target towards child or context will also affect the focus. These would be concurrently considered with the type of presenting problem and preferred methods of dealing with it; judg ments about

whether the client is more likely to learn effectively in a group or 1:1 and whether the slt is a more effective facilitator in a group or 1:1 context would also be influential.

The SGNs presented in this section are theories-of-action representing the areas investigated. The specific features of priority or nonpriority children were presented in sections 8.5.1 & 8.5.2 and examples of the networks applied to priority and nonpriority children can be found in appendix N.

#### 12.2.4. The Process

The next theory of action concerns those structures which seem to be guiding slts through the assessment. Whilst the above theory controls the content of the investigation, this concerns the process of investigation. Figure 12.3 is a straight reproduction of that presented in section 10.20. The SGN shows the problems set by slts for themselves to solve during a session. For example, to confirm a set of findings which have diagnostic significance. A subsidiary aim would be to describe and evaluate the child's behaviour in relation to his peers. A parallel aim is to translate



**Figure 3 Problem formulations**

the evaluated descriptions into targets for management.

This SGN can be seen as a series of tasks which must be accomplished during the assessment. From the SGN of figure 10.3, those tasks might be called "description, evaluation and interpretation". That is, the slts' tasks during an assessment are to

describe the child and context, to evaluate them as positive - negative etc and to interpret their diagnostic, prognostic etc significance.

The description of the diagnostic task given by Johnson & Keravnou (1988) in section 4.7 can be used to display how these tasks might fit into the overall process. (fig 12.4) The main task at the initial assessment comprises the assessment of child and context to determine what is wrong and what to do about it, ie, diagnosis. The main task is achieved through a series of subtasks, in this task, the 'description' elements. Subtasks such as 'describe a child's level of comprehension' or 'check out the mother's level of concern' are achieved through related procedures such as standardised assessments, case history questioning and so on. As explained in section 4.7.2, these subtasks and their procedures are selected and implemented iteratively until the task is completed and the termination conditions have been met. Johnson & Keravnou note that insight into how experts know when to stop their diagnostic process is still an unanswered question. (1988, p.193) In this task, it can be only broadly described as the point at which the level of functioning can be described and an explanation given for that level, along with an action plan. A rider to this might add that a relationship must have been established with the parent which allows the transmission of the findings and their significance and a negotiation of the action plan.

The selection of subtasks depends on the case specific information available at any point during an investigation and is informed by supertasks. In this task, the SGN of figure 12.1 can be seen as a supertask which guides the content aspects of the investigation; the evaluation and interpretation tasks are probably also best viewed as supertasks since it would be on the results of their operations that further descriptions would be pursued or terminated. For example, in a three year old child, an initial findings of 'using only single words' would trigger a negative evaluation which would in itself the trigger further investigations, ie, more descriptions.

So the theories of action expressed here operate as tasks, super- and sub- tasks which drive the main diagnostic task. Other theories of action will also be in operation to control the slt's management of a session. For example, the establishment of a relationship with the parent and the child is a primary consideration of an initial session; the theory of action which underpins how a slt manages this will interact with other theories operating during the session.

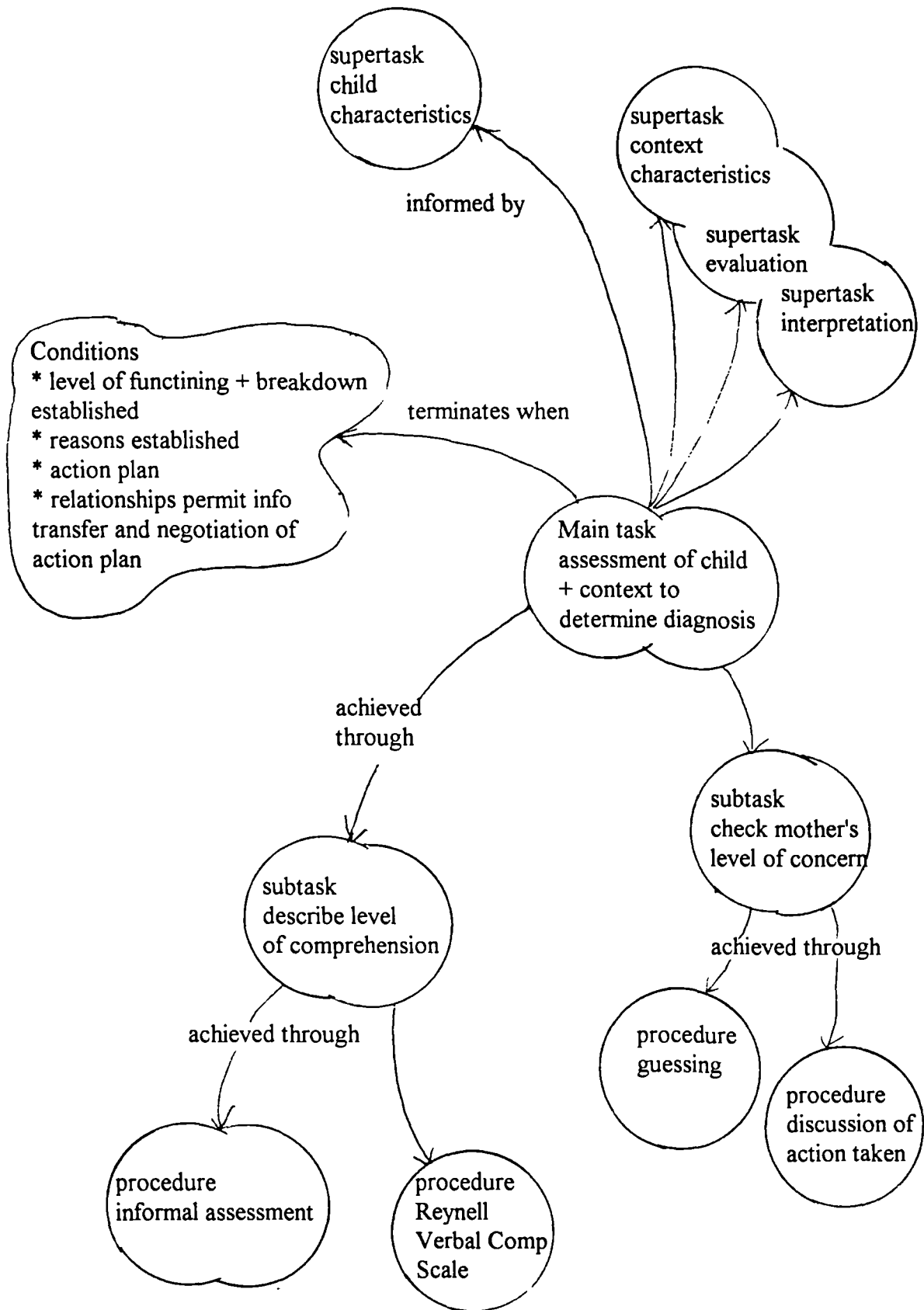


Figure 12.4 The selection and prioritisation task

| Chapter | Stage of assessment                    | Consensus  | Comment  |
|---------|--|--|--|
| 7       | What areas to investigate              | Agreed that the range of factors to be considered has been identified  | Broad areas are covered in the literature & training   |
| 10      | Procedures used in assessment          | Variation in range of techniques used<br>Variation in how much is assessed at the first assessment   | Views on what constitutes valid data may vary<br>Personal preferences and experience affect choices<br>Possible variation in perceived purpose of first visit, role of parents and the validity of the data they provide<br>Different management options affects details of assessment |
| 10      | What slts see as children are assessed | Variation in features attended to  | Familiarity with assessment techniques affects ability to interpret data.  |
| 8<br>9  | What factors are significant           | Communication always noted; if assessed, context is always significant; agreement about difficulty interpreting case history data; higher agreement with higher priority cases | Not surprising - this is the SLT domain<br>Parallels the findings of Records & Tomblin. '94  |
| 9       | Severity rating                        | Variation in range used;   | Differing thresholds of concern  |
| 9       | Relative severity of children          | Significant agreement in the ranking of children; apparent agreement reached in discussion   | Slts agree about priority status of a child when compared to others  |
| 10      | Management plans                       | Agreement about content of intervention but not about the specifics of timing and focus; point of intervention varies: some slts review, others do not.                        | Reflects different working practices and different procedures & policies; possible differences in perception of roles.   |

**Table 12.1. Summary of agreement between speech & language therapists**

### **12.2.5. The Expertise**

Throughout the project, a link has been made between expertise and consensus. Consensus was identified as a means of exploring the knowledge elicited as emanating from a body of knowledge rather than being idiosyncratic. The findings are summarised in table 12.1 showing the stage of the assessment process to which they relate. The table also indicates where the results can be found in the text and summarises issues raised in the preceding discussion of the results.

It was possible at points throughout the study to demonstrate consensus between slts. Also it was often possible to identify patterns to the disagreements suggesting that these were not merely idiosyncratic behaviours but the outcome of differing theories of action related to the working context. A comparison of features which gave rise to consensus with those that caused disagreement provides insight into the underpinning structures of SLT knowledge.

#### **ACT versus action**

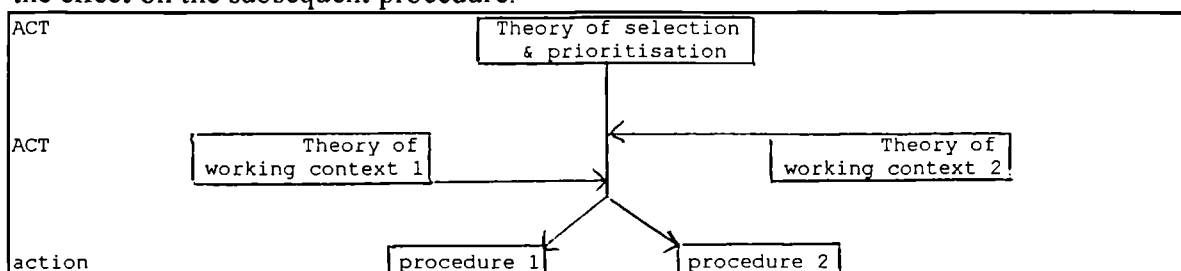
Slts agreed about the range of factors which affected their decision; a child's communication and context were used by most slts in their decisions; they agreed about the relative priority status of children.

Each point of consensus however, seemed to be matched by a corresponding point of disagreement. For example, slts agreed about the range of areas to investigate but differed in how many they would carry out in a particular case. They agreed about the factors giving rise to influential information but the threshold at which a slt became concerned varied. Similarly they agreed about the priority status of a child but would provide differing levels of care for that child.

The differences seems to reflect the dichotomy between ACT and action, between meaning and behaviour discussed in the literature review. So the points at which consensus occurs reflect the underlying meanings or theories which inform slt behaviour. The points of disagreement occur at points of implementation of those underlying theories and represent procedural interpretations. So, it seems that slts shared a clinical ACT with respect to influential factors in prioritisation, for example, but their behaviours differed in how they would investigate those factors.

### 12.2.7 Interaction of theories-of-action

It can be concluded then, that there are theories-of-action common to slts working in community clinics with preschool children that inform their selection and prioritisation. Given that there are discernible patterns to some of the disagreements, it can be concluded that these may be the outcome of interacting theories of action emanating perhaps from working contexts. Slts may share these other theories with colleagues in their more immediate working context. Figure 12.5 shows this interplay of theories and action. By specifying what the intervening ACTs or theories consist of, one should be able to predict the effect on the subsequent procedure.



**Figure 12.5 ACTs and actions in slts' working context**

For example some departments operate a 'review' choice (see Appendix B) in their management options; such an option allows slts to use their own observations of client change over time and therefore they would not necessarily attend to reported change with the same level of interest as slts who do not operate a review policy.

The current state of knowledge in SLT is such that often these conflicting theories are merely options with no correct answer. Law (1994, p.vii) for example, comments that there may well be a variety of ways in which we can provide effective intervention. Schon (1983) comments that such variation is often inherent in professional practice with contention because of the "multiple ways of framing the practice role". Only through an explicit discussion of these varying influences can we begin to evaluate their potential for affecting effectiveness.

#### **Theories within theories**

It is also interesting to examine the theories-of-action for evidence of a more direct incorporation of other models and indeed it is possible to detect such an influence.

Medical and linguistic models are viewed as the most influential models (Stackhouse & Wells, 1993), the latter often described as a behavioural model since it takes a descriptive perspective (Crystal, 1980, p.27). Both models seem to be in evidence within these



results: slts gather descriptions and establish linguistic (and other) baselines as a fundamental part of their assessment. These findings are then attributed some significance, following a medical model, in terms of diagnostic and prognostic value.

A developmental perspective is also strong in that the child's presenting behaviours are evaluated in terms of the expected developmental range for his age. Other models such as a psycholinguistic model are not particularly in evidence. This may be related to the age of child or it may be that other models are incorporated at later stages in the management process.

### **12.3. CONCLUSIONS**

The area of decision making in SLT has received scant attention. Very few studies have focused on how slts make their decisions. This study has tackled the area using literature and methodologies from the field of computer science and in particular from expert systems development. It therefore presents the application of computer science methods to a different field and the exploration of a novel aspect within SLT.

The qualitative methodology has produced a theoretical description of the process of selection and prioritisation of preschool children by slts. The picture is one of description, evaluation and judgement of significance, whereby the child's presenting behaviours (primarily) and history (secondarily) are balanced alongside the child's context to determine their prioritisation status. It is a composite picture based on the practice of a number of slts from varying working contexts whose common ground was their expertise in community clinics. It therefore encompasses a range of practice rather than a particular instance. This range has enabled the identification of points of consensus but also points of divergence, allowing the exposition of interacting theories-of-action which surface in the differing practices of individuals.

#### **12.3.1. Descriptive not prescriptive**

The model presented is descriptive rather than prescriptive; that is, the model sets out what is believed to be the case rather than what should be the case (Ellis, 1992, p.72) and as Ellis remarks, it would be a mistake to assume that one can move automatically from descriptive to prescriptive modes. Just because something is currently in operation does not automatically recommend it to be adopted as an example of good practice.

Nevertheless, as a description of the practice of experienced slts, it must represent valuable knowledge. How then can the models be used.

### **12.3.2. Map, mirrors and measures**

Although not a prescriptive recipe for how an assessment should be carried out, the theories-of-action proposed here do provide a map of the process. The exact route to be taken, short-cuts or scenic meanderings are up to the individual slts and will be influenced by other theories-of-action to which she espouses. Like a map, the theories can be used to redirect an assessment that is getting lost or has come to a dead-end. As an underpinning guide, it should not inhibit the development of expertise. The literature discussion suggested that something which provided specific rules may well deskill the experienced slt or prevent the move to a higher level of expertise in a novitiate. The model however, still leaves the specific route through the assessment task to the slt as well as the final decision. It does provide an aide-memoire as to the range of factors that can be significant and gives an indication of their relative importance.

More helpful than specific rules is something which stimulates reflection. The theories presented here can be used as resources which enable slts individually and collectively to reflect on the theories which underpin their actions. 'Turning thought back on action' is the process described by Schon (1983, p.50) as the stimulant to professional development. In so doing it can help make explicit to clients and purchasing authorities the assumptions underlying SLT practice. The original motivation for this project was an awareness of the changing ethic within the NHS and the growing demand for accountability. Producing a prescriptive rule specification mitigates against the generation of explanations which fit the actions. Rather, this study has sought out the underlying theories which reveal the process. Finally the theories can be used as a measure against which slts can match their own performance. Differences can be highlighted and stimulate investigation of the cause of variation. Some practices which are potentially conflicting may be shown to emanate from similar ACTs whereas other apparently uncontentious procedures may turn out to be incompatible.

So the project nears the end. The study has made explicit features of relevance to the dichotomy to prioritise or not to prioritise and in so doing has laid open to discussion the beginnings of a much more complex picture: one which could make explicit the detailed links between particular features and variations in management, thus giving sophistication to the notion of prioritisation.

The process has been shown to be informed by consensual theories-of-action, a diagnostic process which iteratively builds up the explanation of what is wrong and what can be done.

The study has also demonstrated a body of knowledge held and used by slts in the identification of priority children. Some of it reflects book knowledge; some emanated from practical experience. The presence of shared knowledge is a validation of the professional expertise of the slt in the context of the prioritisation decision.

The project has involved expert slts in a reflective process, making explicit the knowledge which underpins their action. It has simultaneously stimulated reflection on the author's own practice and confirmed the view of the reflective process as necessary to the continuing development of the individual professional and the corporate profession.

## **References**

Adelson, B. 1984 'When novices surpass experts'. *Journal of Experimental Psychology, Learning, Memory & Cognition*, **10**, pp.483-495.

Argyris, C. & Schon, D.A. 1974 *Theory in practice: increasing professional effectiveness*. Jossey-Bass Ltd.

Bainbridge, L. 1986 'Asking questions and accessing knowledge'. *Future Computing Systems*, **2**, pp.143-149

Baker, C.B., Wuest, J. & Stern, P.N. 1992 'Method slurring: the grounded theory/phenomenology example'. *Journal of Advanced Nursing*, **17**, pp.1355-1360.

Beitchman, J.H., Nair, R., Clegg, M. & Patel, P.G. 1986 'Prevalence of speech and language disorders in 5 year old kindergarten children in the Ottawa-Carleton region'. *Journal of Speech & Hearing Disorders*. **51**, pp.98-110.

Bench, R.J. 1991 'Paradigms, methods and the epistemology of speech pathology: some comments on Eastwood, 1988'. *British Journal of Disorders of Communication*, **26**, pp.235-242.

Bench, R.J. 1989 'Science and theory in communication disorders', *Journal of Speech & Hearing Disorders*, **54**, pp.296-298.

Berry, M. 1975 *An Introduction to systemic linguistics. Vol I. Structures and systems*. London: B.T. Batsford

Bishop, D.V.M. & Edmundson, A. 1986 'Is otitis media a major cause of specific developmental language disorders'. *British Journal of Disorders of Communication*. **21**, pp.321-338.

Bliss, J., Monk, M. & Ogborn, J. 1983 '*Qualitative data analysis for educational research*'. Croom Helm.

Bloom, L. & Lahey, M. 1978 '*Language development and language disorders.*' John Wiley & Sons.

Boshuizen, H.P.A. & Schmidt, H.G. 1992, 'On the role of biomedical knowledge in clinical reasoning by experts, intermediates and novices'. *Cognitive Science*, 16, pp.153-184.

Brewer, J. & Hunter, A. 1989 *Multimethod research*. Sage Publications

Bryman, A. 1988 *Quantity & Quality in Social Research*. Routledge.

Burton, A.M., Shadbolt, N.R., Hedgecock, A.P. & Rugg, G. 1987 'A formal evaluation of knowledge elicitation techniques for expert systems'. In *Research & development in expert systems, IV*, by D.S. Moralee. Cambs University Press.

Byers Brown, B 1987 'Early identification of the language disordered child'. In *Proceedings of the First International Symposium on Specific Speech and Language Disorders in Children*. AFASIC. pp. 135-144.

Byng, S. 1990 'What is aphasia therapy'. The 7th Annual Mary Law Lecture for Action for Dysphasic Adults.

Chapman, 1988, 'Language comprehension in the infant and preschool child'. In Yoder & Kent (Eds) op. cit.

Chapman, R. 1983. 'Deciding when to intervene'. In *Contemporary Issues in Language Intervention*, by Miller, J., Yoder, D. & Schiefelbusch, R. (eds) ASHA Reports, 12, pp.221-225.

Chase, W.G. & Simon, H. 1973 'Perception in Chess'. *Cognitive Psychology*, 4, pp.55-81.

Chen, J.S. & Srihari, S.N. 1994 'A probabilistic theory of model based diagnosis', *International Journal of Human-Computer Studies*. 40, pp.933-963.

- Chi, M.T.H., Glaser, R.T. & Farr, M.J. 1988 *The nature of expertise*. Lawrence Erlbaum Associates.
- Chi, M.T.H., Feltovitch, P.J. & Glaser, R. 1981 'Categorisation and representation of physics problems by experts and novices'. *Cognitive Science*, 5, pp.121-152.
- Chiat, S. 1994 'A psycholinguistic approach'. In *Before school* by J. Law, (ed) op.cit.
- Cochran, E.L., Bloom, C.P. & Bullemer, P.T. 1990 'Increasing the end-user acceptance of expert systems by using multiple experts: case studies in knowledge acquisition'. In *Readings in knowledge acquisition: current practice and trends* by McGraw, K.L. & Westphal, C.R. Ellis Horwood
- Cole, K.N., Dale, P.S. & Mills, P.E. 1990 'Defining language delay in young children by cognitive referencing: are we saying more than we know'. *Applied Psycholinguistics*. 11, pp.291-302.
- Collins, H. 1990 *Artificial experts. Social knowledge and intelligent machines*. MIT Press.
- Collins, H.M., Green, R.H. & Draper, R.C. 1985 'Where's the expertise? Expert systems as a medium of knowledge'. In *Expert Systems 85 Proceedings of the 5th technical Conference of the British Computer Society. Special group of Expert Systems* by M. Merry. Cambridge University Press.
- Compton, P. & Jansen, R. 1990 'A philosophical basis for knowledge acquisition'. *Knowledge Acquisition*, 2, pp.241-257.
- Coombes, K. 1987 'Speech Therapy'. In *Language development and language disorders* by Yule, W. & Rutter, M, Blackwell Scientific Publications.
- Crystal, D. 1982 'Terms, time and teeth'. *British Journal of Disorders of Communication*, 17 (1) pp.3-19.
- Crystal, D. 1980 *Introduction to language pathology*. Edward Arnold.

CSLT 1991 '*Communicating Quality. Professional standards for speech and language therapists*'. College of Speech & Language Therapists.

Cunningham, C. & Davis, H. 1985 '*Working with parents. Frameworks for collaboration*'. Open University Press.

Dalton, P. & Dunnett, G. 1990 '*A psychology for living - personal construct theory for professionals and clients*'. Dunton Publishing.

Davies, P. & van der Gaag, A. 1992a 'The professional competence of speech therapists I: introduction and methodology'. *Clinical Rehabilitation*, **6**, pp.209-214.

Davies, P. & van der Gaag, A. 1992b 'The professional competence of speech therapists III: skills and skill mix'. *Clinical Rehabilitation*, **6**, pp.311-323.

DES 1972 '*Speech Therapy Services*' (The Quirk Report). HMSO.

Dowie, J. & Elstein, A. 1988 '*Professional judgement. A reader in clinical decision making*'. Cambridge University Press.

Dreyfus, H.L. & Dreyfus, S.E. 1986 '*Mind over machine. The power of human intuition and expertise in the era of the computer*'. Basil Blackwell.

Dunn, W.R. & Hamilton, D.D. 1985 'Techniques of identifying competencies needed of doctors'. *Medical Teacher* **7** (1) pp.15-25.

Eastwood, J. 1988 'Qualitative research: an additional research methodology for speech pathology'. *British Journal of Disorders of Communication*, **23**, pp.171-184

Eddy, D.M. 1988 'Validations in physician practice: the role of uncertainty'. In Dowie, J & Elstein, A. op.cit

Ellis, R. 1992 'Action-focus curriculum for the interpersonal professionals'. In *Learning to Effect* by R.Barnett. Open University Press.

Ellis, R. 1988 'Competence in the caring professions'. In *Professional Competence and Quality Assurance in the Caring Professions* by R. Ellis. Chapman & Hall.

Elstein, A.S. 1989 'Decision analysis in surgical education', *World Journal of Surgery*, **13**, pp.287-271.

Elstein, A.S. & Bordage, G. 1988 'Psychology of clinical reasoning. In Dowie, J & Elstein, E. op.cit.

Emerick, L.L & Hatten, J.T. 1979 '*Diagnosis and evaluation in speech pathology*'. Prentice Hall.

Enderby, P. 1992 'Outcome measures in speech therapy: impairment, disability, handicap and distress'. *Health Trends*, 24 (2) pp.61-64.

Enderby, P. & Davies, P. 1989 'Communication disorders: planning a service to meet the needs'. *British Journal of Disorders of Communication*, **24** (3), pp.301-331.

Ericsson, K. & Simon, H.A. 1984 '*Protocol analysis: verbal reports as data*'. MIT Press.

Fey, M.E. 1986 '*Language intervention with young children*', College Hill Press.

French, A. 1990 'Looking at language delay - Part II' *College of Speech Therapists Bulletin*, **464**, (December), pp. 2-5.

Fundudis, T., Kolvin, I. & Garside, R.F. 1980 'A follow up of speech retarded children'. In *Language and Language Disorders* by L.A. Hersov, M. Berger, & A.R. Nicol, Pergamon Press. pp.97-113.

Gammack, J.G. 1987 'Different techniques and different aspects on declarative knowledge'. In A.Kidd, op.cit

Gammack, J.G. & Young, R.M. 1985 'Psychological techniques for eliciting expert knowledge'. In *Research and development in expert systems* by M.A. Bramer, (ed). Cambridge University Press.



Garg-Janardan, C. & Salvendy, G. 1988 'A conceptual framework for knowledge elicitation'. *Knowledge-Based Systems*, 2, pp.119-129.

Gerard, K.A. & Carson, E.R. 1990 'The decision making process in child language assessment'. *British Journal of Disorders of Communication*, 25 (1) pp.61-75.

Gibbard, D. 1994 'Parental-based intervention with pre-school language delayed children'. *European Journal of Disorders of Communication*, 29 (2), pp.131-150

Gill, K.S. 1986 'The knowledge based machine: issues of knowledge transfer'. In *Artificial Intelligence for Society* by Gill, K.S. . John Wiley & Sons.

Glaser, R.T. & Chi, M.T.H. 1988 Overview of expertise. In Chi, et.al. op.cit.

Glaser, B.G. & Strauss, A.L. 1967 *'The discovery of grounded theory'*. Aldine

Gotteri, N. 1988 'Systemic linguistics in language pathology'. In *New developments in systemic linguistics. Vol 2* by M.A.K. Halliday & R.P. Fawcett, (Eds) Francis Pinter. pp 219-225.

Grabowski, M., Massey, A.P. & Wallace, W.A. 1992 'Focus groups as a group knowledge acquisition technique'. *Knowledge acquisition*, 4, pp.407-425.

Graddol, D., Cheshire, J. & Swann, J. 1994 *'Describing language'*, Open University Press.

Gutfreund, M., Harrison, M. & Wells, G. 1989 *'Bristol Language Development Scales'*, NFER-Nelson

Hall, D.M.B. 1989 *'Health for all children. A Programme for child health surveillance. Report of the Joint Working Party on Child Health Surveillance'*. Open University Press.

Halliday, M.A.K. 1973 *'Explorations in the functions of language'*. Edward Arnold

Hamm, R.M. 1988 'Clinical intuition and clinical analysis: expertise and the cognitive continuum'. In Dowie, J. & Elstein, A. op.cit.

Hammersley, M. 1990 'Whats wrong with ethnography: the myth of theoretical description'. *Sociology*, 24 (4) pp.597-615.

Hart, A. 1987 'Role of induction in knowledge elicitation'. In A.Kidd op cit

Hoffman, R.R. 1990 'A survey of methods for eliciting the knowledge of experts'. In K.L. McGraw & C.R. Westphal. op.cit.

Holliday, I. 1992 *The NHS Transformed*, Baseline Books.

Huntley, R.M.C., Holt, K.S., Butterfill, A. & Latham, C. 1988 'A follow-up study of a language intervention programme'. *British Journal of Disorders of Communication*. 23 pp.127-140.

Ingham, R.J. & Siegel, G.M. 1989 'Statements and Overstatements', *Journal of Speech & Hearing Disorders*, 54, pp.297-298.

Johnson, E.J. 1988 Expertise and decision making under uncertainty: performance and process. In Chi et. al. op.cit.

Johnson, N.E. 1983 *Elicitation and representation of children's arithmetic knowledge*'. PhD Thesis. University of London.

Johnson, L. & Johnson, N.E. 1987 'Knowledge elicitation involving teachback interviewing'. In A. Kidd op cit.

Johnson, L. & Keravnou, E.T. 1988 *Expert systems architectures*'. Kogan Page.

Kelly, G.A 1955 *The psychology of personal constructs*'. Norton.

Keravnou, E.T. & Johnson, L. 1986 *Competent expert systems*'. Kogan Page.

Kidd, A.L. 1987 *'Knowledge acquisition for expert systems. A practical handbook'*. Plenum Press.

Kolodner, J.L. 1983 'Towards an understanding of the role of experience in the evolution from novice to expert'. *International Journal Man-Machine Studies*, **19**, pp.497-518.

Kot, A. & Law, J, 1994 'Developing the prerequisites of language'. In Law, J. (ed) *Before School*, op.cit.

LaFrance, M. 1990 'The special structure of expertise'. In K.L. McGraw & C.R. Westphal, *Readings in Knowledge Acquisition*. Ellis Harwood.

LaFrance, M. 1987 'The knowledge acquisition grid: a method for training knowledge engineers'. *International Journal of Man-Machine Studies*, **26**, pp.245-255.

Lahey, M. 1990 'Who should be called language disorder? some reflections and one perspective'. *Journal Speech & Hearing Disorders*. **55**, pp.612-620.

Law, J. (ed) 1994 *'Before School. A Handbook of approaches to intervention with preschool language impaired children'*. AFASIC.

Layder, D. 1993 *'New strategies in social research: an introduction and guide'*. Cambridge Polity Press

Leahy, M.M. 1990 'Aspects of epistemology in therapy'. *Occasional Paper*, No.1, School of Clinical Speech & Language Studies, University of Dublin, Trinity College.

Lendrum, W. 1994 *'Clinical decision analysis and the selection of aphasia patients for active treatment'*. PhD Thesis, University of Newcastle.

Lesgold, A., Rubinson, H., Feltovitch, P., Glaser, R., Klopfer, D & Wang, Y. 1988 'Expertise in a complex skill'. In Chi, M. et.al. op.cit.

Marshall, C. & Roassman, G.B. 1989 *'Designing qualitative research'*. Sage Publications

McDonnell, J.T. 1994 '*Supporting engineering design using knowledge based systems technology with a case study in electricity*'. PhD Thesis, Brunel University, Dept of Computer Science.

McGraw, K.L. & Harbison-Briggs, K. 1989 '*Knowledge acquisition, principles and guidelines*'. Prentice-Hall International.

Meyer, M. & Booker, J. 1991 '*Eliciting and analysing expert judgement. A practical guide*'. Academic Press.

Miles, M.B. & Huberman, A.M. 1984 '*Qualitative data analysis: a sourcebook of new methods*'. Sage Publications.

Miller, C., Morrison, K. Pentland, B. & Stansfield, J. 1995 'Specialist and generalists'. *College of Speech & Language Therapists, Bulletin*, 513 (January) pp.6-7.

Miller, J.F. 1988 'Language production in the preschool child'. In Yoder & Kent (Eds). op.cit.

Motta, E., Rajan, T. & Eisenstadt, M. 1990 'Knowledge acquisition as a process of model refinement'. *Knowledge Acquisition*, 2, pp.21-49.

MPAG Secretariat, Dept of Health 1991 '*Speech therapy. An examination of staffing issues*'. Report by South Western Regional Health Authority Human Resource Planning Unit.

Nation, J.E. & Aram, D.M. 1984 'Diagnosis of speech and language disorders'. College Hill Press.

Neale, I. 1988 'First generation expert systems: a review of knowledge acquisition methodologies'. *The Knowledge Engineering Review*, 3 (2), pp.105-149.

Nisbett, R.E. & Wilson, R.D. 1977 'Telling more than we know: verbal reports on mental processes'. *Psychological Review*, 84, pp.231-259 .

Olswang, L.B. & Bain, B.A. 1991 'When to recommend intervention'. *Language, Speech & Hearing Services in Schools*, **22**, pp.255-263.

Paden, E.P., Novak, M.A. & Beiter, A.L. 1987 'Predictors of phonologic inadequacy in young children prone to otitis media'. *Journal of Speech & Hearing Disorders*, **52**, pp.232-242.

Pauker, S.G. & Kassirer, J.P. 1987 'Medical progress: decision analysis'. *The New England Journal of Medicine*, **316** (5), pp.250-258.

Panush, R. 1989 'The limits of science in communication disorders'. *Journal of Speech & Hearing Disorders*, **54**, pp.301-302

Paul, R. & Elwood, T.J. 1991 'Maternal linguistic input to toddlers with slow expressive language development'. *Journal of Speech & Hearing Disorders*, **34**, pp.982-988.

Paul, R., Looney, S.S. & Dahm, P.S. 1991 'Communication and socialization skills at ages 2 and 3 in 'late talking' young children'. *Journal Speech & Hearing Disorders*, **34** (4), pp.858-865.

Peterson, H.A & Marquardt, T.P. 1981 '*Appraisal and diagnosis of speech and language disorders*'. Prentice Hall.

Prutting, C.A., Mentis, M. & Nelson, P. 1989 'The limits of 'the limits of science in communication disorders' *Journal Speech & Hearing Disorders*, **54** pp.299-300.

Ravitch, M.M. 1989 'Subjectivity in decision making: common problems and limitations. *World Journal of Surgery*, **13**, pp. 281-286.

RCLST 1995 'Speech and language therapy: Love it? Leave it? Leader article in *Royal College of Speech & Language Therapists' Bulletin*, **520** (August) pp.1-3.

Records, N.L. & Tomblin, J.B. 1994 'Clinical decision making: describing the rules of practising speech-language pathologists'. *Journal Speech & Hearing Disorders*, **37**, pp.144-156.

Rescorla, L. & Schwarz, E. 1990 'Outcome of toddlers with specific expressive language delay'. *Applied Psycholinguistics*, **11**, pp.393-407.

Ringel, R.L., Trachtman, L.E. & Prutting, C.A. 1984 'The science in human communication sciences'. *American Speech-Language-Hearing Association*, **26** (12), pp.33-57.

Roulstone, S. 1983 'Out of the broom cupboard', *Special Education, Forward Trends*, **10**, pp 13-15.

Rugg, G., Corbridge, C., Major, N.P., Burton, A.M. & Shadbolt, N.R. 1992 'A comparison of sorting techniques in knowledge acquisition', *Knowledge Acquisition*, **4**, pp.279-291.

Rutter, M. 1987 Developmental language disorders: some thoughts on causes and correlates. In *Proceedings of the First International Symposium on Specific Speech & Language Disorders in Children*. AFASIC.

Sackett, D.L. Haynes, R.B., Guyatt, G.H. & Tugwell, P. 1991 '*Clinical epidemiology. A basic science for clinic medicine*'. Little, Brown & Co.

Schon, D.A. 1988 'From technical rationality to reflection in action'. In *Professional judgement: a reader in clinical decision making* by J. Dowie, & A. Elstein, Cambridge University Press.

Schon, D. 1987 '*Educating the reflective practitioner*'. Jossey-Bass.

Schon, D. 1983 '*The reflective practitioner: how professionals think in action*'. Temple Smith

Schraagen, J.M. 1993 'How experts solve a novel problem in experimental design'. *Cognitive Science*, **17** (2), pp.285-309.

Schvaneveldt, R.W., Durso, F.T., Goldsmith, T.E., Breen, T.J. & Cooke, N.M. 1985 'Measuring the structure of expertise'. *International Journal of Man-machine Studies*, **23**, pp.699-728.

Shadbolt, N. & Burton, M. 1990 'Knowledge elicitation techniques - some experimental results'. In K.L. McGraw & C.R. Westphal op cit.

Siegel, S. & Castellan, N.J. 1988 '*Nonparametric statistics for the behavioural sciences*'. McGraw-Hill.

Siegel, G.M. & Ingham, R.J. 1987 'Theory & science in communication disorders'. *Journal of Speech & Hearing Disorders*, **52**, pp.99-104.

Skitmore, R.M. 1985 '*The influence of professional expertise in construction price forecasts*'. University of Salford.

Snyder-McLean, L. & McLean, J.E. 1987 'Effectiveness of early intervention for children with language and communication disorders'. In M.J. Guralnick & F.C. Bennett (eds). *The Effectiveness of early intervention*. Academic Press. pp.213-274.

Stackhouse, J. & Wells, B. 1993 'Psycholinguistic assessment of developmental speech disorders', *European Journal of Disorders of Communication*, **28** (4) pp.331-348.

Stengelhofen, J. 1986 'Letter to the editor', *College of Speech Therapists, Bulletin*, **415**, p.6.

Strauss, A. & Corbin, J. 1990 '*Basics of qualitative research*'. Sage Publications.

Swartout, W.R. 1984 'Explaining and justifying expert consulting programs'. In *Readings in medical artificial intelligence. The first decade* by W.J. Clancey, & E.H. Shortliffe. Addison-Wesley Pub Co

Teigen, K.H. 1990 'To be convincing or to be right'. In *Lines of thinking: Reflections of the psychology of thought* by K.J. Gilhooly, M.T.G. Keane, R.H. Logie & G. Erdos. John Wiley & Sons.

Telleen, S. & Wren, C.T. 1985 'Acquisition of prepositions in language-delayed preschoolers: is intervention effective?' *British Journal of Disorders of Communication*, **20**, pp.301-309.

Tierney, K. & Cogher, L. 1994 'Non-directive therapy'. In Law, J. (ed) op.cit.

Tomlinson, C.M. & Johnson, L 1994 'A critical review of the fundamentals of knowledge engineering'. *International Journal of Systems Research & Information Science*.

Van der Gaag, A. 1993 '*Audit: a manual for speech and language therapists*'. College of Speech & Language Therapists.

Van der Gaag, A. & Davies, P. 1992a 'The professional competence of speech therapists II: Knowledge base'. *Clinical Rehabilitation*. **6**, pp.215-224.

Van der Gaag, A. & Davies, P. 1992b 'The professional competence of speech therapists IV: attitude and attribute base'. *Clinical Rehabilitation*. **6**, pp.325-331.

Van der Gaag, A. & Davies, P. 1994 'Following the dolphins: an ethnographic study of speech and language therapy with people with learning difficulties'. *European Journal of Disorders of Communication*, **29** (2), pp.203-223.

Van der Gaag, A. & Dormandy, K. 1993 '*Communication and adults with learning disabilities*'. Whurr.

Van Maanen, J. (ed) 1983 '*Qualitative methodology*'. Sage Publications.

Voss, J.F. & Post, T.A. 1988 'On the solving of ill-structured problems'. In Chi et al op.cit.

Ward, S., Birkett, D. & Kellet, B. 1990 'An expert way of prioritising clients'. *Speech Therapy in Practice*, **5** (11), p.12.

Weber, J.L., Kushnir, W.V. & Weber, S.E. 1982 'A comprehensive approach to assessment and treatment of severe developmental speech and language disorders'. *Journal of Learning Disabilities*, **15** (1), pp.8-14.



Whitehurst, G.J. & Fischel, J.E. 1994 'Early developmental language delay: what if anything should the clinician do about it?' *Journal of Child Psychology & Psychiatry*, **34** (4), pp.613-648.

Whitehurst, G.J., Arnold, D.S., Smith, M., Fischel, J.E., Lonigan, C.J. & Valdez-Menchaca, M.C. 1991 'Family history in developmental expressive language delay'. *Journal of Speech & Hearing Disorders*, **34**, pp.1150-1157.

Withers, P. 1993 'Making children a priority'. *College of Speech & Language Therapists, Bulletin* **489** (January) pp.12-13

Yoder, D.E. & Kent, R.D. 1988 '*Decision making in speech-language pathology*'. B.C.Decker Inc.

Ziman, J 1978 '*Reliable knowledge: an exploration of the grounds for belief in science*'. Cambridge University Press.

# APPENDIX

- A Transcript of a semistructured interview
- B Policies and procedures:  
investigation of the institutional context
- C Respondent validation of the initial data set
- D Collation of slts' rationales for questions and  
activities used during initial assessment of children
- E Example of SGN analysis  
Characteristics of the Priority Child
- F SGN Assessment Booklet
- G SGN Instruction Booklet
- H Completed SGN booklets
- I Transcript of debriefing discussion
- J Ratings given by slts on 4 case histories
- K Detailed analysis of changes made to content and  
structure of individual networks
- L Transcript of focus group discussion
- M Items and results of card sort exercise
- N SGNs in use:  
Characteristics of the Priority Child  
Characteristics of the Nonpriority Child

APPENDIX A  
TRANSCRIPT OF A SEMISTRUCTURED INTERVIEW

T = Therapist  
R = Researcher

The initial part of the tape was lost due to background noise. The first paragraph is therefore taken from notes. The transcript starts at paragraph 2

1

The initial picture from the referral note was one of a child with environmental delay, a child who was not for speech therapy. His initial chattiness confirmed that.

2

S: So I was a bit perturbed that I didn't get any early history, that was a negative thing, I've got a bit of a blank there.

3

When the foster mother mentioned the epileptic attack, that made me think there may be more to this than meets the eye so I play the side of being more cautious then. Then she mentioned the glue ear and the possibility of him having a conductive hearing loss.

4

Then I think about it positively so I think this is more a child for review because the conductive loss that had been undetected would explain the way he behaves or his speech and language.

5

That, with the environmental factors would fit in nicely with this sort of child. I hadn't considered sensori-neural loss, that the foster mother mentioned later, because of the physical abuse - that never entered my mind.

6

The play, I asked her about the play and she said it was rather solitary and he didn't mix very well with children but that again didn't raise any alarm, bells with me because in fact he seemed to play very nicely in the clinic and he's 3 years 5 months, he's had a limited experience of the nursery, but that hadn't come out at that stage. I didn't realise he'd been to the nursery before he came to the foster mother (FM), but she said he'd had very few toys so that fitted the picture that here was a child who'd not had experience of toys, so you wouldn't expect the play to be imaginative or whatever.

7

Probably, environmentally hadn't got many opportunities for play anyway. So that didn't alarm me in any way.

8

Again when she told me the family history, I was surprised how co-operative he was and how he related to her, calling her mummy, for example, whereas with that sort of history, I would expect (he's had three years of it really) a more disturbed child. So that was a positive thing again. I thought this child is quite well adjusted for what he's been through.

9

So again I think, no, you're not a child for therapy, you're more of a review child

10

That again fitted in with the picture, I asked about speech and language, although I got no history about when he began to talk or whether he babbled or anything like that. He'd been silent in the home (children's home) but he'd begun to chatter with her, so again I think this is an environmental thing - if we leave him alone, it'll be alright.

11

It was interesting that the FM was concerned about the intelligibility and not a professional and that he was the worst in the playgroup and then it came out that she ran the playgroup and I think she's got added responsibilities for him, almost more than a mother has. She wants everything to get right for that child.

12

That did two things: It impressed me about the mother - here was a mum who was going to do the very best for him so I didn't feel there was anything I needed to say to her really except to reinforce that she was doing a good job and I hope that's what I did, but I didn't feel here's a mum who doesn't really know what she's doing or what she's looking for.

13

She was very articulate about children, so it was the mum who'd initiated the speech therapy request. But I felt that's why she had done it, she was concerned about the child and her responsibilities.

14

She felt he could hold a conversation, I saw that as a positive thing

15

The alarm bell rang when she said he doesn't always fetch what I ask him to fetch so it was then that I decided to do the Reynell Comprehension but otherwise I may not have done it. If she'd said no he understands everything I tell him, then I probably wouldn't have done it.

16

I rather left the case history and launched into the Reynell because he was getting a bit bored

But again that sort of boredom is what I'd expect from somebody who's not sat down and played, but then you feel you've got to keep moving or you'll lose him and he'll want to go home

17

So I launched into the Reynell rather quickly. That didn't go according to plan in a way. I started in about the 2 years level because I thought OK we'll try him here

18

And then he threw me because he began to fail a bit and then at the end of that section which is section 6, it dawned on me that this child needed to look at me and then..

19

It was an attention thing and I think, that didn't happen initially because I was slightly flustered about it. I didn't quite settle him in a way that I should've settled him - that if it'd been a bit more controlled I could have got his attention more and this sort of thing.

20

I thought o-oh, we need his attention and then he began to succeed quite well. I did quite a bit of repetition but again the repetition was because I felt I had tested him unfairly. And that was confirmed with the yellow pencil so I asked him to find the yellow pencil and he was looking down and looking at the toys and he couldn't find the yellow pencil and it was the same with 'show me the smallest button', but it didn't work then and then I went back to finding the yellow pencil and he could do it.

21

So I felt that the comprehension skills would just about be within the normal range but its an unreliable sort of result and I would put that down... and that its very much tied in with his listening skills and his attention.

22

So that was one thing I thought - I'll tell the mum that, I would stress that to her. Perhaps it was something I should've stressed a bit more but the leaflet says that. He seemed to be using 4 word sentences, quite a lot of 3 word sentences.

23

Sometimes I couldn't understand him. Usually the initial word was something and then I got the gist of the rest about the bunk beds and this sort of... but when I paid more attention to him, when we were playing in the doll's house, he became more intelligible to me so an initial reaction to him there were words I didn't get

24

I feel really he's a child you can tune in to and then get 80% of what he's saying so that was a positive thing, although he's difficult to understand at playgroup he's not going to stand out as unintelligible.

25

Then I tried to look at the pictures in the book and I realised that if I pushed it he would have nothing to do with it. So I abandoned that and I abandoned doing anything like the Action Picture Test just to get a sample, but at that point, that formal testing was abandoned and I thought if I'm not going to lose him, we have to go informally so then I went over to the dolls' house

26

the sound system analysis wasn't very good really but it seemed to be velar sounds and some fricatives that were immature and the clusters, but again I didn't feel it was a deviant sound pattern or wasn't open syllables. It was just pretty normal.

27

Then in my mind I had made some decision about him and he's definitely a child for review. there was nothing in my mind saying otherwise and I thought he's under the hearing clinic, that's sorted

28

If he was going to school in September, which he just misses, I still wouldn't do anything about him so it was quite a definite decision on my part. To have therapy and be going to school in September you have to be unintelligible or have a very deviant pattern and then you go into a group and you wouldn't get a lot of therapy anyway

29

Resources come into that but not in his case, it wasn't resources. There wasn't a resource factor because it was quite clear in my mind. With another child it would be a factor what I could offer him.

He's going to nursery. We're thinking of putting a therapist in there on a regular basis in September. I know that so there's some forward planning of resources there - he'll be somewhere we can keep an eye on him and there's not going to be much need anyway.

30

Because you were here, that influenced me a little bit and I did think, I'll perhaps see him in July - I'll look as though I'm keeping more of an eye on him and then I thought, that's stupid, there's only a few months to July, we'll make it September and it'll just be a review but I think he'll make quite a lot of progress

31

R: How much better would he have to have been for you to say you didn't want to review him?

T: Not much better really. On the whole I tend to review, but I put in the notes that this child might be within normal limits in that time so when the appointment goes out I add a note to the appointment saying if you're no longer concerned will you please cancel.

32

R: will you do that for him?

T: Yes. I'm slightly concerned about that because I'm not very good at predicting. That is the problem, so I've had children say at 3;06 and they weren't using clusters, that was all and I've said, I think we'll discharge him and if you're concerned, come back. I think he's fine and then 2 years later they've come back and its taken sort of 18 months to sort out these clusters and its only because he's 6 or 7 that we're bothering about it. But there was a child I'd discharged.

33

I play it slightly cautiously and I tend to put the ball in the parents' court - its their decision. I've had other children with the most appalling lateral /s/ that made them almost unintelligible, that I would try and treat and the parents say they're fine so its very much the parents' decision.

I don't feel this was the parent's decision. This was my decision, but I thought she was quiet happy with it.

So the parents' feelings and their attitude towards speech therapy in general - some of the decisions are influenced by that.

34

R: Can you now list the things that in general you take into account in your decision?

T: The parent's view and the parenting skills as far as I can assess it

Whether they're at a playgroup.. let me do this a bit more systematically..

I think first of all the referral note because often I've not made a decision on the referral note but I've made some sort of thing in my mind on what people have written.

The medical history I think

Hearing definitely, which is interesting because there 's very little evidence to show that having a conductive loss has any effect on speech and language, in fact the project I did on glue ear babies, none of those children come in for speech therapy, so in my mind I know that if you've got glue ear when you're a baby you're probably going to be fine but I think we haven't really monitored glue ear that persists, we haven't really sussed that out so I play it a bit cautiously

36

The family history and that's a funny thing I do there because if they've got a family history of speech and language delay, I tend to be less concerned and especially if I've seen the other children because often the younger child in the family, the worse the problem, but its often some sort of pattern and also it influences the mother(M)'s judgement of the children, the M's perception of the children, if she's had other children with speech problems she tends not to be so alarmed, not so anxious.

37

Then the assessment, I suppose that is really the biggest factor and I actually have to have some facts and figures, but I know a lot of therapists don't but on the whole, usually comprehension especially, I have to have some idea of that and usually do a Reynell and in this sort of assessment I'd probably do an APT because its quick and I always do a phonological analysis but its always - I would never do the Edinburgh - its always very short and sweet.. but the assessment would be the main stay I think.

38

I suppose coming out of that is the severity and type of problem. Having said that there are other things.

I suppose it becomes more apparent with older children

What I'm thinking is, I've got a 12 year old boy who's got a lateral /s/ but he's been beaten up at school because of his lateral /s/ so although its not severe I'd take him on

39

and the same if its a preschool nonfluent child, I'd take that child on. Now I know some therapists never see them but the nonfluent child I would see them, review them invite the parents to an open morning we do. that's only because I think I might prevent something, but that's a very personal thing. I was quite shocked when therapists said "what are you doing seeing nonfluent children", I said, "I always see them" and they said "oh no don't bother, they'll grow out of it". I think we can do quite a lot really.

Have I said whether they go to playgroup?

R: Yes. That would be a positive thing would it?

40

T: Yes and a nursery would be even more positive but again that's not based on any evidence at all. We've no evidence that its better for a child. Obviously its better if they're in an environment which..

Again if the child's with a child minder that would be an influence. I would see that as a positive thing, if the mother was having lots of problems, say she's depressed or they were in bed and breakfast accommodation and the M said "oh I've got him with a child minder". In fact we sometimes arrange to put them with a child minder

42

Anything like that which I thought the family needed support and they were getting it I would see that as a positive thing and almost part of my role. So for example, the health visitors brought me forms for the B charities trust because we're trying to find some charity money to send someone to playgroup but I see that as part of what I do.

R: so one of your management options would be..

43

T: that would be a major management factor

R: anything else?

T: must be

under the assessment, there are all sorts like listening skills of the child, whether the behaviour is normal, how well they co-operate, whether they look at the picture books, whether they sing, hosts of things, their play,

45

and I look at them physically and if there's any physical things - so for example I've got a child at P who I think motorwise is immature, anything like that they're going to the CMO. I usually say to M we'll arrange an early 3;06 years check or anything odd about their behaviour that's an assessment skill.

R: we need to talk about outcomes

46

T: shall I talk about what I could do with them?

They could be either discharged because I thought there was no problem.

They could go on a year's review - those children I expect to be within normal limits within a year so they would definitely get a note saying you decide whether they're alright or not.

47

They could go on a 6 month review or they could come back for a further appointment - someone I wasn't happy with the way it'd gone or someone I didn't quite know what the matter was with them

Those would be the decisions I'd make and they could be reviewed in say 2 months time and they could be children who would be nonfluent

48

So at that stage I'm actually sorting them into reviews or those I'm not happy with so the reviews I'm basically fairly happy with. Now the other ones I'm not happy with, they would

come back for one more session and at the end of that session I would either give the M some therapy ideas which I would check out so she might come back in a week or a fortnight or a month or even two months but there would be some checking how she got on, how he responded to this that and the other. The nonhappy ones, that's on the whole what would happen. Or I might decide to put them on review. I might reassess and think, well, no, you're not too bad, I'll review you in three months.

49

Everyone I see will get a hearing test unless they've had one recently, so that would be routine.

50

With the nonhappy ones I might go to the health visitor, suss out a bit more, have some management plan like these children we're getting the charity money for, that's been very much going to the health visitor saying, look, what can we do for these. I might refer them to the CMO. They tend to be children who are either very odd under three or any 3 year olds I've got who've got say 6 words - that's becoming a routine, because we've got a very good CMO and we come to some decision between us. If they've got beyond three and its like a developmental delay, I get them seen medically. Actually, its going to change with the GPs but I still go back to the CMO.

51

So sometimes I'll alter who they see as a medical officer. So they would perhaps have been seen by a trainee and I'll make them be seen by a SCMO

I may go to the HV because of behaviour problems. If its an atrocious behaviour problem I may bring up referral to a clinical psychologist early on or there may be some discussion with the HV

R: Subsequent referral like that to a clinical psychologist would always be done in liaison with the HV?

52

T: No, no for example, the other day I had a child who was alright to begin with, I know him quite well and then it all erupted. Toys were everywhere, he came up and kicked me on the shins and then he hurled everything around the room and he was awful and mum was desperate and she said this is what he's like and she's actually a very controlling mum and she said he's doing this all the time and she said he's walking along the street and he'll hit children in the face, he'll just go wham and so I say is this a problem and she said I think its becoming a problem so I spell out the options and if she says well yes I would like some help then I would refer him and I'd go the HV and say this is what I'm planning to do. So sometimes I go the HV and sometimes I just decide

53

On the behaviour thing, if the mum doesn't want to take on board the psychologist thing or if its early days, I point out other options, the next option would be coming to talk to one of the HVs.

54

So if anything comes up, say if mums desperately unhappy or they've got housing problems or she breaks down in the clinic then normally I go to the HV after that and say keep an eye on this one

or if I had a child... I once had a child at P and the mum said "I'm going to kill him" and she broke down and said I just can't stand it any longer. I said I think you'd better go to your GP this afternoon and I fixed up the appointment. She saw me at 11 and she was with the GP at 2.



55

So if its like that and I think today might be the day. I do something about it  
Its very fringe speech therapy but I don't just see it as speech therapy. I probably have a  
wider brief than most people I know. Speech therapy isn't just talking, its much bigger  
than that

56

So there's a lot of liaison with the HV. On the whole I don't refer to family therapy unless  
theres a consultation with the CMO. Family therapy involves a psychiatrist here. I tend to  
go to the clinical psychologist.

Nursery school - I do a lot of liaising with the NS  
Playgroups, trying to fix them up with a playgroup

57

Time sponsored childminding and playgroup. Music therapy is an additional wonderful  
resource. Sometimes I invite them to parent groups. So that's an additional to therapy. I  
don't regard it as therapy as such but its more of a social thing - that they meet other  
mothers

R: In terms of the children you're not happy with, is there anything YOU might do? Do  
you take any children on for regular therapy?

58

T: Yes. After two assessments/ sessions, I would take somebody on and what I would  
tend to do is give them some therapy ideas for two months perhaps, that may not be  
every week, it may be every fortnight, what I think the mum can cope with and I mean  
cope with in a sense that.. I think if parents think 'speech therapy for the next four years'  
they think 'no thanks' whereas if I say we'll see you for the next four Mondays and then  
we'll review it and see how we're getting on so its very much in little blocks

59

Next term we're actually going to formalise that. We're only going to do therapy for the  
four weeks in the middle of a term. The rest of the time we'll be doing reviews. So it'll be  
more formal.

60

At the moment its very hit and miss when we fit it into the timetable but I feel that's  
creating stress for the therapist whereas if its formalised you can say I'm sorry but the  
next waiting list is in June or the next review clinic will be June, full stop, so we're trying  
that as an experiment.

R: You mentioned at one point that resources constrain your management options. Are  
you aware of any other non-clinical influences. Would you confess to any biases you  
have or influences that are more administrative?

61

T: No, there's no-one I wouldn't treat. I've got a 13yr old aphonic and I haven't treated  
an aphonic person for 17yrs so I'm slightly apprehensive, but what I've done there is, the  
psychiatrist is going to work with me and I've rung up M at SH and said I want a bit of  
support and she said that's fine. That's a challenge, but I don't think, oh no, I can't touch  
a voice case.

62

I have done some rather fringe things. For example, I ran, I'm going to run another one,  
a social skills group with the psychologist and in that we've got children who're silent in  
school, so its rather fringe and I keep rather quiet about it. We've had children who do  
speak but very occasionally so I suppose they're not truly elective mute and I've put  
stammerers in with them,. So that's a little experiment we're doing. I think on the whole I  
perhaps view speech therapy wider than most people so I tend to dabble in social things.

If someone says we haven't got any clothes then I'm not amiss to going and finding some clothes from somewhere or if they say my house is damp then I don't ignore that, I'd say shall we go and have a chat with the HV about that so its a very wide thing but I think that's due to where I've worked before

R: Are there any other kinds of restricting constraints on you?

63

T: there is in the assessment definitely, because for example, I wouldn't know how to do a LARSP so that never enters into it. I was terribly relieved when the Bus Story came into fashion because I've used it for years - that was wonderful

64

My phonetics are absolutely hopeless so if they've got a very deviant pattern, this is a great challenge and I have to tape them and get my Gimson out. Actually a students given me a little chart now as the signs have all changed haven't they and I've actually had some coaching in vowels from other therapists so there s a big gap there and also linguistic analysis. I am trying but its got to be pretty serious for me to get to grips with that and I think that if I didn't have so many children then I would probably do it but theres a great wadge of knowledge there that isn't accessible to me

65

I had a very sobering experience. I took somebody to Reading. I didn't know what was the matter with her and I thought this is stupid, I'll take her to reading. It was awful. I didn't know what was going on. The reassuring thing was that the therapy was alright but the middle bit I didn't know what was going on. After that I felt very depressed so I think there's a big thing about the assessment. I stick to what I know and I make judgements on that but it may not be up-to-date or I maybe not looking at things that therapists look at now-a-days. So for example, pragmatics - I probably look at them but not in the depth a younger therapist might

66

Something we haven't thought about is past children you've seen, that you think, oh he's similar to so and so. Again I treat that with slight caution because I think our prediction skills are very limited. That's why I tend to put people on 6mth review because I'm seeing what happens to you in 6mths. Sometimes I say that to mums - I can't really tell from a one-off but if your bring him back in 6mths I've got some idea of what's happened

R: so you're looking at progress over that time?

67

T: Yes and that's a big factor I think. So the child who seems to be ticking along, I'm not bothered about, but the child who seems to be the same as he was 6mths ago I think what's going on here.

(Break for coffee)

R: You asked about birth history. Why?

68

T: I'm really looking for whether they went in SCBU - possibilities of the child having anoxia or the m had problems in pregnancy. Its really looking for minimal brain damage or general developmental delay or minimum CP.

69

Something I didn't ask this child which I normally would ask is about the feeding, about difficulty feeding. I ask usually, did food come down their nose and that's usually a standard question and I normally ask can they drink from a cup or can they eat but I didn't do that but that would be fairly normal and often I pick up that they're faddy eaters really more than anything.

R: why are you interested in those things?

70

T: I think they're alerting me to the possibility of a general delay or a fairly major problem. I'm looking for a medical reason for the delay, if medical's the right word, rather than a general delay that we can't specify.

R: How does that influence your decision?

71

T: It doesn't influence me at all. In the end it doesn't make any difference but I suppose I'm looking for some reason.

I usually ask when did they walk, I don't ask much more than because often they don't know, they can't remember when they crawled etc. And that's a general delay thing I'm looking for.

72

I ask have they been in hospital and that's for two things. One's a medical thing, have they had epileptic fits, that's a warning sign to me or if they've had meningitis I'd think have they got a hearing loss, have we checked that, so its a medical thing and its an emotional thing so I usually ask were they upset when they came out of hospital so I'm looking for emotional upsets like this child this morning

R: Would it influence your decision to take them on?

73

T: Yes that would. If I felt there were emotional problems that were now being resolved, then I would be less inclined to take them on. So for example, I've had a child with a severe language delay, three, using single words, but he'd been in intensive care twice and had nearly died and had been in hospital about 9 times altogether and the mum was very anxious about asthma attacks he kept having but actually things were settling down now and you could see the child changing emotionally, becoming happier so when I heard that I said to mum going to the hospital is disturbing for children and its maybe halted him a bit but he's going to make up ground. So I felt that was a family disturbance that may account for the language delay.

R: So you're saying that if there are things in the history that account for it, that are now sorted out, that may influence you in a positive way.

74

T: yes. It obviously wouldn't if the child was so severe as to warrant further investigation or there was something very odd about the child but it is a factor.

R: You then asked how long he'd been with the FM. Why was that?

75

R: Yes, 2mths really. Just to establish a time scale. So how long had she had him, how long had her influence been at work. Not very long - 3 months. I don't think thats very long and how long had he spent with his family being abused etc. So in fact he'd spent most of his time - 3yrs 2mths with his family, a month in care and 3mths with his FM, so looking at his life, the biggest influence has been his family, so it was to get some perception of the time scale. So if she'd said to me he's been with me 18 mths, then that would have been a negative thing. So I saw being with her as a positive thing.

R: If he'd been with her longer and presented in a similar way would you have been more worried?

76

T: I wouldn't have been worried because of the way he was, but if he'd been worse and he'd been with her longer I'd've been more worried and by longer I mean 6-9mths. So its the environment really and the emotional stability that the child's had.

R: why is that an important consideration?

77

T: because if a child isn't happy, that can impede his development, plateau maybe. I think it can be rectified easily. I think that's got some basis in research work. I noticed it most and that is backed up by research, mothers who're depressed. So with m's who're depressed, I try to do something about them being depressed well \_ I try and influence the environment by going to the HV but its something where I think that if M feels better and starts joining a little club where she meets other mums who're similar - the child's in a nursery, she'll feel better and the child will blossom but I keep an eye on him in case there's something else - something underlying that we don't know about really. You've got to give them a chance in the best environment and I try to create that for them whether that's playgroup or nursery and then I look at it again and see what's happened when its been alright for a year.

R: She then went on about the epilepsy and talked about whether or not he's been on medication and you asked if he was on any other medication - what were you trying to get at there?

78

T: normally I wouldn't ask that but I asked that to see whether there was any other medical history she actually knew, because we don't know very much really so she might 've said yea actually he's got an inhaler or something like that or he might've been in hospital for that or whatever -it was just really to try and suss out a bit more

R: an you asked about his health since he'd been with her

79

T: generally I'm looking for earaches

R: why are you interested in that?

T: because of this hearing loss of dubious... I can only say that I've had so many children that were unintelligible, say at 2;06 and had those famous grommets put in and were cleared up in 5 months so I can't see that it hasn't made some sort of difference but its a tricky one.

R: you then asked about the brothers and sisters. why did you do that?

80

T: I always ask about that. Sometimes its only to get the children's names so I use the names in conversation and its also putting him in a family context so where are you in the family but its not really of great importance. Interesting there she never mentioned there the brother who was deaf, that came up at the end and I suppose I asked her, I may've asked her do you think anyone had speech problems but I didn't go on and ask have they got deaf problems. That was a silly thing really. So that may not have come up from what I said and I would then not've thought about following that up

R: you then asked about the abuse

81

T: not too much and I don't put anything in the notes because shortly our notes are going to be accessible to parents and I'm a bit more wary about what I put in.

R: you were nonetheless interested in that, why were you interested

82

T: this goes back again to if the child's not happy or is being abused then I think I wouldn't expect language to develop in a normal way. I don't think it would be deviant but it might be stationary for a while and that sort of silence that he didn't talk very much in the home I think would be very characteristic a sort of withdrawn and then you would expect more behaviour problems which I don't think I mean they're there a little bit from what she says about the playgroup - doesn't mix very well but they're not very gross behaviour problems but if he has them I wouldn't be surprised.

R: and in terms of how that influences your decision, that's going back to what you were saying earlier..

83

T: yes, once he's settled I'd feel happier

R: so given that kind of background, what he's presenting with is not unusual and therefore nothing to worry about

T: yes

R: you then talked about the results of the hearing which she said were OK which we've talked about. You then asked her if she's got another appointment

84

T: yes that tell me what the hearing clinic really said because she was a bit vague 'cos she said of they think he's alright and then she said he's got a conductive loss so I was getting two messages there so not I realise its because they're wondering if he's got a sensory loss but I didn't realise that at the time so I usually say first of all I check that it was in this room because sometimes the HV done it and that doesn't count but they have to be seen by Dr R. If they've been seen here in the last 4-6 mths then I don't bother but any later than that - if they were seen a year ago then I haul them back in again but that isn't standard. Its just that I recheck hearing unless I'm quite certain. And now I know they've got another appointment and now I know for that she's in the system. I know that if they give her a 12 months appointment, they're not that bothered, but 6 mth they're keeping an eye on him so there probably is some glue ear there and she said they've asked to find out whether there was glue ear in the past so they may have looked at his ears and there's some scarring.

R: so you were just trying to suss that whole area out and clarify it

85

T: yes and again it doesn't worry me, particularly 'cos I give her information which she's probably doing anyway so I think I've told you what to do, she's a clued up mum so she'll take it on board. Another mum I might do it all much simpler, take longer over explaining what she had to do. I know they're in the system so somebody is keeping an eye on them

R: then you asked about his play. You asked does he play like other children his age. Could you explain what you were after there

86

T: I was after really how the mother saw his play. I think on the whole Ms know whether their child is different to other children. You get the occasional ones who don't but on the whole Ms know so I take the M's view and she I thought was very articulate about his play, she said it was limited but in fact he was quite imaginative I thought and she said well he didn't have many toys before and to me that was a positive thing - he hadn't had that experience and sometimes I ask that - have you got lots of toys at home or does he look at books with you, will he sit and loo at a picture with you

R: so you're looking for the amount of experience of play that they've got

87

T: yes and the standard of play, where he is developmentally playwise and I'm looking for abnormal play - an abnormal play would be obsessive for example.

R: why is that something you look at?

T: because I would see that as a negative thing if the play was delayed or abnormal in some way, then I would look more closely at that child, so they would definitely have a Reynell. The play would be quite a big influence and sometimes if I notice that play in the clinic wasn't very good then I would go on to the symbolic toy test and that would be the first thing to do.

R: why does that act as a negative thing for you?

88

T: because I think a lot of severe language disorders are linked to abnormal play and also because the link between language and symbolic play has been fairly well established and I think that the therapist can start working on play to influence the language that can be a starting point, so if a child had poor play and poor language I would start with the play and that would be the first thing I'd give the M to do. I was also very influenced by Roy McConkey's research with mentally handicapped children where they just worked on the play and the language improved so I suppose that was quite a big influence really. Asking the mum goes alongside what I see so I'm looking at how he plays

R: at that point you say, was there a history of later speech and language in the family. Can you explain that?

89

T: well I think there's a genetic basis to it that we don't know about, that's probably a personal prejudice, that's one of the factors in why children have problems so if there is a history I tend to think of that as a positive thing - I'm not so worried.

R: why is that?

90

T: I suppose I think I've got this bias that its genetic and this child will follow on in the same pattern. That doesn't mean to say that I don't look at that pattern. I've seen lots of families and I've seen 3 of them and long comes number 4. Now the other day I saw somebody and I've seen 3 of the boys and along comes number 4, his pattern is very deviant and worse than any of the others and I said to her do you think he's the same as the others and she said Oh I think he's much worse don't you, so I said well yes actually I agree. Now he's coming for therapy. On the other hand I saw a family the other day, the third boy, the other two had had language delay, the third boy had a very severe language delay and the fourth boy isn't so bad as the third, the mother says he's great and I tend to think that I mean I know he's delayed but I'm much more relaxed about him. We're doing everything we can for him but I'm not going to say to the mum look he's 18 mths behind

R: you're saying it influences your perception of severity but not what you'd do?

91

T: not the outcome. It doesn't influence the outcome, but it influences my perception of what may happen, I don't know what you'd call that

R: the prognosis perhaps, you've got more idea of what the prognosis of the child will be and therefore you're less concerned?

92

T: it may be that I'm looking for a reason again. Part of all this is for me to look for reason. If I can identify a reason then that maybe what I see my role as, I may not articulate that to the parents, but that's what I'm doing, that I'm actually looking for why are you delayed and most of the time I won't come up with an answer but perhaps that's what its to do with - not what I'll do with the child eventually but some sort of searching process. That its perhaps for me more satisfying.

R: you're saying that it doesn't necessarily influence our decision, that the decision still rests on the severity of the problem

93

T: yes it would really

R: you then asked what he was like when he first visited

T: the family?

R: yes

T: that was to establish a baseline , to find out about his language development three months ago and again I couldn't quite establish whether he had quite a lot of language and had become emotionally... silent or that he actually hadn't got much language

R: why are you trying to establish a baseline?

94

T: to see how much progress he's made since that time and to find out what he was like up until that age and to compare that with normal children

R: why are you interested in progress?

95

T: 'cos I think its one of the most important factors in whether or not you take a child on for therapy or not is the amount of progress they make within a specified time because if they seem to be making natural normal progress but its delayed... delayed progress which is following a normal pattern whether I take them on or not, so if they seem to be making progress on their own I tend not to see them, I'm really looking for lack of progress or some deviation some abnormal pattern or the severity of the delay.

R: How would you define deviant progress?

96

T: Say a four year old who's got open syllables or a child who's sound system is very inconsistent or a child who's using nonenglish sounds

R: anything of the language side?

T: now you're opening Pandora's box

R: a couple of examples

97

T: somebody I saw the other day who was fascinating who did what I call abnormal verbal play. I showed her pictures, if it was a car she'd say 'vetchacar and then I 'd show her a basket and she said 'thatsabat' and then I showed her a chair and she'd say 'techachair'. It was very repetitious and stereotyped but they were altered every time there was a slight alteration and it was said in a singsong way

R: and the spontaneous progress - how would you define lack of progress as opposed to spontaneous progress. How long would a child have to be stationary for you to say there was lack of progress?

98

T: 6months or with a comprehension say 3 months. So say someone came and they couldn't do 2 word activities at 3 years old and I gave the mum some ideas and she came back in 3 months time and she was still at that stage hen I would be quite concerned so I'd probably monitor it more closely after that.

R: you then asked whether she was concerned, we talked about that a bit before, why do you ask that question?

99

T: Because I think although I've no evidence for this, that on the whole if mums are concerned there's often a reason for the concern I suppose because I feel that mums have some knowledge of their own child and I think they do compare them all the time to children of the same age I think that happens naturally. I do think you come across the odd mother (M) who has no concept and often they're mums who have no contact with children but on the whole the M's instinct is very valuable and often that's been proven by my own experience and the mums said I think they're alright really and perhaps I've said we'll just keep an eye on them and then in the end they've been alright.

R: so how does that influence you, for example, if they're very concerned?

100

T: yes I would think that would influence me to be more careful with the assessment - I'd be more thorough so that's a sort of prejudice isn't it.

R: if the M is concerned and after your assessment you're not particularly concerned as opposed to you and mum not being concerned would there be a different outcome?

101

T: no but I would try and explain to M that I'm not particularly anxious maybe that not true I may put the review shorter than I would've done

R: what about if you're both concerned?

T: yes that would influence it - I would shorten the review. Now if she isn't concerned and I'm not concerned I would lengthen the review because I would bias the lengthening of the review because of the caseload.

R: what about if the m is not concerned but you are very concerned?

102

T: that doesn't influence the outcome. I still bring them back and in fact I tend to bring them back more 'cos I sort of want them to see what's going on so they come to some understanding but I have to do that by building up some relationship so sometimes it happens over quite a long period for example, if I want them to go up to W House - again quite a lot of discussion with the HV how we're going to do it but a lot of it I don't make decisions because I'm building up a relationship with the M to break something to her, not 'I'm going to tell what's wrong with her child' but perhaps we may need to see another specialist speech therapist

R: your question 'was it your idea to see a speech therapist' was part of that process?

103

T: yes, finding out really what the M feels

R: what sort of things, how would you define M's concern?

T: she actually says she's worried or concerned. I'm trying to think whether its her behaviour in some way - probably some nonverbal cues. Yes some mums are very laid back. Sometimes they'll say they've been waiting for an appointment or couldn't they be seen sooner sometimes the concern is expressed as they leave so I try to give them some space at the end where we've finished the business and sometimes things come out then as they're leaving.

104

Sometimes I say but I didn't to this M because she's not his natural M I sometimes say something in a roundabout way about feeling guilty and that's fairly standard that I'll say some vague thing about what I think is causing it and I'll say its nothing to do with the way you talk to him because a lot of mums bring that to the clinic and that they haven't talked to him in the right way or theres something they haven't done so I usually pre-empt that and say something. I suppose its sort of relief of guilt really. That's only something I've learnt that because mums have said to me I feel very guilty I should've done this shouldn't I. So I like to get that out of the way.

R: that's quite a good place to stop... discussion about minute to minute decisions...

T: that was true of when I asked about the books because I asked does he sit and look at books 'cos I was trying to find out how well does he concentrate, is he interested in books for example and she said oh he tries to look at his sisters books but going off, not what I wanted to know so I had to come back and say what about picture books.....discussion of the skills of interviewing and ability to form relationships in an interview...

T: we've done a counselling thing and I've done a counselling course at the university and I found that very difficult because actually I'm out to get information and it was very



hard to explain even to other therapists we're so biased to finding out information that its hard not to do that in a way especially if you've got a time limit.

R: but the goal of your assessment is to make a decision

T: yes and to gather as much information as I can in the shortest time

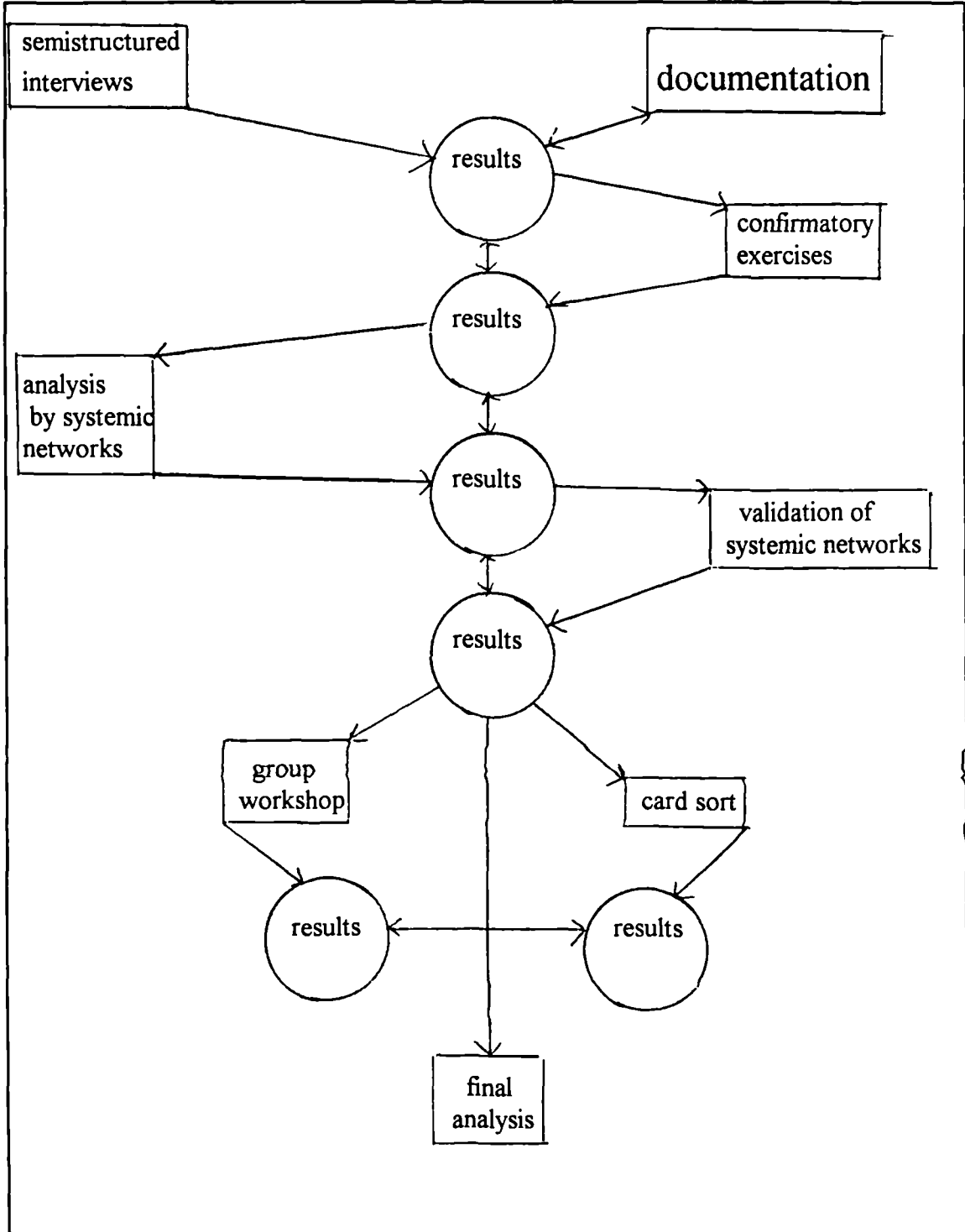
R: it is a very skilled thing and evaluating that information as it comes in - is this what I want, is it clear enough and if it is clear enough what influence is that going to have on my decision.

T: there must be quite a big bias when I think about it with the sort of children I've seen, mustn't there

R: that experience enables you to predict what sort of questions will get the right sort of answers

T: yes I think that's true and I think the more children you see, the bigger the bank of knowing what children are like. I think there's other factors like how well does a therapist get on with the parent or the child 'cos I think if you don't get on you don't get the same picture.

**APPENDIX B**  
**POLICIES AND PROCEDURES:**  
**INVESTIGATION OF THE INSTITUTIONAL CONTEXT**



## B. INTRODUCTION

In the process of the interviews with the first sample of slts, the influence of aspects of the working contexts was mentioned. A small scale investigation of documentation was carried out to follow up these comments. This appendix describes that investigation. SLT departments in one regional health authority were asked to supply documentation relating to the selection and prioritisation of preschool children for therapy. The documents were examined to identify potential influences, at an institutional level. The results, which show varying levels of explicit control of prioritisation procedures affecting all stages of the management process, are discussed with reference to the broader working context of the new NHS.

### B.1. AIM

To investigate whether or not institutional control of and influence on slts' decisions was apparent in the documented policies and procedures within SLT departments of one regional health authority.

### B.2. BACKGROUND

The qualitative approach taken so far in the study has tried to identify concepts and theories which are associated with and grounded in the action of slts as they assess children and make their management decisions. Yet there is a level at which activity cannot be understood fully unless the institutional context of that activity is examined. (Layder 1993) With respect to decision making, the social and institutional context is seen to have an influential role. As noted in the literature review (section 3.4.1), Hamm suggests that the cognitive mode employed in decision making (intuitive versus analytic) can be related to or influenced by the prevailing institutional culture. Slts, in the first set of semistructured interviews, when asked about nonclinical influences on their decision referred to departmental policies and procedures as well as to resource issues. Examples of their comments were given in figure 7.6 and are summarised here in figure B1.

|   |
|---|
| Departmental structures<br>eg, roles of slts<br>special clinics           |
| Referral policies determining access<br>and therefore affecting caseloads |
| Resources available   |
| Intervention policies   |
| Perception of slt role & effectiveness                                    |

**Figure B1 Summary of nonclinical influences identified by slts**

### B.3. PROCEDURES

The SLT professional heads of service for one regional health authority were contacted via a regional forum that convened regularly. At one of their meetings, the overall aims of the research were set out. The specific aim of this stage of the project was given and they were asked if they would supply relevant documentation from their department.

Examples were suggested such as procedural guidelines, standards of care, contractual specifications, policy statements. No requirements were made for any particular documentation and anonymity was assured.

#### B.4. RESULTS

Of the departments participating in the meeting, 77% supplied documentation. (Numbers are withheld to protect anonymity)

##### Types of documentation

Most of the documentation referred to children's services as a whole rather than to preschool children in isolation. Four main types of documents were provided - policy documents, standards of care, reports and procedural documents. These are shown in Table B1 along with a summary of the evidence they show of institutional influences on the selection and prioritisation of preschool children for therapy. These influences have been analysed below with respect to the stage of management they affect, but first a brief comment is included about the range and nature of the documentation in order that their potential influence may be more fully understood.

| Type              | Influence   |
|-------------------|---|
| Policies          | Some general principles, guidelines for prioritisation                          |
| Standards of care | Specifying slts management of a case, waiting times, hours of treatment offered |
| Reports           | Showing range of services, problems and successes                               |
| Procedures        | Indirect reference to prioritisation, lack of resources                         |

**Table B1 Documentation types and institutional influence**

**Policy documents:** These varied in their level of formality and in their scope. Some covered a particular aspect of a service such as "reviews"; others provided hierarchies of client types guiding the slts' prioritisation decisions; others gave broad guidance as to the range of factors to be taken into account.

**Standards of care:** These documents were often very similar, some being taken directly from the professional College quality standards literature (CSLT, 1991). Some documents covered all stages of the management process for all children whilst others focused on a particular stage (eg, referral) or a particular client group (eg, preschool children in nurseries).

**Reports:** These included the departmental annual reports, often with reference to service specifications demanded by purchasing authorities.

**Procedural documents:** These included standard letters to parents, referral procedures and forms as well as case management audit forms.

### Stages of management

The documentation referred to four main stages during the management of an individual child: referral, waiting period, assessment and management planning. Each of these stages is now presented with a description of potential influences that were identified in the documentation. These are summarised in table B2.

| Stage          | Influence  |
|----------------|--|
| Referral       | Mostly open access<br>Some guidelines provided to reduce referrals   |
| Waiting period | Specified with some differentiation for some client groups   |
| Assessment     | Open ended<br>Areas indicated but not prescribed<br>Prioritisation principles require categorisation of children |
| Management     | Individualised in most cases with some control of time allocation  |

**Table B2 Management stage and institutional influence**

**Referral:** All departments had an 'open access' policy, ie they accept referrals from any source, (not just medical) including families. However, some departments produced referral guidelines which made reference to a prioritisation policy and which imply a narrower referral policy than might be the case if ideal staffing resources were in place. In one instance, copies of standard acknowledgement letters sent to parents informed of a prioritisation policy in that intervention would only be offered to the most needy children.

**Waiting times:** Standards of care specified maximum waiting times before initial assessment. In some instances children with dysfluency or with voice disorders were given priority over children with speech and language delay through a preferential waiting time (eg two months instead of three).

**Assessment:** No time limits were placed on the assessment length; standards of care usually indicated that assessment was assumed to be an ongoing feature of the management of a child. One department specified the maximum number of children who should be seen for initial assessment in a single session (half a day), which was less than that given for regular treatment.

Generally standards of care gave a wide remit, requiring the involvement of parents and carers, suggesting that different settings may be needed (eg group versus individual, home versus nursery) and that different types of procedures might be used (eg informal assessment, observation formal testing). Standards set out in 'Communicating Quality' (CSLT, 1991) have been adopted in some instances. These provide an extensive list of the skills to be observed 'where appropriate'. So, although these standards state that the same outline procedure should be followed for all children, slt judgement is involved in the precise choice of assessment process.

Specified goals of assessment for these standards include the determination of "need, appropriateness and timing of intervention.. readiness and ability to change" (p.159, CSLT, 1991).

One department provided a slightly modified version of the Withers (1993) scale which provides a priority score at the end. The scores have been linked to three possible management options.

Some departments carry prioritisation policies which show hierarchies based mostly on severity and diagnostic type. The assessment of a child must therefore allocate a child to one of these categories. One of these hierarchies includes contextual influences such as parental concerns and a reference to the potential effectiveness of intervention.

**Management plans:** Quantitative standards were evident with respect to the administrative management of a case, for example how soon after assessment a report should be sent. The intervention itself is described as an individualised process and following CSLT standards "based upon assessment findings" (p.160, CSLT 1991).

Nonetheless, documentation from some departments did refer explicitly to a process of prioritisation. However, the level of control of how "prioritisation" may be interpreted or implemented by slts varied: so for example, the levels of intervention associated with a priority hierarchy may not be specified at all; in some instances broad guidance is given on the type of intervention associated with different levels of priority - discharge, advice, a programme, a review or treatment; at the other end of the scale the severity, disorder type and age of child are matched with the number of assessment and intervention hours to be allocated. Some departments reported a policy to reduce the "review" category of intervention, moving towards a policy of more active case management in opposition to discharge, but where discharge is not seen as final, (ie, re-referral is encouraged). Annual reports made references to slts' dissatisfaction with the level of input that was offered in some cases compared to the perceived level of need; these reports suggest a considerable variation in the types of service available and how that might be organised, for example, into a specialised preschool group for children with phonological disorders.

## **B.5. DISCUSSION**

In the first round of semistructured interviews, slts indicated that their decisions about the prioritisation of children were affected by aspects of the working context. In particular, they pointed to departmental structures and policies, resources and perceptions of role and effectiveness. By checking departmental documentation, this exercise sought to check out whether such influences were part of the explicit institutional influence on a slt.

Documentation did indeed reflect institutional influences and control of the selection process though the nature and scope was variable across the region. The underlying source of these influences was not always possible to detect from the *documentation* although some comments are made about this here.

Generally influences and controls were evident at each stage in the management process, controlling access to services, waiting times as well as assessment and intervention. It seemed that although ideals of open access, individualised assessment and treatment were still prevalent as the underlying principles of SLT departments, prioritisation

policies were being superimposed. In some instances it was clear that these were the result of inadequate resources relative to the demands for service. Alongside this however, it is likely that the issue of equal access is being tackled. Holliday (1992, p.99) comments that prior to the NHS changes, access to health care was neither equal nor open, nor a particular cause for concern; now it is a far more contentious issue. He argued that old paternalistic criteria which determined access were in need of replacement.

Some SLT heads of service it seems are taking this on board in a move towards making explicit the criteria by which children are prioritised. However, differences between departments in the range of services offered means that across the region, access to services may be extremely variable as departments respond with initiatives at a departmental level.

Departments developing prioritisation criteria used severity as their main feature. Other features such as the child's context, diagnostic descriptions, educational statementing and potential effectiveness were in evidence but not used uniformly around the region. Furthermore, although severity was regularly used to indicate a need for higher access, precisely how that higher access was implemented was variable. So some departments gave no indication of what it means for a child to be prioritised whereas others showed the time allocation for the various groups of clients.

Furthermore, departments have developed different types of specialist facilities which automatically give differential access to certain client groups. For example, some departments have specialist groups for phonological disorders; such a client group must be in fairly equal evidence across the region, so the reasons for this particular facility in one department is likely to be related to factors other than client need. Staff resources and interest or expertise and the geographical feasibility of group work seem possible explanations.

## **B.6. CONCLUSION**

In conclusion, the overall standards of care presented by the various departments reflect an idealised view with slts allowed the flexibility to make individualised management decisions based on client need, policies and procedures reflect the NHS trend towards increasing the explicitness of prioritisation decisions. Whilst this trend may have been forced by limited resources, it is also possibly a reflection of the efforts by SLT heads of service to provide equal access within their own department. These developments are still in their early stage, reflected by the variation in interpretation and the fact that they are by no means universal across departments.

This investigation took a limited view of the working context of slts by examining the documentation supplied by SLT heads of service. It has not attempted to provide a more detailed analysis of the institutional structures influencing slts' decisions. However, it has followed through on data elicited from slts in the early stages of the research in an attempt to provide a small level of confirmation that such institutional influences did indeed exist.

APPENDIX C  
RESPONDENT VALIDATION OF THE INITIAL DATA SET:  
DETAILED RESULTS

### **C. INTRODUCTION**

Section 7.5 described the three exercises which were carried out to validate the initial data set. The results were summarised in the text in section 7.6. This appendix shows the analysis in more detail.

#### **C.1. RESPONDENT VALIDATION (RV) 1: TRANSCRIPTS**

Corrections to the original transcripts of the interviews were relatively minor and amounted to clarifications by slts of comments that had made during the interviews. Slts expressed concern over how difficult the exercise had been and some dismay over their own perceived lack of clarity. One slt enclosed a diagram whereby she had entered the factors taken into account into a hierarchy to show their relative weighting in her decision. Another had recorded her decisions, using factors she had identified as significant, for several children following the interview. This process helped her to identify factors that had not arisen previously in her interview.

#### **C.2. RV 2: MAIN FACTORS QUESTIONNAIRE**

Figure C1 shows the main factors in the form presented back to participating experts.

##### **Factors of significance**

The thirty two main factors were presented back to the experts, unanimous agreement was reached on the relative importance of only two of the factors: child's comprehension and expressive language quality were regarded as always important. Only two items were rated as never important, by one slt on each occasion: age of the child and the presence of motor problems. Figure C2 summarises the results in terms of those factors considered to be important sometimes, often or always by more than half of the slts and those rated as the ten most important factors. As one might expect, a high proportion of factors pertaining to the child's communication skills were rated as important. One slt remarked on the difficulty of completing this questionnaire "in abstract" because of the variety of cases seen: "...at some stage all of these factors are important".

##### **Agreement**

Slts' ratings of this questionnaire were examined in pairs. The number of items rated the same by each pair ranged from 9-17 (within +/- 1; range 21-28). Figure C3 shows the results for each pair.



| Please indicate whether factors from the following areas would influence your decision to take on a preschool child for therapy |       |        |           |       |        |   |   |   |    |  |
|---|-------|--------|-----------|-------|--------|---|---|---|----|--|
|   | Never | Rarely | Sometimes | Often | Always |   |   |   |    |  |
| Information contained in the referral letter  |       |        |           |       |        |   |   |   |    |  |
| Child's interaction with therapist  |       |        |           |       |        |   |   |   |    |  |
| Child's interaction with parent/carer   |       |        |           |       |        |   |   |   |    |  |
| Age of child  |       |        |           |       |        |   |   |   |    |  |
| Child's attention   |       |        |           |       |        |   |   |   |    |  |
| Parent/carer's ability/desire to co-operate   |       |        |           |       |        |   |   |   |    |  |
| Severity of problem   |       |        |           |       |        |   |   |   |    |  |
| Child's comprehension   |       |        |           |       |        |   |   |   |    |  |
| Diagnostic category of communication problem  |       |        |           |       |        |   |   |   |    |  |
| Developmental history: language   |       |        |           |       |        |   |   |   |    |  |
| Developmental history: general  |       |        |           |       |        |   |   |   |    |  |
| Emotional problems  |       |        |           |       |        |   |   |   |    |  |
| Behaviour problems  |       |        |           |       |        |   |   |   |    |  |
| Other professional involvement  |       |        |           |       |        |   |   |   |    |  |
| Other provision (eg nursery)  |       |        |           |       |        |   |   |   |    |  |
| Parenting skills  |       |        |           |       |        |   |   |   |    |  |
| Child's cognitive level   |       |        |           |       |        |   |   |   |    |  |
| Presence of motor problems  |       |        |           |       |        |   |   |   |    |  |
| Prognosis   |       |        |           |       |        |   |   |   |    |  |
| Intelligibility   |       |        |           |       |        |   |   |   |    |  |
| Amount of progress  |       |        |           |       |        |   |   |   |    |  |
| Expressive language: quality  |       |        |           |       |        |   |   |   |    |  |
| quantity  |       |        |           |       |        |   |   |   |    |  |
| Hearing problems  |       |        |           |       |        |   |   |   |    |  |
| Perceived effectiveness of intervention   |       |        |           |       |        |   |   |   |    |  |
| Environmental issues /influences  |       |        |           |       |        |   |   |   |    |  |
| Child's ability to cope with therapy  |       |        |           |       |        |   |   |   |    |  |
| Child's awareness of problem  |       |        |           |       |        |   |   |   |    |  |
| Child's motivation to change  |       |        |           |       |        |   |   |   |    |  |
| Family history of communication difficulties  |       |        |           |       |        |   |   |   |    |  |
| Medical history   |       |        |           |       |        |   |   |   |    |  |
| Views of other professionals  |       |        |           |       |        |   |   |   |    |  |
| Others  |       |        |           |       |        |   |   |   |    |  |
| Please indicate which ten you consider to be the most important and if possible, in order of importance for you.                |       |        |           |       |        |   |   |   |    |  |
| 1   | 2     | 3      | 4         | 5     | 6      | 7 | 8 | 9 | 10 |  |

**Figure C1 Main factors questionnaire**

|   |
|---|
| <p><b>ASSESSMENT OF CHILD'S COMMUNICATION SKILLS</b></p> <p>interaction with carer**<br/> interaction with therapist#<br/> comprehension** #<br/> intelligibility** #<br/> expressive language quality** #<br/> expressive language quantity**#<br/> progress** #<br/> child's awareness of problem</p>                     |
| <p><b>ASSESSMENT OF CHILD'S GENERAL SKILLS</b></p> <p>attention**#<br/> cognitive development#<br/> emotional problems**<br/> behaviour problems<br/> motor skills<br/> hearing#<br/> child's ability to cope with therapy** #<br/> child's motivation to change</p>  |
| <p><b>CASE BACKGROUND</b></p> <p>referral information<br/> language development history** #<br/> general development history#<br/> age#<br/> other professional involvement** #<br/> other provision available** #<br/> family history of communication problems<br/> medical history<br/> views of other professionals</p> |
| <p><b>ENVIRONMENTAL SITUATION</b></p> <p>parent's co-operation#<br/> parenting skills#<br/> environmental issues**</p>  |
| <p><b>SUMMARY DECISIONS</b></p> <p>severity of child's problems** #<br/> diagnostic category of communication problem#<br/> prognosis#<br/> perceived effectiveness of intervention** #</p>   |

**Figure C2 Factors taken into account by therapist.**

**\*\* taken into account sometimes, often or always.**

**# rated as amongst the 10 most important**

| Slts               | No. of<br>Items rated<br>same | No. of<br>Items rated<br>within +/- 1 | Total |
|--------------------|-------------------------------|---------------------------------------|-------|
| 1 & 2              | 12                            | 9                                     | 21    |
| 1 & 5              | 13                            | 10                                    | 23    |
| 1 & 6              | 14                            | 7                                     | 21    |
| 5 & 6              | 17                            | 11                                    | 28    |
| 2 & 6              | 11                            | 10                                    | 21    |
| 2 & 5              | 9                             | 13                                    | 22    |
| 1 & 3              | 9                             | 15                                    | 24    |
| 2 & 3              | 8                             | 15                                    | 23    |
| 5 & 3              | 11                            | 16                                    | 27    |
| 6 & 3              | 9                             | 17                                    | 26    |
| Mean               | 10                            | 12.3                                  | 23.6  |
| Standard deviation | 3.11                          | 3.36                                  | 2.6   |

**Figure C3. Agreement in ratings between pairs of slts.**

The backgrounds of those slts whose scores showed most and least agreement were examined to look for similarities and differences. The most obvious similarity was that those slts with the highest agreement scores (5&6; 6&3; 5&3) were the three coming from the same geographical area. The pair with the highest scores (5&6) were the only slts within this sample to spend all their working time within community clinics and were not from the same Trust. Other slts had some other speciality involvement. This pair were in high agreement over the items rated the same, whereas the other pairs achieved close agreement overall only if one included the +/- 1 items. The length of time since qualification did not appear to be related to similarities or differences.

### **C.3. RV3: DETAILED DESCRIPTIONS OF FACTORS**

(items used are shown in figures C13-15 at the end of this appendix *along with the questionnaire*)  
 Twelve completed questionnaires were returned (50%). In view of the time slts took to complete them, (55-150 minutes per questionnaire), the low return rate is not surprising. Some slts made copious written comments; others made a few comments in passing as they handed back the questionnaires. Typical examples of slts' comments are shown in Figure C4.

Sometimes yes/no/don't know aren't enough - its not always that clear cut - a 'sometimes' column would have been useful  
 Many items are important because that problem is NOT apparent  
 Some factors alone did not contribute to prioritisation - only when they were thought about in direct combination with others

**Figure C4. Examples of comments by slts**

Not all slts had completed all sections of the questionnaires or indicated that they thought them to be inapplicable. They indicated where they felt the wording was ambiguous and added extra items. A total of 192 specific corrections, adjustments or additions were made (range per questionnaire 3-50).

Of the 12 completed questionnaires, 10 had been completed on children whom the therapist had arranged to see again. Only 2 of the 12 were not regarded as needing further intervention.

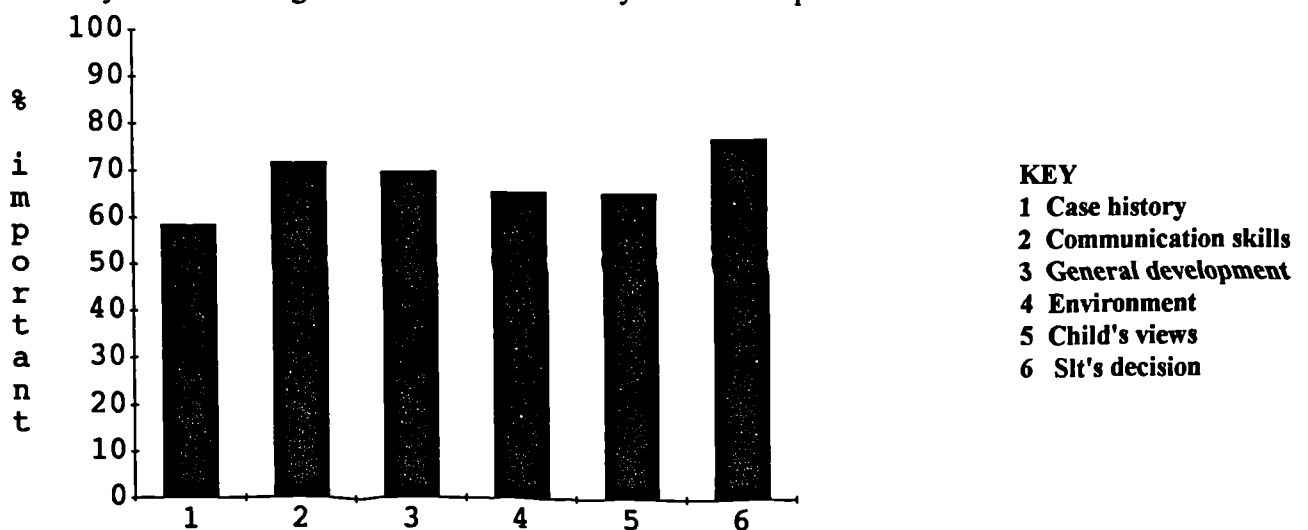
### Factors of significance

Figure C5 shows the diagnostic statements made about the children and the type of intervention being recommended. There is clearly no easy relation between a child's diagnosis, the severity of the difficulty and the action undertaken, with the exception of the two children with mild phonological problems who were both provided with advice during the initial assessment and then discharged. A broad trend is evident in that the more severe the disorder, the higher the frequency of intervention offered, as one would expect.

| No. | Severity     | Diagnosis                      | Action to be taken                   |
|-----|--------------|--------------------------------|--------------------------------------|
| 1   | mild         | phonological delay             | advice & no further action           |
| 1   | mild/mod     | phonological delay             | advice & no further action           |
| 1   | mild/mod     | phonological & exp lang delay  | see fortnightly                      |
| 1   | moderate     | language delay fluency problem | See within 4 mths                    |
| 1   | moderate     | language disorder              | see weekly                           |
| 2   | moderate     | language delay                 | a) see fortnightly<br>b) see 6weekly |
| 1   | mod/severe   | language delay                 | see fortnightly                      |
| 1   | mod/severe   | phonological delay             | see weekly                           |
| 1   | severe       | lang del/disorder              | see monthly                          |
| 1   | severe       | language disorder              | see twice/week                       |
| 1   | sev/profound | language delay                 | see fortnightly                      |

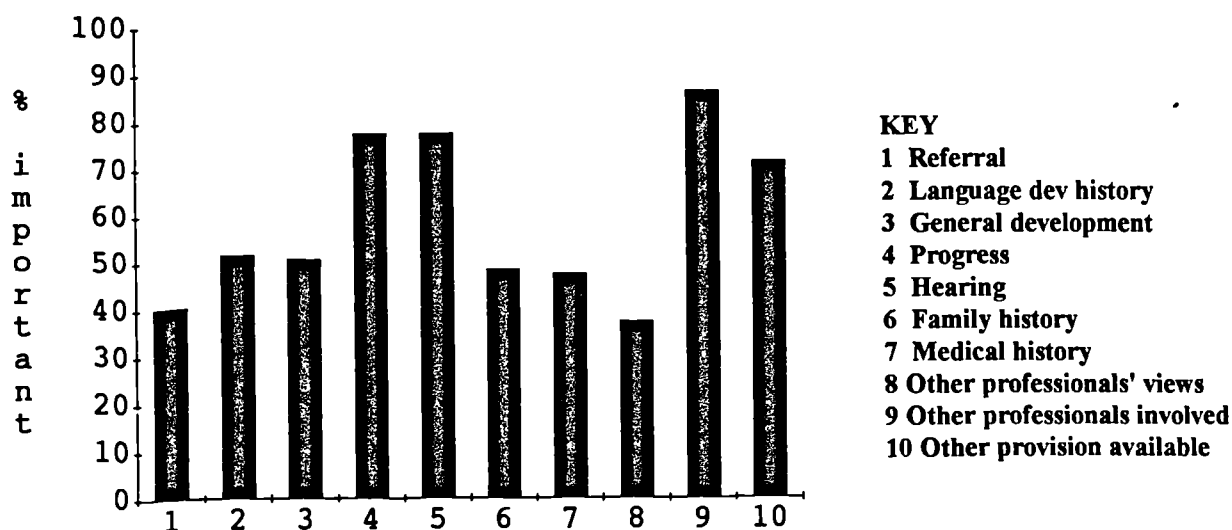
**Figure C5 Diagnosis/action analysis**

An item analysis considered which items were regarded as particularly significant. Figure C6 shows the percentage of items used in each section which were rated as important (including very important and crucial) in the decision. The category of 'crucial' was rarely used, although particular factors attracted this rating more often than others (eg comprehension, intelligibility, attention, cognitive abilities, child's awareness of problem). Only the child's cognitive abilities were always rated as important.



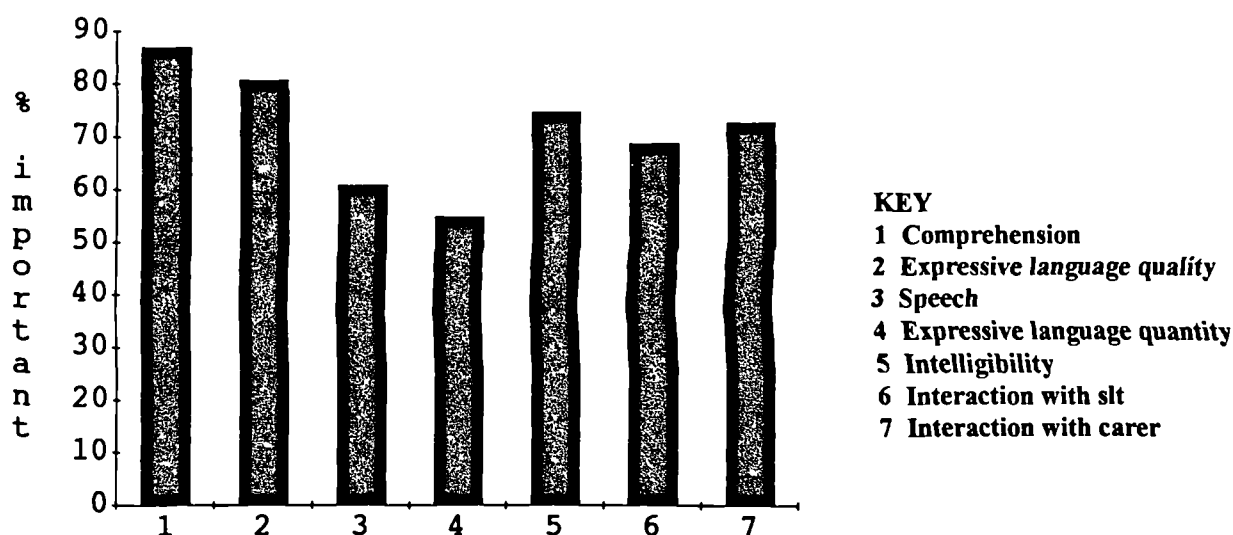
**Figure C6 Important factors**

This figure shows that overall, the importance rating of factors in the different sections was similar, with the slts' decision summary receiving 'important' ratings most often and the case background factors receiving 'important' ratings least often. However, within each section variation is apparent as can be seen from the following figures C7-11. Since the children were all different, it is not possible to use these figures to look at agreement. However, the 75% cut-off level can be used as indicative of substantial consensus: if slts used an item, some rated it as important, others did not; If it is rated as important in over 75% of instances, then consensus can be said to exist that this category was important.



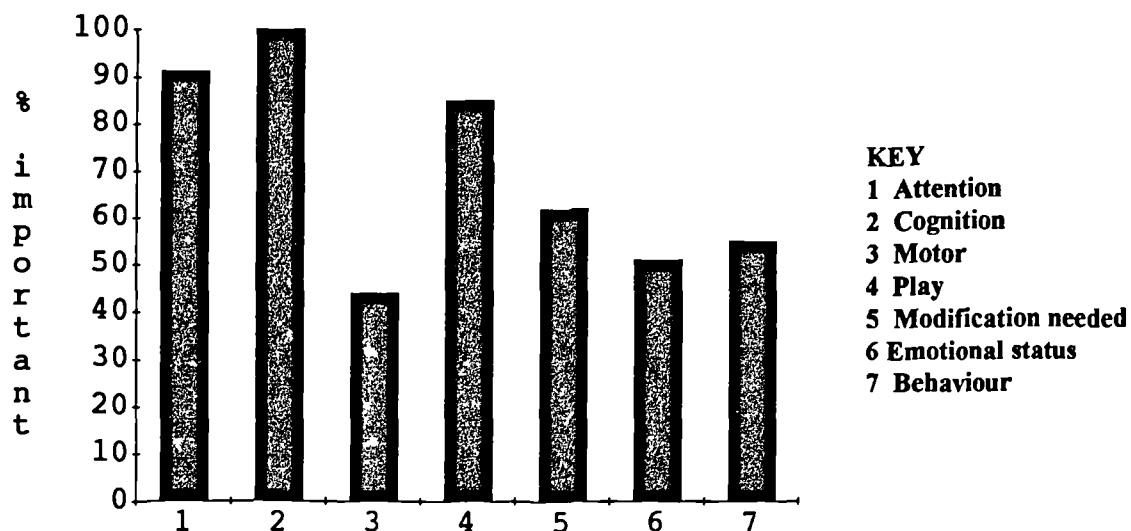
**Figure C7 Case background**

Figure C7 shows that, within the case background, factors such as progress, hearing and the amount of other professional involvement were more often rated as important.



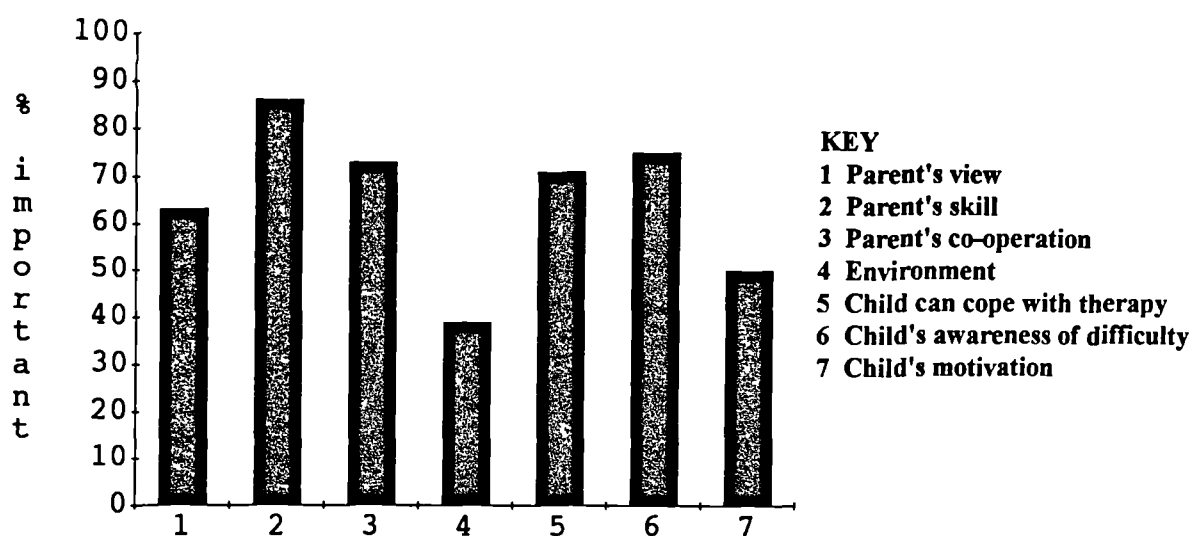
**Figure C8 Communication**

Figure C8 shows that comprehension and expressive language quality are seen as important on most occasions.



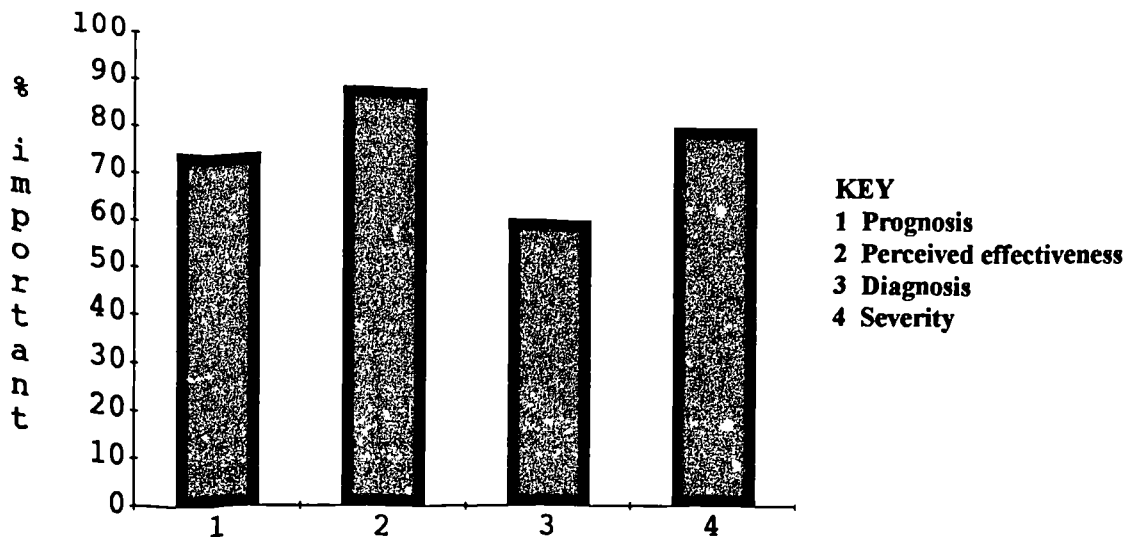
**Figure C9 General skills**

Figure C9, which presents the ratings of factors in a more general assessment of the child, show that attention, cognition and play are seen as important more frequently than other aspects of the child.



**Figure C10 Context**

Figure C10 shows that the parents skill was rated as important more often than other aspects of the child's environment.



**Figure C11 Slts' decision summary**

Finally, figure C11 shows that slts rate their views regarding likely effectiveness of intervention and the severity of the problem as important more often than their views of the child's speech and language diagnosis.

**Priority or nonpriority**

Slts indicated a total of 215 items as being influential in their decision to prioritise a child for intervention; however, only 75 (35%) of these were rated as important in the decision. Of the 231 items said to influence the slt towards nonprioritisation, 67 were rated as important (29%).

Some items appeared influential both for and against prioritisation. For example:

"child has no history of ear infection"

was cited as important both for and against prioritisation in different cases. Similarly, both positive and negative aspects of some items were said to influence slts in favour of prioritisation. For example:

"child babbled as a baby"  
"child did not babble as a baby"

were both rated as important (by different slts) influences towards prioritisation. In another example of this

"child sat at average age"  
"child did not sit at average age"

were both indicated by slts to be of significant influence towards non-prioritisation.

A total of 87 items varied in this way; 60 items were used differentially: 32 items were said to influence only towards prioritisation and 28 only towards nonprioritisation. These are presented in figures C13 and C14. A total of 34 items were not used at all or were rated as not at all important. (figure C15)

**General developmental history**

speech and language development is not in line with physical development

**Progress**

has not made progress over the last 3 months

has not moved onto next stage of language development since referral

progress is deviant

**Expressive language quality**

does not hold a conversation

cannot answer questions

responses are not prompt

**Expressive language quantity**

used less than 20 utterances during the session

**Child's interaction with parent/carer**

did not make eye contact with parent/carer

did not initiate communication with carer

**Attention**

poor listening skills

poor concentration

**Modification forced on therapist**

therapist has to coax towards activities

child requires shorter sentences

**Emotional status**

withdrawn

child seems frightened by nursery/playgroup

**Behaviour problems**

language problems are causing problems for child or family

**Parent's view of the problem**

parent reports that they are worried over child's difficulties

parents are not seeking reassurance only

parent misses the point of what the therapist is saying because of own view

child's problem is seen as a big issue by the family

nonverbal signs of anxiety in parent

**Parenting skills**

did not give appropriate toys/tasks to child

does not have objective view of child

has rigid views of how child should behave

**Parents co-operation**

willing to be adaptable for appointments

prepare to attend to further appointments

interested in therapy

**Environment**

Child has limited social experience

**Child's ability to cope with therapy**

willing to co-operate

**Child's awareness of problem**

child motivated to communicate

**Predicted effectiveness of intervention**

intervention is likely to be effective.

**Figure C13 Factors rated as important which were used differentially to signal prioritisation**



**General developmental history**  
speech and language development is in line with physical development

**Progress**  
has made progress over the last 3 months  
has moved onto next stage of language development since referral  
progress is not deviant

**Expressive language quality**  
holds a conversation  
can answer questions  
responses are prompt

**Child's interaction with therapist**  
made eye contact with therapist  
accepts proffered hand

**Child's interaction with parent/carer**  
initiated communication with carer

**Attention**  
listening skills OK  
concentration OK

**Modification forced on therapist**  
therapist does not have to coax towards activities

**Emotional status**  
not withdrawn  
child is not frightened by playgroup/nursery

**Behaviour problems**  
language problems are not causing problems for child or family  
no deviant social problems

**Parent's view of the problem**  
parent did not report that they are worried over child's difficulties  
parents are seeking reassurance only  
parent does not miss the point of what the therapist is saying because of own view  
child's problem is not seen as a big issue by the family  
no nonverbal signs of anxiety in parent

**Parenting skills**  
gave appropriate toys/tasks to child  
has objective view of child  
does not have rigid views of how child should behave

**Environment**  
Child does not have limited social experience  
child has access to play opportunities  
child has a range of toys at home

**Figure C14. Factors rated as important which were used differentially to signal nonprioritisation**

**Referral letter**  
referral requested assessment only  
referral requested a specified type of intervention only

**Language development history**  
first words were before 12 months  
first words were between 2.5 - 3.0 years  
first words were after 3 years\*  
child was joining words before 12months  
child was joining words between 12-18 months  
child was joining words between 18-24 months  
stages of development have been missed

**General developmental history**  
not toilet trained

**Progress**  
child is less flighty  
child is more settled

**Hearing**  
history of ear infections/secretory OM less than 3times\*  
" .. more than 3 times\*  
" .. more than ten times\*  
current unilateral conductive hearing loss  
current bilateral hearing loss\*  
on waiting list for grommet insertion  
grommets inserted within the last 3 months\*  
" ... within the last 3-6 months\*  
sensori-neural loss present\*  
child failed to discriminate between similar sounding words during a session

**Medical history**  
prematurity

**Views of other professionals**  
views of nursery staff  
paediatrician  
medical officer  
GP\*  
viewed as within normal limits by educational psychologist\*  
" by paediatrician\*  
" by medical officer

**Other provision**  
attends daycare full time\*  
has been in day care for 6-12months\*  
" for over 12months\*  
child is about to enter school\*  
" special school\*  
" special provision\*

**Child's comprehension**  
comprehension delay of more than 18mths\*  
no apparent verbal comprehension\*  
able to select objects at a single word level

**Expressive language quality**  
phonology - backing\*

**Speech**  
can copy sound sequences\*

**Intelligibility**  
unintelligible to therapist\*

**Parents/carers/environment**  
parent asked will s/he be teased at school

**Environment**  
single parent  
divorced  
divorced recently  
parents separated  
parents separated recently\*  
mother works full time  
father works full time  
father works part-time\*  
child is on at-risk register

**Child's awareness of problem**  
child has insight into problem

**Prognosis**  
causative factors are resolving spontaneously

**Diagnostic category**  
dysarthria  
dyspraxia  
voice disorder  
fluency disorder

**Figure C15 Items rated as unimportant (or not rated \*)**

Appendix C continued. RV3 Questionnaire

SECTION I BACKGROUND INFORMATION

1.1 Male Female (please circle)

1.2 Referred by: (please circle)

health visitor GP Clinical medical officer nursery staff

parent audiologist ed psychologist

other.....(please specify

1.3 d.o.b.:.....

1.4 Age of child at referral:.....years.....months

1.5 Date of school entry: month:..... year:.....

1.6 Mother's occupation.....

1.7 Father's occupation.....

1.8 Date of assessment:.....

|  | was this feature present |   |    | How important was it in your decision making |     |     |   |     | Did it make you |    |
|--|--------------------------|---|----|--|-----|-----|---|-----|-----------------|----|
|  | Y                        | N | DK | Not  | Not | Imp | V | Cru | P               | NP |
| <u>2.1 The referral letter</u>   |                          |   |    |  |     |     |   |     |                 |    |
| Referral indicated:  |                          |   |    |  |     |     |   |     |                 |    |
| 2.11 severity  |                          |   |    |  |     |     |   |     |                 |    |
| 2.12 anxiety about child   |                          |   |    |  |     |     |   |     |                 |    |
| a) of referrer   |                          |   |    |  |     |     |   |     |                 |    |
| 2.13 b) of parent  |                          |   |    |  |     |     |   |     |                 |    |
| 2.14 nature of problem   |                          |   |    |  |     |     |   |     |                 |    |
| Referral requested:  |                          |   |    |  |     |     |   |     |                 |    |
| 2.15 assessment only   |                          |   |    |  |     |     |   |     |                 |    |
| 2.16 a specified type of intervention  |                          |   |    |  |     |     |   |     |                 |    |
| 2.17 other   |                          |   |    |  |     |     |   |     |                 |    |
| <u>2.1 Developmental history - language</u>  |                          |   |    |  |     |     |   |     |                 |    |
| Reported history:  |                          |   |    |  |     |     |   |     |                 |    |
| 2.21 Child babbled as a baby   |                          |   |    |  |     |     |   |     |                 |    |
| First words were   |                          |   |    |  |     |     |   |     |                 |    |
| 2.22 before 12 months  |                          |   |    |  |     |     |   |     |                 |    |
| 2.23 12-18 mths  |                          |   |    |  |     |     |   |     |                 |    |
| 2.24 18-24 mths  |                          |   |    |  |     |     |   |     |                 |    |
| 2.25 2 - 2.5 yrs   |                          |   |    |  |     |     |   |     |                 |    |
| 2.26 2.5 - 3 yrs   |                          |   |    |  |     |     |   |     |                 |    |
| 2.27 after 3 yrs   |                          |   |    |  |     |     |   |     |                 |    |
| child joining words:   |                          |   |    |  |     |     |   |     |                 |    |
| 2.28 before 12 mths  |                          |   |    |  |     |     |   |     |                 |    |
| 2.29 12-18 mths  |                          |   |    |  |     |     |   |     |                 |    |
| 2.210 18-24 mths   |                          |   |    |  |     |     |   |     |                 |    |
| 2.211 2-2½   |                          |   |    |  |     |     |   |     |                 |    |
| 2.212 2½- 3 yrs  |                          |   |    |  |     |     |   |     |                 |    |
| 2.213 after 3yrs   |                          |   |    |  |     |     |   |     |                 |    |
| Therapist conclusion:  |                          |   |    |  |     |     |   |     |                 |    |
| 2.214 Speech and language delay may be part of a general developmental delay                 |                          |   |    |  |     |     |   |     |                 |    |
| 2.215 12 mth discrepancy between speech and language and the rest of the child's development |                          |   |    |  |     |     |   |     |                 |    |
| 2.216 Stages of development have been missed   |                          |   |    |  |     |     |   |     |                 |    |
| 2.217 Atypical developmental patterns  |                          |   |    |  |     |     |   |     |                 |    |
| 2.218 Other  |                          |   |    |  |     |     |   |     |                 |    |
| <u>2.3 Developmental history: general</u>  |                          |   |    |  |     |     |   |     |                 |    |
| Reported history   |                          |   |    |  |     |     |   |     |                 |    |
| 2.31 not toilet trained  |                          |   |    |  |     |     |   |     |                 |    |
| 2.32 sat at average age  |                          |   |    |  |     |     |   |     |                 |    |
| 2.33 walked at average age   |                          |   |    |  |     |     |   |     |                 |    |
| Therapist conclusions:   |                          |   |    |  |     |     |   |     |                 |    |
| 2.34 Speech and language development is in line with physical developmental                  |                          |   |    |  |     |     |   |     |                 |    |
| 2.35 Other   |                          |   |    |  |     |     |   |     |                 |    |
| <u>2.4 Progress</u>  |                          |   |    |  |     |     |   |     |                 |    |
| Parent reports:  |                          |   |    |  |     |     |   |     |                 |    |
| 2.41 Child is less flighty   |                          |   |    |  |     |     |   |     |                 |    |
| 2.42 child is more settled   |                          |   |    |  |     |     |   |     |                 |    |
| 2.43 child made progress over last 3 mths  |                          |   |    |  |     |     |   |     |                 |    |
| 2.44 child made progress over last 6 mths  |                          |   |    |  |     |     |   |     |                 |    |
| 2.45 increase in single words vocabulary   |                          |   |    |  |     |     |   |     |                 |    |
| Therapist conclusions:   |                          |   |    |  |     |     |   |     |                 |    |

|       | was this feature present   |   |    | How important was it in your decision making |     |     |   |     | Did it make you |    |
|-------|--|---|----|--|-----|-----|---|-----|-----------------|----|
|       | Y  | N | DK | Not  | Not | Imp | V | Cru | P               | NP |
| 2.46  | Deviant progress   |   |    |  |     |     |   |     |                 |    |
| 2.47  | is progressing at normal rate  |   |    |  |     |     |   |     |                 |    |
| 2.48  | child has moved onto next stage of language development since referral       |   |    |  |     |     |   |     |                 |    |
| 2.49  | Other  |   |    |  |     |     |   |     |                 |    |
| 2.5   | Hearing  |   |    |  |     |     |   |     |                 |    |
| 2.51  | History of ear infections/secretory otitis media                             |   |    |  |     |     |   |     |                 |    |
|       | If yes was this:   |   |    |  |     |     |   |     |                 |    |
| 2.52  | less than 3 times  |   |    |  |     |     |   |     |                 |    |
| 2.53  | more than 3 times  |   |    |  |     |     |   |     |                 |    |
| 2.54  | more than 10 times   |   |    |  |     |     |   |     |                 |    |
| 2.55  | number unknown   |   |    |  |     |     |   |     |                 |    |
| 2.56  | No current hearing loss  |   |    |  |     |     |   |     |                 |    |
|       | Current conductive hearing loss:   |   |    |  |     |     |   |     |                 |    |
| 2.57  | unilateral   |   |    |  |     |     |   |     |                 |    |
| 2.58  | bilateral  |   |    |  |     |     |   |     |                 |    |
| 2.59  | Under review at hearing assessment centre                                    |   |    |  |     |     |   |     |                 |    |
|       | On waiting list for:   |   |    |  |     |     |   |     |                 |    |
| 2.510 | hearing test   |   |    |  |     |     |   |     |                 |    |
| 2.511 | ENT appointment  |   |    |  |     |     |   |     |                 |    |
| 2.512 | grommet insertion  |   |    |  |     |     |   |     |                 |    |
|       | Grommets inserted:   |   |    |  |     |     |   |     |                 |    |
| 2.513 | within last 3 mths   |   |    |  |     |     |   |     |                 |    |
| 2.514 | within last 3-6 mths   |   |    |  |     |     |   |     |                 |    |
| 2.515 | more than 6 mths ago   |   |    |  |     |     |   |     |                 |    |
| 2.516 | sensori-neural loss present  |   |    |  |     |     |   |     |                 |    |
| 2.517 | mother feels child's hearing is poor   |   |    |  |     |     |   |     |                 |    |
| 2.518 | child failed to discriminate between similar sounding words during a session |   |    |  |     |     |   |     |                 |    |
| 2.519 | Other  |   |    |  |     |     |   |     |                 |    |
| 2.6   | Family history of communication problems                                     |   |    |  |     |     |   |     |                 |    |
| 2.61  | No sibling history   |   |    |  |     |     |   |     |                 |    |
| 2.62  | Previous sibling(s) have had spontaneously resolving language delay          |   |    |  |     |     |   |     |                 |    |
| 2.63  | Previous sibling(s) attends a language unit                                  |   |    |  |     |     |   |     |                 |    |
| 2.64  | One previous sibling has had speech therapy                                  |   |    |  |     |     |   |     |                 |    |
| 2.65  | More than one previous sibling has had speech therapy                        |   |    |  |     |     |   |     |                 |    |
| 2.66  | Parents have had speech therapy  |   |    |  |     |     |   |     |                 |    |
| 2.67  | Parents had spontaneously resolving language delay                           |   |    |  |     |     |   |     |                 |    |
| 2.68  | Parents attended special unit/school   |   |    |  |     |     |   |     |                 |    |
| 2.69  | History of speech therapy involvement in extended family                     |   |    |  |     |     |   |     |                 |    |
| 2.610 | History of severe communication difficulties in extended family              |   |    |  |     |     |   |     |                 |    |
| 2.611 | History of spontaneously resolving language delay in extended family         |   |    |  |     |     |   |     |                 |    |
| 2.612 | Other  |   |    |  |     |     |   |     |                 |    |
| 2.1   | Medical history  |   |    |  |     |     |   |     |                 |    |
| 2.71  | No significant medical history   |   |    |  |     |     |   |     |                 |    |

|   |  | was this feature present |   |    | How important was it in your decision making |     |     |   |     | Did it make you |    |  |
|---|--|--------------------------|---|----|--|-----|-----|---|-----|-----------------|----|--|
|   |  | Y                        | N | DK | Not  | Not | Imp | V | Cru | P               | NP |  |
|   |  |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.72                                      | Prematurity  |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.73                                      | Illness in pregnancy                               |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.74                                      | Difficult birth                                    |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.75                                      | Spent time in SCBU                                 |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.76                                      | Other perinatal difficulties                       |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.77                                      | Convulsions  |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.78                                      | Hospitalization                                    |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.79                                      | Regular hospital outpatient visits                 |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.710                                     | Major surgery                                      |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.711                                     | Meningitis   |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.712                                     | Viral infections                                   |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.713                                     | Head injury  |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.714                                     | Feeding difficulties                               |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.715                                     | Nasal regurgitation                                |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.716                                     | Identified syndrome                                |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.717                                     | Cerebral palsy                                     |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.718                                     | Autism   |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.719                                     | Autistic features                                  |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.720                                     | Global developmental delay                         |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.721                                     | Velopharyngeal/cleft palate surgery                |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.722                                     | Other  |                          |   |    |  |     |     |   |     |                 |    |  |
| <u>2.8 Views of other professionals</u>   |  |                          |   |    |  |     |     |   |     |                 |    |  |
| Concern expressed by:                     |  |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.81                                      | health visitor                                     |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.82                                      | nursery staff                                      |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.83                                      | educational psychologist                           |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.84                                      | paediatrician                                      |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.85                                      | medical officer                                    |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.86                                      | GP   |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.87                                      | Other  |                          |   |    |  |     |     |   |     |                 |    |  |
| Viewed as within normal limits by:        |  |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.88                                      | health visitor                                     |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.89                                      | nursery staff                                      |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.810                                     | educational psychologist                           |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.811                                     | paediatrician                                      |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.812                                     | medical officer                                    |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.813                                     | other  |                          |   |    |  |     |     |   |     |                 |    |  |
| <u>2.9 Other professional involvement</u> |  |                          |   |    |  |     |     |   |     |                 |    |  |
| Is the child being seen regularly by:     |  |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.91                                      | social worker                                      |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.92                                      | peripetetic teacher of the deaf                    |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.93                                      | preschool advisory teacher of the hearing impaired |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.94                                      | portage teacher                                    |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.95                                      | physiotherapist                                    |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.96                                      | occupational therapist                             |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.97                                      | educational psychologist                           |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.98                                      | nursery staff                                      |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.99                                      | has already seen many other professionals          |                          |   |    |  |     |     |   |     |                 |    |  |
| 2.910                                     | Other  |                          |   |    |  |     |     |   |     |                 |    |  |

| was this feature present |   |    | How important was it in your decision making |     |     |   |     | Did it make you |    |
|--------------------------|---|----|--|-----|-----|---|-----|-----------------|----|
| Y                        | N | DK | Not  | Not | Imp | V | Cru | P               | NP |

|   |   |  |  |  |  |  |  |  |  |
|---|---|--|--|--|--|--|--|--|--|
| <b>2.10 Other provision</b>                             |   |  |  |  |  |  |  |  |  |
| Is the child currently attending:                       |   |  |  |  |  |  |  |  |  |
| 2.101   | nursery                                       |  |  |  |  |  |  |  |  |
| 2.102   | playgroup                                     |  |  |  |  |  |  |  |  |
| 2.103   | child minder                                  |  |  |  |  |  |  |  |  |
| 2.104   | special unit/school                           |  |  |  |  |  |  |  |  |
| 2.105   | mother & toddler                              |  |  |  |  |  |  |  |  |
| Do they attend  |   |  |  |  |  |  |  |  |  |
| 2.106   | full-time                                     |  |  |  |  |  |  |  |  |
| 2.107   | part-time                                     |  |  |  |  |  |  |  |  |
| How long has the child been in care/day care            |   |  |  |  |  |  |  |  |  |
| 2.108   | less than 3 mths                              |  |  |  |  |  |  |  |  |
| 2.109   | 3-6 mths                                      |  |  |  |  |  |  |  |  |
| 2.1010  | 6-12 mths                                     |  |  |  |  |  |  |  |  |
| 2.1011  | over 12 mths                                  |  |  |  |  |  |  |  |  |
| 2.1012  | is the child in foster care                   |  |  |  |  |  |  |  |  |
| 2.1013  | does the child need a nursery placement       |  |  |  |  |  |  |  |  |
| Child is about the enter:                               |   |  |  |  |  |  |  |  |  |
| 2.1014  | nursery                                       |  |  |  |  |  |  |  |  |
| 2.1015  | school  |  |  |  |  |  |  |  |  |
| 2.1016  | special school                                |  |  |  |  |  |  |  |  |
| 2.1017  | special provision                             |  |  |  |  |  |  |  |  |
| 2.1018  | other   |  |  |  |  |  |  |  |  |
| <b>Section III COMMUNICATION ASSESSMENT</b>             |   |  |  |  |  |  |  |  |  |
| <b>3.1 Child's comprehension</b>                        |   |  |  |  |  |  |  |  |  |
| 3.11  | Comprehension is within normal limits         |  |  |  |  |  |  |  |  |
| Comprehension delay (relative to chronological age) of: |   |  |  |  |  |  |  |  |  |
| 3.12  | 6 mths  |  |  |  |  |  |  |  |  |
| 3.13  | 12 mths                                       |  |  |  |  |  |  |  |  |
| 3.14  | 18 mths                                       |  |  |  |  |  |  |  |  |
| 3.15  | more than 18 mths                             |  |  |  |  |  |  |  |  |
| 3.16  | No apparent verbal comprehension              |  |  |  |  |  |  |  |  |
| 3.17  | Able to select objects at a single word level |  |  |  |  |  |  |  |  |
| 3.18  | Understands only in context                   |  |  |  |  |  |  |  |  |
| 3.19  | Understands at a two word level               |  |  |  |  |  |  |  |  |
| 3.110   | Functional comprehension is age appropriate   |  |  |  |  |  |  |  |  |
| 3.111   | Comprehension is inconsistent                 |  |  |  |  |  |  |  |  |
| 3.112   | Other   |  |  |  |  |  |  |  |  |
| <b>3.2 Expressive language</b>                          |   |  |  |  |  |  |  |  |  |
| Utterance length  |   |  |  |  |  |  |  |  |  |
| 3.21  | No words used                                 |  |  |  |  |  |  |  |  |
| 3.22  | Using single words only                       |  |  |  |  |  |  |  |  |
| 3.23  | Using 1-2 word utterances                     |  |  |  |  |  |  |  |  |
| 3.24  | Using 2 word utterances                       |  |  |  |  |  |  |  |  |
| 3.25  | Using 3-4 word utterances                     |  |  |  |  |  |  |  |  |
| 3.26  | Using utterances of 5+ words                  |  |  |  |  |  |  |  |  |
| 3.27  | Using complex sentences                       |  |  |  |  |  |  |  |  |
| 3.28  | Child does not hold a conversation            |  |  |  |  |  |  |  |  |
| 3.29  | Language used appropriately                   |  |  |  |  |  |  |  |  |
| 3.210   | Child comes out with things out of the blue   |  |  |  |  |  |  |  |  |

|   |   | was this feature present |   |    | How important was it in your decision making |     |     |   |     | Did it make you |    |
|---|---|--------------------------|---|----|--|-----|-----|---|-----|-----------------|----|
|   |   | Y                        | N | DK | Not  | Not | Imp | V | Cru | P               | NP |
|   |   |                          |   |    |  |     |     |   |     |                 |    |
| 3.211   | No functional language  |                          |   |    |  |     |     |   |     |                 |    |
| 3.212   | Can comment about a picture book  |                          |   |    |  |     |     |   |     |                 |    |
| 3.213   | Can answer questions  |                          |   |    |  |     |     |   |     |                 |    |
| 3.214   | Irrelevant responses to questions   |                          |   |    |  |     |     |   |     |                 |    |
| 3.215   | Responses or verbal comments are prompt   |                          |   |    |  |     |     |   |     |                 |    |
| 3.216   | Echolalia   |                          |   |    |  |     |     |   |     |                 |    |
| 3.217   | Jargon  |                          |   |    |  |     |     |   |     |                 |    |
| 3.218   | Unusual features  |                          |   |    |  |     |     |   |     |                 |    |
| 3.219   | Child is able to express needs appropriately for age                                    |                          |   |    |  |     |     |   |     |                 |    |
| Expressive language is  |   |                          |   |    |  |     |     |   |     |                 |    |
| 3.220   | within normal limits for age  |                          |   |    |  |     |     |   |     |                 |    |
| 3.221   | delay of 6 mths   |                          |   |    |  |     |     |   |     |                 |    |
| 3.222   | delay of 12 mths  |                          |   |    |  |     |     |   |     |                 |    |
| 3.223   | delay 12-18 mths  |                          |   |    |  |     |     |   |     |                 |    |
| 3.224   | delay of more than 18 mths  |                          |   |    |  |     |     |   |     |                 |    |
| 3.225   | discrepancy between expressive language and comprehension                               |                          |   |    |  |     |     |   |     |                 |    |
| Phonology:  |   |                          |   |    |  |     |     |   |     |                 |    |
| 3.226   | stopping  |                          |   |    |  |     |     |   |     |                 |    |
| 3.227   | fronting  |                          |   |    |  |     |     |   |     |                 |    |
| 3.228   | backing   |                          |   |    |  |     |     |   |     |                 |    |
| 3.229   | deletion of final consonants  |                          |   |    |  |     |     |   |     |                 |    |
| 3.230   | simplification of clusters  |                          |   |    |  |     |     |   |     |                 |    |
| 3.231   | deletion of unstressed syllables  |                          |   |    |  |     |     |   |     |                 |    |
| 3.232   | reduplication   |                          |   |    |  |     |     |   |     |                 |    |
| 3.233   | consonant harmony   |                          |   |    |  |     |     |   |     |                 |    |
| 3.234   | consonants replaced by glottals   |                          |   |    |  |     |     |   |     |                 |    |
| 3.235   | consonants replaced by /h/  |                          |   |    |  |     |     |   |     |                 |    |
| 3.236   | limited range of consonants   |                          |   |    |  |     |     |   |     |                 |    |
| 3.237   | vowels distorted  |                          |   |    |  |     |     |   |     |                 |    |
| 3.238   | use of non-English sounds   |                          |   |    |  |     |     |   |     |                 |    |
| 3.239   | inconsistent use of sounds  |                          |   |    |  |     |     |   |     |                 |    |
| 3.240   | words have little similarity to adult target  |                          |   |    |  |     |     |   |     |                 |    |
| 3.241   | processes are appropriate for child's CA  |                          |   |    |  |     |     |   |     |                 |    |
| 3.242   | impossible to work out the major processes through general listening during the session |                          |   |    |  |     |     |   |     |                 |    |
| 3.243   | child self-corrects   |                          |   |    |  |     |     |   |     |                 |    |
| 3.244   | other   |                          |   |    |  |     |     |   |     |                 |    |
| <u>3.3 Speech</u>   |   |                          |   |    |  |     |     |   |     |                 |    |
| 3.31  | lateralization/ palatization  |                          |   |    |  |     |     |   |     |                 |    |
| 3.32  | hypernasal  |                          |   |    |  |     |     |   |     |                 |    |
| 3.33  | hyponasal   |                          |   |    |  |     |     |   |     |                 |    |
| 3.34  | can copy sounds in isolation  |                          |   |    |  |     |     |   |     |                 |    |
| 3.35  | can copy sound sequences (eg /p,t,k/)   |                          |   |    |  |     |     |   |     |                 |    |
| 3.36  | nonfluent   |                          |   |    |  |     |     |   |     |                 |    |
| 3.37  | has a husky breathy voice   |                          |   |    |  |     |     |   |     |                 |    |
| The following were all within normal limits for the child's age |   |                          |   |    |  |     |     |   |     |                 |    |
| 3.38  | resonance   |                          |   |    |  |     |     |   |     |                 |    |



|  |   | was this feature present |   |    | How important was it in your decision making |     |     |   |     | Did it make you |    |  |
|--|---|--------------------------|---|----|--|-----|-----|---|-----|-----------------|----|--|
|  |   | Y                        | N | DK | Not  | Not | Imp | V | Cru | P               | NP |  |
| 3.39   | rhythm  |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.310  | stress patterns   |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.311  | vocal quality   |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.312  | intonation  |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.313  | output generally seems effortful                          |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.314  | speed of output is normal                                 |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.315  | other   |                          |   |    |  |     |     |   |     |                 |    |  |
| <b>3.4 Expressive language quantity</b>          |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.41   | silent throughout the session                             |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.42   | used less than 20 utterances                              |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.43   | used 20-30 utterances during the session                  |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.44   | used more than 30 utterances during the session           |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.45   | other   |                          |   |    |  |     |     |   |     |                 |    |  |
| <b>Parent reports:</b>                           |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.46   | child is quite silent at home                             |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.47   | child plays quietly at home                               |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.48   | other   |                          |   |    |  |     |     |   |     |                 |    |  |
| <b>3.5 Intelligibility</b>                       |   |                          |   |    |  |     |     |   |     |                 |    |  |
| <b>Parents reports:</b>                          |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.51   | intelligible to parent all the time                       |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.52   | intelligible to parents some of the time                  |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.53   | intelligible to the rest of the family                    |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.54   | intelligible to strangers                                 |                          |   |    |  |     |     |   |     |                 |    |  |
| <b>Therapist conclusions:</b>                    |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.55   | unintelligible to therapist                               |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.56   | 50% unintelligible to therapist                           |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.57   | 75% unintelligible to therapist                           |                          |   |    |  |     |     |   |     |                 |    |  |
| <b>3.6 Child's interaction with therapist</b>    |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.61   | made eye contact with therapist                           |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.62   | cautious with therapist                                   |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.63   | accepts proffered hand                                    |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.64   | able to turntake  |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.65   | chatters throughout session but not interested in answers |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.66   | other   |                          |   |    |  |     |     |   |     |                 |    |  |
| <b>3.7 Child's interaction with parent/carer</b> |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.71   | actively rejects interactions from mother                 |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.72   | made eye contact with mother                              |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.73   | initiated communication                                   |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.74   | seemed to be in a dreamworld                              |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.75   | went to parent during the session                         |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.76   | ignored parent's attempts at interaction                  |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.77   | ignores mother's questions                                |                          |   |    |  |     |     |   |     |                 |    |  |
| 3.78   | other   |                          |   |    |  |     |     |   |     |                 |    |  |
| <b>SECTION IV GENERAL ASSESSMENT</b>             |   |                          |   |    |  |     |     |   |     |                 |    |  |
| <b>4.1 Child's attention</b>                     |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.11   | poor listening skills                                     |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.12   | attends well to sound                                     |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.13   | poor attention  |                          |   |    |  |     |     |   |     |                 |    |  |

|   |   | was this feature present |   |    | How important was it in your decision making |     |     |   |     | Did it make you |    |  |
|---|---|--------------------------|---|----|--|-----|-----|---|-----|-----------------|----|--|
|   |   | Y                        | N | DK | Not  | Not | Imp | V | Cru | P               | NP |  |
| 4.14  | poor concentration  |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.15  | little attention for anything in the room   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.16  | focuses better when receiving adult support   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.17  | distractibility falls within normal range   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.18  | responds to normal management strategies  |                          |   |    |  |     |     |   |     |                 |    |  |
| Reynell attention:                                      |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.19  | stage 1   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.110   | stage 2   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.111   | stage 3   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.112   | stage 4 or over   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.113   | has a level of attention which allows them to gain from their environment                 |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.114   | has poor self-monitoring skills   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.115   | other   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.2 Child's cognitive level                             |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.21  | cognitive abilities are at a similar level to speech and language                         |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.22  | other   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.3 Presence of motor problems                          |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.31  | sitting and walking milestones are within normal limits                                   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.32  | poor fine motor skills  |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.33  | nonverbal dyspraxia   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.34  | clumsy  |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.35  | general delay in motor milestones   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.36  | other   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.4 Play  |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.41  | poor play skills  |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.42  | plays well in clinic  |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.43  | obsessive play  |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.44  | unusual play  |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.45  | interested in large doll play   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.46  | interested in small doll play   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.47  | sequential play used during session   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.48  | plays well at home  |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.49  | desire for sameness in session  |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.410   | appropriate use of toys   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.411   | other   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.5 Modification forced on therapist by child Behaviour |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.51  | child allows therapist/carer to intervene in activities                                   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.52  | therapist has to be very firm   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.53  | therapist has to coax towards interaction   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.54  | therapist has to remain in the background in order to establish interaction in the clinic |                          |   |    |  |     |     |   |     |                 |    |  |
| Language:   |   |                          |   |    |  |     |     |   |     |                 |    |  |

|   |   | was this feature present |   |    | How important was it in your decision making |     |     |   |     | Did it make you |    |  |
|---|---|--------------------------|---|----|--|-----|-----|---|-----|-----------------|----|--|
|   |   | Y                        | N | DK | Not  | Not | Imp | V | Cru | P               | NP |  |
| 4.55  | child needs quieter voice   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.56  | child requires shorter utterances   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.57  | other   |                          |   |    |  |     |     |   |     |                 |    |  |
| <u>4.6 Emotional status of child</u>          |   |                          |   |    |  |     |     |   |     |                 |    |  |
| Child is:                                     |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.61  | unhappy   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.62  | withdrawn   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.63  | soiling   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.64  | jealous of siblings   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.65  | confident   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.66  | unusual behaviours present in child   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.67  | child's emotional state is the result of speech and language problems                     |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.68  | severe emotional problems   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.69  | emotional problems are more severe than speech and language difficulty                    |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.610   | eating problems   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.611   | child clings to mother throughout the session   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.612   | child cries throughout session and is generally upset                                     |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.613   | child seems frightened by playgroup/nursery   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.614   | child is able to separate from parent (to go to nursery/playgroup)                        |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.615   | other   |                          |   |    |  |     |     |   |     |                 |    |  |
| <u>4.7 Behaviour problems</u>                 |   |                          |   |    |  |     |     |   |     |                 |    |  |
| Observed or reported:                         |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.71  | temper tantrums   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.72  | biting  |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.73  | climbs over the furniture   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.74  | chases around the clinic room   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.75  | manipulative behaviour  |                          |   |    |  |     |     |   |     |                 |    |  |
| Therapist conclusions:                        |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.76  | has no deviant social problems  |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.77  | language problems and subsequent behaviour problems causing problems for the whole family |                          |   |    |  |     |     |   |     |                 |    |  |
| 4.78  | other   |                          |   |    |  |     |     |   |     |                 |    |  |
| <u>SECTION V PARENTS'/CARER'S ENVIRONMENT</u> |   |                          |   |    |  |     |     |   |     |                 |    |  |
| <u>5.1 Parent's view of the problem:</u>      |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.11  | Parent initiated referral   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.12  | Parent contacted therapist for sooner appointment   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.13  | Parent requested support from child guidance/psychotherapy                                |                          |   |    |  |     |     |   |     |                 |    |  |
| Parents commented during the session:         |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.14  | feeling guilty about the child's communication difficulty                                 |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.15  | they are very worried about the child's communication difficulty                          |                          |   |    |  |     |     |   |     |                 |    |  |

|                             |  | was this feature present |   |    | How important was it in your decision making |     |     |   |     | Did it make you |    |  |
|-----------------------------|--|--------------------------|---|----|--|-----|-----|---|-----|-----------------|----|--|
|                             |  | Y                        | N | DK | Not  | Not | Imp | V | Cru | P               | NP |  |
| 5.16                        | they had suspected a problem prior to identification by referrer or other person                     |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.17                        | they are seeking reassurance only  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.18                        | the appointment is a waste of time   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.19                        | attended only at HVs suggestions   |                          |   |    |  |     |     |   |     |                 |    |  |
| Parent asked:               |  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.110                       | do you see many like this?   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.111                       | will s/he get better?  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.112                       | will s/he be teased at school  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.113                       | lots of questions during the session   |                          |   |    |  |     |     |   |     |                 |    |  |
| Parent compared child to:   |  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.114                       | others in family   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.115                       | other children   |                          |   |    |  |     |     |   |     |                 |    |  |
| Therapist's view:           |  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.116                       | parent's level of concern is appropriate to child's level of difficulty                              |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.117                       | when asked for their view of the child, the child's language problem is the first thing talked about |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.118                       | child's problem is seen as a big issue by the family   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.119                       | parent has realistic views of the child's language development                                       |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.120                       | parent missing the point of what therapist says because of their own view                            |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.121                       | parent insisting child 'can do it' or 'can't do it' in clinic  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.122                       | nonverbal signs of anxiety in parent   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.123                       | other  |                          |   |    |  |     |     |   |     |                 |    |  |
| <u>5.2 Parenting skills</u> |  |                          |   |    |  |     |     |   |     |                 |    |  |
| Parent report:              |  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.21                        | has organized visits to friends to give child social contacts  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.22                        | 'he understands everything I say'  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.23                        | time is spent looking at books with child  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.24                        | time is spent playing with child   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.25                        | sings songs to child   |                          |   |    |  |     |     |   |     |                 |    |  |
| parent observed in clinic:  |  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.26                        | using appropriate level of language with the child   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.27                        | using appropriate intervention strategies  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.28                        | makes negative remarks about the child in clinic   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.29                        | smacks child in clinic   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.210                       | controls child's behaviour   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.211                       | ignores child  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.212                       | responsive the child's initiations in clinic   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.213                       | takes a dominant role  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.214                       | overtalkative parent who did not listen  |                          |   |    |  |     |     |   |     |                 |    |  |
| Therapist conclusions:      |  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.215                       | parent able to express views of the child's problem clearly  |                          |   |    |  |     |     |   |     |                 |    |  |

|                                  |   | was this feature present |   |    | How important was it in your decision making |     |     |   |     | Did it make you |    |  |
|----------------------------------|---|--------------------------|---|----|--|-----|-----|---|-----|-----------------|----|--|
|                                  |   | Y                        | N | DK | Not  | Not | Imp | V | Cru | P               | NP |  |
| 5.216                            | parent gives appropriate tasks/toys for child                                       |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.217                            | parent has objective view of the child  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.218                            | parent responds appropriately to suggestions of therapist                           |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.219                            | parent had rigid views of what the child should achieve                             |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.220                            | parent had rigid views of how child should behave                                   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.221                            | parent is interested in child   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.222                            | parent has insight into severity of child's problem                                 |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.223                            | other   |                          |   |    |  |     |     |   |     |                 |    |  |
| <u>5.3 Parent's co-operation</u> |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.31                             | willing to be adaptable for appointment times                                       |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.32                             | happy to follow therapist's lead during a session                                   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.33                             | prepared to attend for further appointments   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.34                             | previously failed to attend   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.35                             | other personal/family appointments taking priority                                  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.36                             | under too much stress to be able to cope with therapy                               |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.37                             | appreciates the 'teacher' role of a parent  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.38                             | parent interested in therapy  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.39                             | casual attitude to questions being asked  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.310                            | other   |                          |   |    |  |     |     |   |     |                 |    |  |
| <u>5.4 Environment</u>           |   |                          |   |    |  |     |     |   |     |                 |    |  |
| Parent's marital status:         |   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.41                             | married   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.42                             | single  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.43                             | divorced  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.44                             | divorced recently   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.45                             | separated   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.46                             | separated recently  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.47                             | mother works full-time  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.48                             | part-time   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.49                             | father works full-time  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.4910                           | part-time   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.4911                           | child being teased or bullied in nursery or at home                                 |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.412                            | mother is receiving counselling/support for depression or other psychiatric illness |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.413                            | child has access to play opportunities  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.414                            | child has a range of toys at home   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.415                            | child has access to a range of talking partners                                     |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.416                            | child watches television at home  |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.417                            | child plays alone at home   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.418                            | elder children talk for the child   |                          |   |    |  |     |     |   |     |                 |    |  |
| 5.419                            | mother or father's medical condition likely to                                      |                          |   |    |  |     |     |   |     |                 |    |  |

|   | was this feature present |   |    | How important was it in your decision making |     |     |   |     | Did it make you |    |
|---|--------------------------|---|----|--|-----|-----|---|-----|-----------------|----|
|   | Y                        | N | DK | Not  | Not | Imp | V | Cru | P               | NP |
| make attendance difficult   |                          |   |    |  |     |     |   |     |                 |    |
| 5.420 child is babied by family   |                          |   |    |  |     |     |   |     |                 |    |
| 5.421 parent is protective of child   |                          |   |    |  |     |     |   |     |                 |    |
| 5.422 child has limited social experience   |                          |   |    |  |     |     |   |     |                 |    |
| 5.423 child on at risk register   |                          |   |    |  |     |     |   |     |                 |    |
| 5.424 other   |                          |   |    |  |     |     |   |     |                 |    |
| <u>SECTION VI CHILD</u>   |                          |   |    |  |     |     |   |     |                 |    |
| <u>6.1 child's ability to cope with therapy</u>   |                          |   |    |  |     |     |   |     |                 |    |
| 6.11 exceptionally shy and withdrawn  |                          |   |    |  |     |     |   |     |                 |    |
| 6.12 too immature to cope with intervention   |                          |   |    |  |     |     |   |     |                 |    |
| 6.13 co-operates well   |                          |   |    |  |     |     |   |     |                 |    |
| 6.14 poor co-operation likely to continue even after several sessions                   |                          |   |    |  |     |     |   |     |                 |    |
| 6.15 other  |                          |   |    |  |     |     |   |     |                 |    |
| <u>6.2 Child's awareness of problem</u>   |                          |   |    |  |     |     |   |     |                 |    |
| 6.21 little interest in speech  |                          |   |    |  |     |     |   |     |                 |    |
| 6.22 does not seem to need to be understood   |                          |   |    |  |     |     |   |     |                 |    |
| 6.23 aware that s/he is not being understood  |                          |   |    |  |     |     |   |     |                 |    |
| 6.24 aware of the nature of the difficulty  |                          |   |    |  |     |     |   |     |                 |    |
| 6.25 enjoys and seeks interaction   |                          |   |    |  |     |     |   |     |                 |    |
| 6.26 monitoring listener reaction   |                          |   |    |  |     |     |   |     |                 |    |
| 6.27 able to discriminate mistakes in someone else's language                           |                          |   |    |  |     |     |   |     |                 |    |
| 6.26 confident approach to communication  |                          |   |    |  |     |     |   |     |                 |    |
| 6.29 clams up when not understood   |                          |   |    |  |     |     |   |     |                 |    |
| 6.210 has insight into problem  |                          |   |    |  |     |     |   |     |                 |    |
| 6.211 motivated to communicate  |                          |   |    |  |     |     |   |     |                 |    |
| 6.212 other   |                          |   |    |  |     |     |   |     |                 |    |
| <u>6.3 Child's motivation to change</u>   |                          |   |    |  |     |     |   |     |                 |    |
| 6.31 unconcerned about difficulties   |                          |   |    |  |     |     |   |     |                 |    |
| 6.32 interested in getting speech better  |                          |   |    |  |     |     |   |     |                 |    |
| 6.33 other  |                          |   |    |  |     |     |   |     |                 |    |
| <u>SECTION VII DECISION SUMMARY</u>   |                          |   |    |  |     |     |   |     |                 |    |
| <u>7.1 Prognosis</u>  |                          |   |    |  |     |     |   |     |                 |    |
| 7.11 good   |                          |   |    |  |     |     |   |     |                 |    |
| 7.12 bad  |                          |   |    |  |     |     |   |     |                 |    |
| 7.13 causative factors are resolving spontaneously                                      |                          |   |    |  |     |     |   |     |                 |    |
| 7.14 causative factors are being dealt with by another agency                           |                          |   |    |  |     |     |   |     |                 |    |
| 7.15 other  |                          |   |    |  |     |     |   |     |                 |    |
| <u>7.2 Predicted effectiveness of intervention</u>                                      |                          |   |    |  |     |     |   |     |                 |    |
| 7.21 intervention likely to be effective  |                          |   |    |  |     |     |   |     |                 |    |
| 7.22 causative factors could be eliminated with intervention                            |                          |   |    |  |     |     |   |     |                 |    |
| 7.23 intervention is likely to improve a child's communication environment              |                          |   |    |  |     |     |   |     |                 |    |
| 7.24 intervention is likely to reinforce parental anxieties                             |                          |   |    |  |     |     |   |     |                 |    |
| 7.25 child is stimuable   |                          |   |    |  |     |     |   |     |                 |    |
| 7.26 amount of intervention required to be effective<br><i>Outweighs likely results</i> |                          |   |    |  |     |     |   |     |                 |    |

|  |  |  |
|--|--|--|
| 7.27   | amount of intervention required to be effective is not available |  |
| 7.28   | other  |  |
| <u>7.3 Diagnostic category</u>                                     |  |  |
| 7.31   | language delay   |  |
| 7.32   | language disorder  |  |
| 7.33   | phonological difficulty only                                     |  |
| 7.34   | dysarthria   |  |
| 7.35   | dyspraxia  |  |
| 7.36   | voice disorder   |  |
| 7.37   | fluency disorder   |  |
| 7.38   | other  |  |
| <u>7.4 Severity of communication problems</u>                      |  |  |
| 7.41   | mild   |  |
| 7.42   | moderate   |  |
| 7.43   | severe   |  |
| 7.44   | profound   |  |
| <u>SECTION VIII OUTCOME ASSESSMENT</u>                             |  |  |
| Please tick or respond more fully where indicated#                 |  |  |
| <u>8.1 Referral on</u>   |  |  |
| To other professional:   |  |  |
| 8.11   | instead of speech therapy (please specify)                       |  |
| 8.12   | as well as speech therapy  |  |
| 8.13   | to more specialised speech therapy (Please specify)              |  |
| 8.14   | other  |  |
| <u>8.2 No further action</u>                                       |  |  |
| 8.21   | Advice given, not taken on                                       |  |
| 8.22   | No advice necessary; not taken on                                |  |
| 8.23   | other  |  |
| <u>8.3 See again</u>   |  |  |
| 8.31   | for intervention   |  |
| 8.32   | for further assessment   |  |
| 8.33   | group  |  |
| 8.34   | individual   |  |
| How soon do you plan to see them again                             |  |  |
| 8.35   | within one week  |  |
| 8.36   | within one month   |  |
| 8.37   | 2-4 mths   |  |
| 8.38   | 5-7 mths   |  |
| 8.39   | more than 7 mths   |  |
| <u>8.4 What will be the waiting time for regular intervention?</u> |  |  |
| 8.41   | 1 week   |  |
| 8.42   | 1 mth  |  |
| 8.43   | 2-4 mths   |  |
| 8.44   | 5-7 mths   |  |
| 8.45   | more than 7 mths   |  |
| <u>8.5 How regularly will you see the child?</u>                   |  |  |

|  |                         |  |
|--|-------------------------|--|
| 8.51   | once a week             |  |
| 8.52   | twice a week            |  |
| 8.53   | more than twice a week  |  |
| 8.54   | fortnightly             |  |
| 8.55   | once a month            |  |
| 8.56   | once every 6 weeks      |  |
| 8.57   | less than this          |  |
| <u>8.6 Length of treatment</u>                       |                         |  |
| How long do you anticipate that they will need help? |                         |  |
| 8.61   | don't know              |  |
| 8.62   | for a few sessions only |  |
| 8.63   | up to 6 mths            |  |
| 8.64   | up to 12 mths           |  |
| 8.65   | long term               |  |



## APPENDIX D

### COLLATION OF Sit's RATIONALES FOR QUESTIONS AND ACTIVITIES USED DURING INITIAL ASSESSMENT OF CHILDREN

Lack of progress shows that they can't respond to input/intervention which suggests a major problem. If they've not had input yet, then you need to know how they will respond to that.

Almost unethical to treat children who get support from other people

Performance at playschool and nursery were indicators of the child's dependency, how he might cope in the group, what strategies might be needed to cope with him. Indications for a groups were strong - the need to start him in a safer smaller environment so that he can then cope with normal playgroup/nursery and eventually school

The first thing a mother says is important. You can then start from a point where she's concerned and see her view of it. Need to <sup>get</sup> over the idea that we're not going to take him away and make him better, but that we value her role and her involvement.

Individual therapy creates a situation where pressure on him as an individual can't be relieved whereas the group allows him a way out. But separation from mother is a problem

This is a child for review because the conductive loss had been undetected would explain the way he behaves or his speech and language

I thought this child is quite well adjusted for what he's been through so I thought you're a child for review

..if its a preschool nonfluent child, I'd take that child on.. that's only because I think I might prevent something..

you're saying that if there are things in the history that account for (the problem) that are now sorted out, that may influence you in a positive way?..yes

because if a child isn't happy, that can impede his development, plateau maybe

you've got to give them a chance in the best environment.. and then I look at it again and see what's happened when its been alright for a year.

if a child's not happy or is being abused then I think I wouldn't expect language to develop in a normal way../. given that kind of background, what he's presenting with is not unusual and therefore nothing to worry about.

I think a lot of severe language disorders are linked to abnormal play and also because the link between language and symbolic play has been fairly well

established and I think the therapist can start working on play to influence the language, that can be a starting point

..(possible genetic basis considered as part of investigation of a reason.) you're saying it doesn't necessarily influence your decision that the decision still rests on the severity of the problem/.. yes it would really

..I think one of the most important factors in whether you take a child on for therapy or not is the amount of progress they make within a specified time because ..if they seem /to be making progress on their own I tend not to see them, I'm really looking for lack of progress or some deviation ..

..on the whole if mothers are concerned there's often a reason for the concern I suppose because I feel that mothers have some knowledge of their own child and I think they do compare them all the time .. I think it would influence me to be more careful with the assessment.

if you can gauge how concerned the parents are it gives you a measure of how much insight they have into the problem, whether they are realistically viewing the problem for what it is, their acceptance of any problem that might be there. And also that's going to have important implications for how you manage it, it might take a lot of time to actually explain things to them before they fully understand the nature of the problem and then can help with therapy... cos if that child's going to get any benefit at all from a speech and language assessment and therapy, ideas are going to have to be followed up at home. I think its important that parents do realise that they're the ones who're going to influence it and if they're going to help, they need to understand what the problem is.

..Re the discrepancy).. that's to do with the severity of the disorder, the nature of the delay..

preference for preschool work --- seeing the school age child and all the liaison that it involves which is time consuming..and also at preschool, the parents are with the children a lot more and reinforce the ideas at home which isn't so easy when the child has a full day at school doing it in the evenings.

child awareness isn't something I would consciously use to influence whether or not we intervene but its always there at the back of my mind about how successful intervention will be

if you're going to have more success in terms of individual therapy

.. I can discharge them and take another one off the waiting list..

because perhaps that's unlikley to be successful and you've got to look for other ways of intervening..

if you're going to do regular therapy, once a week is like a drop in the ocean unless you're going to have support and reinforcement from home by the family any

therapy is going to be unsuccessful right from the start. So unless they're able to make that commitment and support the therapy it's not going to work..

..the mother will be doing all the right things and with just a little bit of advice and support and practical ideas, that child will develop and come on of their own accord really without us having to do much face-to-face work.

therapy intervention is going to be successful

if the child is currently waiting for treatment, ENT anything like that...working on phonology..isn't really going to be effective..

because they're the ones who need intervention to progress whereas the children with mild delay are more likely to succeed with minimal intervention or short periods of intervention

the more professionals involved in a case points to the greater severity of the problem, so from that point of view we should intervene and it should be a priority but you've got to think of the family's ability to cope with it at the time and we don't want to be duplicating work that another professional's carrying out

there's no point in giving advice if the parents are not concerned  
..to give an indication of possible starting points for intervention

evidence of quick learning

to see if the child could be moved on from a exploration of toys, could the child use ideas given by the therapist

the parent wasn't interested and I felt they probably wouldn't turn up again

if it was only their play or only their interaction, you probably wouldn't (see them again) whereas if you felt it was a more central language problem (you would see them again)

**APPENDIX E**  
**EXAMPLE OF SGN ANALYSIS**  
**CHARACTERISTICS OF THE PRIORITY CHILD**

Section 8.4 showed the general stages of analysis that took place using SGNs. This appendix gives more detail on that process by showing the stages in the development of a particular network: characteristics of a priority child.

**E.1. COLLATION OF RELEVANT ITEMS**

Nearly 100 items were identified from the interview analyses as relevant to the topic of 'characteristics of a priority child. They are listed at the end of this appendix in section E.7. Such statements often represented a summary of several pages of discussion which terminated in the interviewer's summary of the situation. The statements are nonetheless taken directly from interview data and are either statements made by the expert slts or statements made by the researcher which were agreed by the experts, either at the time or through the respondent validation exercises, to be summaries of their views. They were taken out of context in order to collate the items; however the context was referred to if there was any doubt about the meaning of an item.

**E.2. IDENTIFICATION OF MAIN CATEGORIES**

The items were analysed to identify the key variables. Eight broad categories (figure E1) emerged from this analysis shown in section E.7. Some items appear several times under different categories because a statement contains several features. For example,

"in dysfluency, the child's awareness is a criteria of assessment, a warning sign".

This item contains a reference to the type of disorder under consideration as well as to the secondary effects of that problem on the child. Items which were associated exclusively with prioritisation decisions in RV3 were also included in this analysis and fitted comfortably in with the categories outlined.

|  |
|--|
| Degree and type of communication problems                    |
| Secondary problems   |
| Associated problems  |
| Progress   |
| Family approach related to the child's communication problem |
| Causation  |
| Family history   |
| Support available  |

**Figure E1 Categories for the priority child network**

The rationale for these eight categories will now be outlined.

**Degree and type of communication problem:** Descriptions gave an account of the degree or severity of the problem,

"borderline language achievement"

"more unusual sound system"

its disparity with normative information,

"comprehension loss of more than one year"

"an imbalance between speech and language and the rest of development"

In addition or instead, the description included the type of communication problem by specifying the area of difficulty,

"intelligibility is quite an important indicator"  
and/or the way in which that area was affected.

"strange intonation"

"specific language delay"

"dyspraxic features"

**Secondary problems:** Items giving rise to this category specified some knock-on effect of the communication disorder.

"child's behaviour might be linked to frustration if he's unable to communicate".

**Associated problems:** Although similar to the previous category, in this category, a causative link with the communication problem was not made but the two conditions were merely juxtaposed.

"I would see that as a negative thing if the play was delayed or abnormal in some way".

**Progress:** Although a separate network was planned relating to progress, in the process of collecting items for the priority child network, a number of items were included which viewed of the lack of progress made by a child as a significant feature. They were retained within this network for the early stages of the analysis. Items in this category referred to negative aspects such as "deviant progress" or the absence of progress. For example

"lack of progress shows that they can't respond to input/intervention which suggests a major problem"

**Family approach in relation to the child's communication problem:** Items giving rise to this category referred to some attitude or action on the part of the family, usually the parents. Typically items had negative connotations, whereas a similar group of items within the nonpriority child category had positive connotations.

"if mums are concerned there's often a reason for that".

**Causation:** A number of items mentioned factors which might be causative of the communication problem. For example,

"where a causative factor can be eliminated by the intervention"

"epileptic attack made me think there's more to this than meets the eye"

**Family history:** A single item referred to the influence of family history. This could perhaps have been absorbed within the previous category, particularly as family history was accorded a relatively low importance level during RV3. However, at the time of analysis, it was decided to keep it separate rather than absorbing it too early within another category. The item included the following statement:

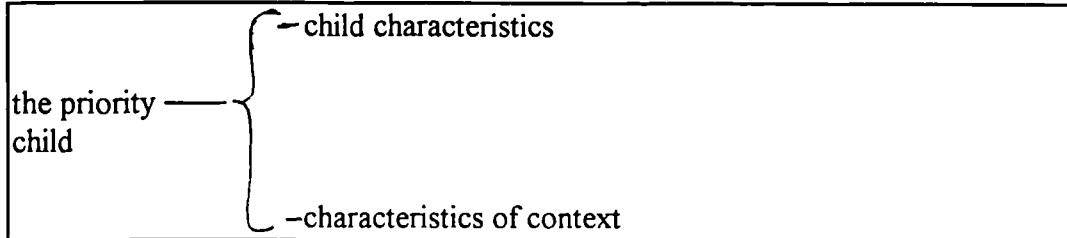
"priority where the family history suggests unresolving problems".

**Support available:** The final category was again built upon only a small number of items, but at this stage was not felt to be adequately reflected elsewhere. Items giving rise to this category talked of the support available for the child or family with respect to the communication disorder. Resources and provision were mentioned that were related to a specific influence on a particular child, for example:

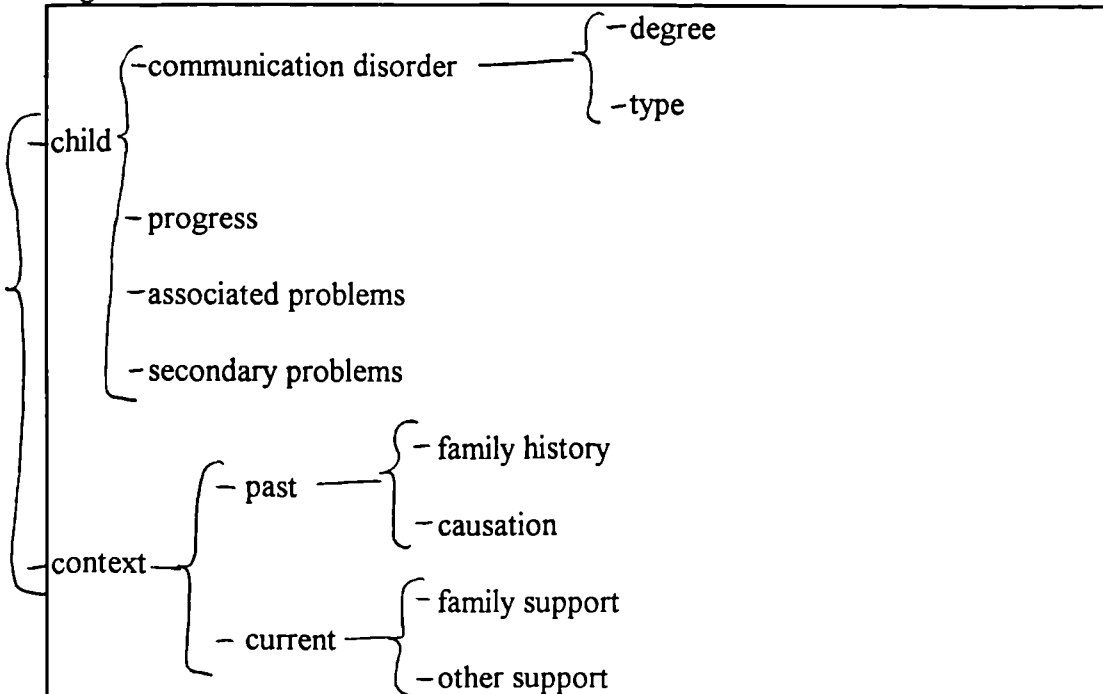
"child's needs not being met elsewhere".

### E.3. FIRST NETWORK

These eight categories represent the start of the analysis for this SGN. They seemed to fall into two groups: the first covered those features which were directly descriptive of the child's communication problems; the second comprised aspects of the child's context which have in the past or in the present had an effect on the child's communication development. (Fig E2) Figure E3 shows how the above categories relate to this simple dichotomy.



**Fig E2 Two main co-selections**



**Fig E3 First network in the development of the Characteristics of the Priority Child**

The representation in figure E3 postulates that

- significant features of the priority child will include characteristics of both the child and his context;
  - the child can be described in terms of the communication disorder (its degree and type), associated and secondary problems and the child's progress;
  - the context of the child includes current and past features;
  - the past context will include family history of communication disorders and causative factors of the communication disorder;
- the current context will include approaches within the family towards the communication disorder and also the range of support available to the child from sources outside the family and not SLT.

At each point in the development of the network, as categories were identified, the interview data was scanned again for any relevant items that may have been missed in the first stage of collation. In this way the use of the network analysis facilitated growing

insight into the data and meant that further scans of the data were conducted with a growing insight and understanding.

#### **E.4. INCREASING THE DELICACY**

Next, a simple expansion of the network was made by pursuing each term to a finer level of delicacy. So for example, analysis of the causative factors suggested that slts considered significant medical problems related to communication difficulties and might indicate that the child's communication difficulty was of high priority (such as autism), the persistence of the communication disorder even though a potential causative factor had been eliminated or the existence of a potential causative or maintaining factor which might be amenable to intervention (for example, mishandling of the problem in some way by the family). This stage of analysis is shown in figure E4. In this representation each terminal from the previous network was pursued to a finer level of delicacy.

The degree of difficulty is now described either in terms of its severity or its discrepancy from the norm. The type of problem includes the area of communication affected and how it is affected whether delayed or deviant/disordered. The area of communication affected includes comprehension, expression or interaction. Further levels of delicacy for expression suggest quantitative and qualitative components; within the qualitative component, speech, language or intelligibility is described.

Associated and secondary problems have been further specified in terms of the developmental areas involved such as social, emotional, cognitive etc..

relevant variables for the consideration of progress are included, showing the period of time under consideration (specifically 3-6 months), the aspect of communication (comprehension or expression), the nature of the progress (whether there is little or no progress or where the progress is regarded as deviant); the context in which negative progress has occurred is also considered, for example, a change to the child's environment such as foster care or medical intervention such as the insertion of grommets.

An evaluation of this network by taking items of data and coding them onto the network showed the following problems:

- associated and secondary problems were also sometimes described in terms of the degree of difficulty but not necessarily in terms of discrepancies;

- discrepancies were further differentiated in terms of a measure of how big the discrepancy was and in which area;

  - potential anxiety was often described in terms of the appropriacy and amount;

- case history information also sought out significant features of the child's language development history;

An evaluation of potential paradigms revealed some problems with the structure of the network:

- many of the exclusive alternatives could sometimes, but not always co-occur. For example, the area of communication might include comprehension and/or expression and/or interaction;

- on the other hand, features which had been placed as co-occurring options would not always co-occur. For example, significant family history does not always co-occur

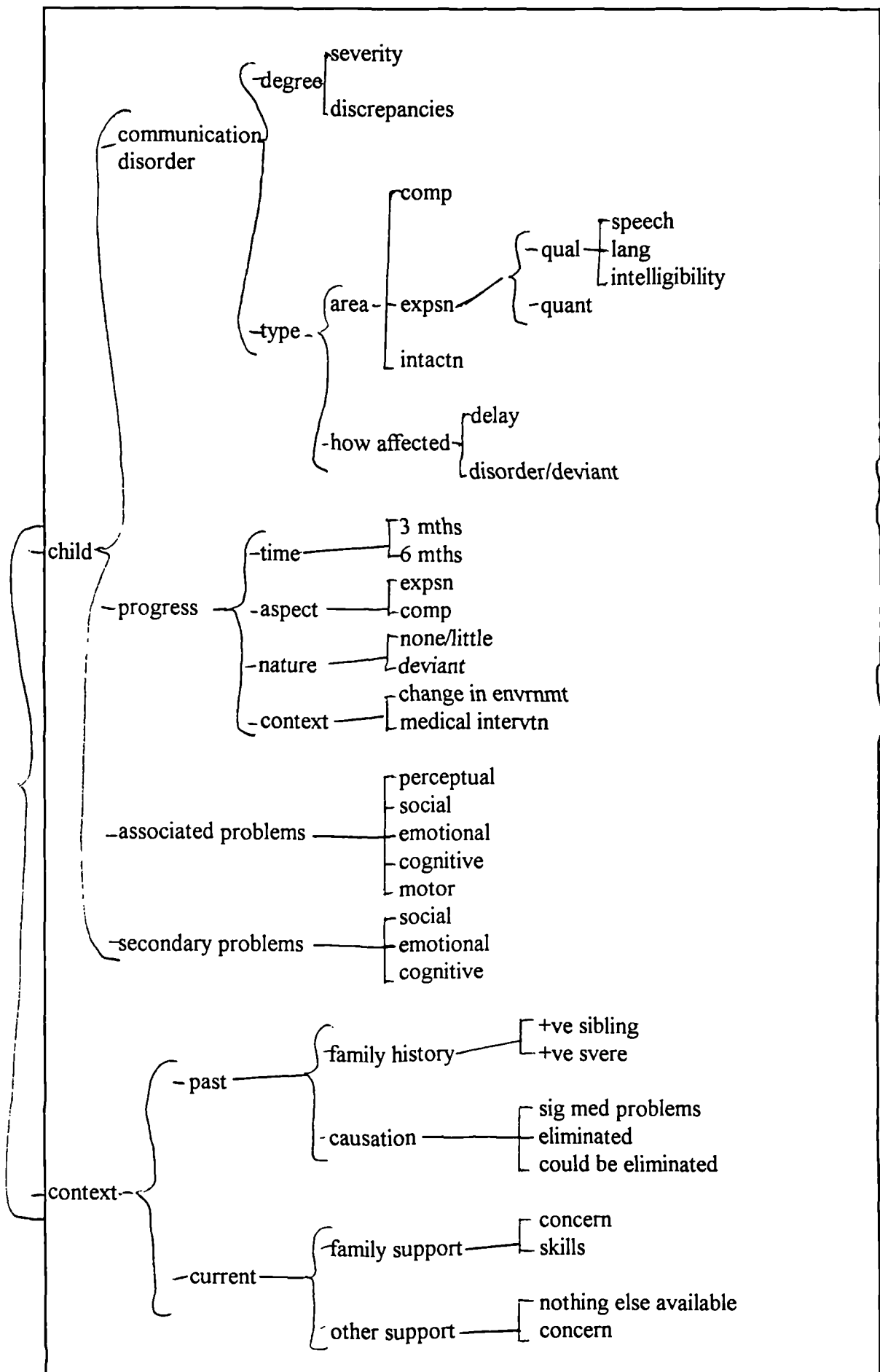


Figure E4. Increasing the levels of delicacy



with significant causative features;

A general evaluation of the economy and conceptual acceptability of the network also led to some dissatisfaction with the network. In particular:

past aspects, such as family history and causative aspects were perhaps better interpreted as characteristics of the child rather than his/her context, since they seemed to contribute to the view of the severity of the overall protocol;

since concern and the amount of support was an attribute of both family and of others (for example, nursery staff), this could be more economically expressed;

the analysis of only the priority aspects of progress produced quite a detailed section of network. It was decided that this would be better confined to the separate network planned for signs of change for reasons of economy.

With this evaluation in mind a new network was drawn up. (Figure E5)

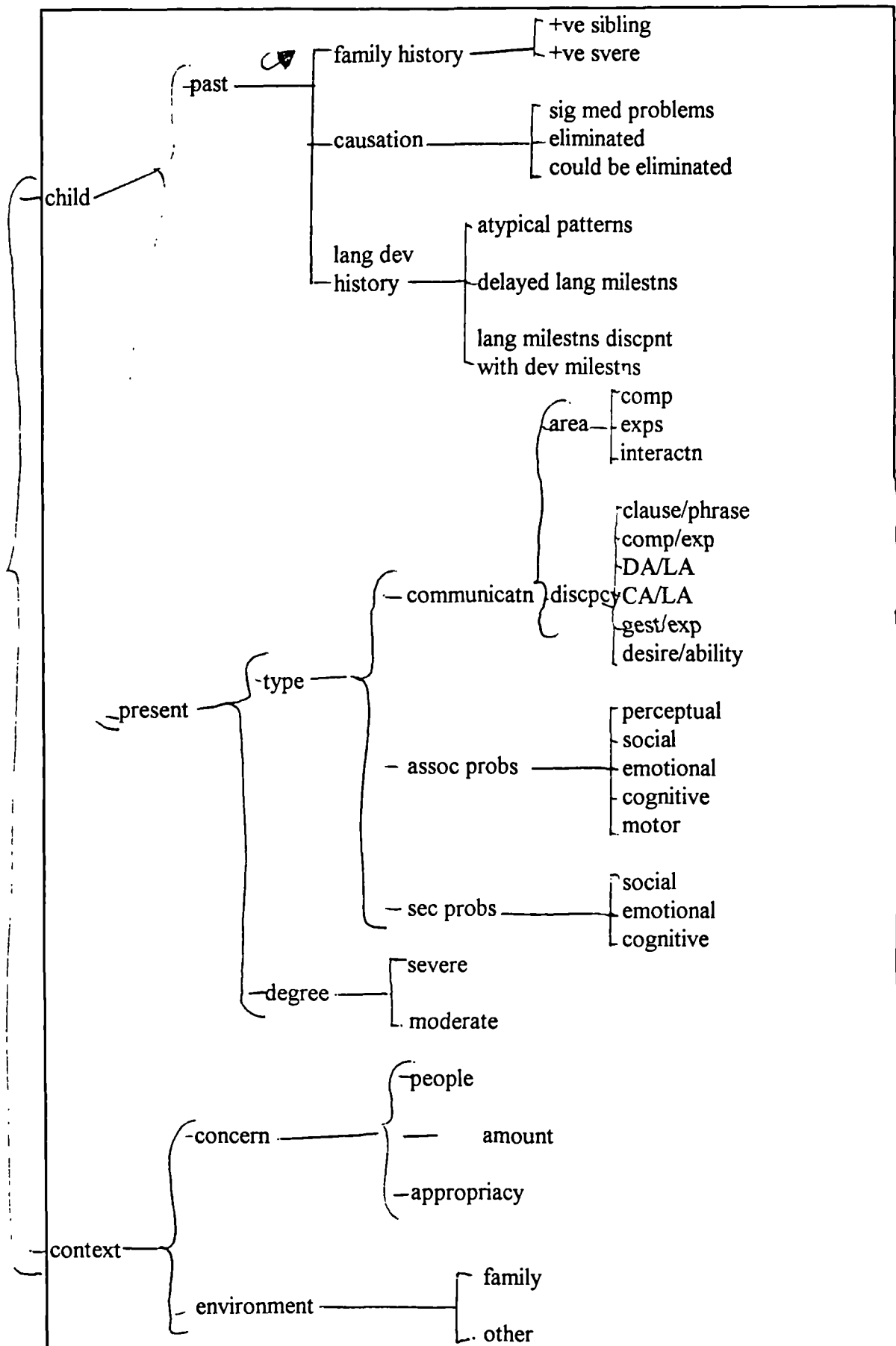


Figure E5. Reorganised priority child network

## E.5. FINAL CHECKS

The network in figure E5 shows a slightly extended range of categories with the child's language development history now included and the amount and appropriacy of adult concern. The structure shows a change in emphasis with the child's characteristics now including the past as well as the present features and the context focusing on the amount of concern and the child's environmental support. This network was submitted to a similar process of evaluation, including the coding of eight cases from the author's discharged case load with the following results:

although it adds significantly to slts' view of a child's priority status, priority children do not always exhibit associated and secondary symptoms. The attempt to represent this aspect more economically had led to an inappropriate emphases;

communication disorders were described in the data in terms of delay versus deviant or disorder; this has been omitted from this network;

in this network, discrepancies had been placed as an option within the category of communication problems. However, in the data, a discrepancy was sometimes comparing communication with some other aspect of development; it should perhaps therefore be represented at a similar level of delicacy as communication rather than as an attribute of it;

where there is an appropriate lack of concern, it is unlikely that the child will be considered as a priority - the two notions are contradictions; in order to retain the categories but exclude this anomaly, this particular combination could be shown as a restricted entry condition with a reverse BRA.

With these points in mind a fourth and final network was drawn up. (Figure E6)

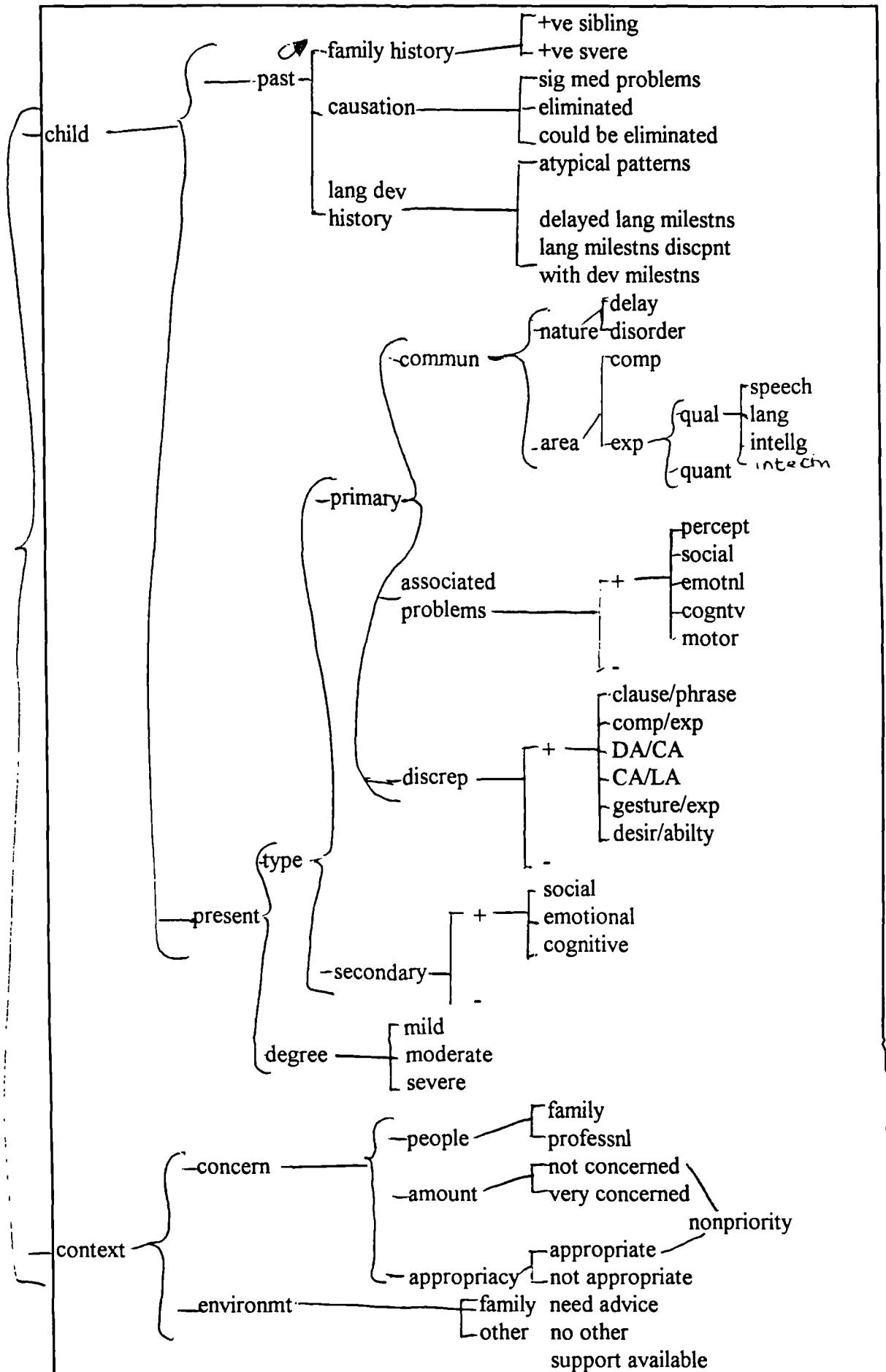


Figure E6 Characteristics of a priority child

## **E.6. THE FINAL NETWORK**

This was the network used for the next stage of the project which is described in the following chapter. Although it is presented as the 'final' network, For example, this network showed the potential combinations and some paradigms may never be instantiated. The balance between secondary and primary problems in terms of relative severity was not discernible from the data. So for example it was not clear how severe a secondary problem would have to be before a slt would prioritise a child with only a mild communication problem.

However, it was decided that further distinctions could not be supported from the data and that the networks should be presented back to slts in order to verify the current representation and to gather further data.

## **E.7. CHARACTERISTICS OF THE PRIORITY CHILD: STATEMENTS FROM THE DATA**

### **Degree and type of communication problems:**

Negative points summarised after a session:

borderline language achievement level

range/variability in language skills

quite hard to understand (the child) a lot of the time (MG summary)

..lack of interaction you felt was unnatural, it has a bearing on communication and suggests that something's going wrong for either the parent or child, so you'd be concerned if a child doesn't willingly interact with a mother, if a child actively rejects advances from the mother, lack of eye contact.. (MG1.5)... there'd have to be a communication problem as well (MG4.13)

it's the sort of child who doesn't make any attempt to communicate with the parent, doesn't perhaps go to the parent at all during the session, as an extreme, takes no notice if the mother tries to interact with the child, possibly actively discourages it. (MG 4.14)

if there were less than that (20-30 utterances during the session) (MG6.22)..talking to the parent and finding out if that's typical time for them (MG7.26)

the child who says very little and when they do say it, it seems quite an effort (MG6.23)

the one who's using very little (language) of what they've got, maybe the effort involved (MG7.25)

if you've got evidence of a specific language delay (MG10.38)

if the size of vocabulary is smaller(MG10.39)

whether the child's using lots of vague words like there and that (MG11.11)

intelligibility is quite an important indicator - the child where you're finding it extremely hard to tell what the child is saying where the processes are obviously delayed or deviant (MG11.44)

lack of consonants completely, use of glottals or /h/.. and ingressive fricative for /s/, its so effortful...if they're 2 and a half and they're still consistently deleting final consonants, that would make them unintelligible anyway (MG12.50)

its maybe the child who you can't actually work out the processes.. or the child's who's got very limited consonants maybe everything's /d/ (MG13.53)

I've got two children at the moment who've got very strange intonation which affect intelligibility enormously.. (MG14.58)in conjunction with other phonological problems as well (MG14.49)

if there's undue amount of jargon and very little intelligible to the mother, according to the child's age (MG15.64).. child who's nearly 3 who's really using more jargon.. than intelligible speech(MG15.65)

I'm looking at 6 months (discrepancy) but always bearing in mind the huge range of normal (MG17.73).. the time discrepancy isn't the same, its a graduation (dependent on age) (MG17.74)

then you've got ages and stages and when *they're quite apart that's quite a worry* (FG36)

so where there's a good prognosis and a child is likely to respond to therapy, you're going to prioritise (FG55)

those children who have very severe problems delay or disorder. Disordered children would get priority over a slight delay. A severe delay we'd prioritise (FG96)

severe delay = where the stage of a child's language development and his age show a marked discrepancy. He's following the normal language development but at a later age than you'd expect. Disorder is where the child's language patterns differ from the normal stages of language development (FG97)

the alarm bell rang when she said he doesn't always fetch what I ask him to fetch (SL14)

To have therapy and be going to school in September you have to be unintelligible or have a very deviant patter (SL28)

if its a preschool nonfluent child, I'd take that child on (SL39)

(things in history would not influence) if the child was so severe as to warrant further investigation or there was something very odd about the child (SL:79)

the decision still rests on the severity of the problem (SL98)

I'm really looking for lack of progress or some deviation some abnormal pattern or the severity of the delay (SL101)

a four year old who's got open syllable or a child who's sound system is very inconsistent or a child who's using non-english sounds (SL102)

what I call abnormal verbal play, I showed her pictures, if it was a car she'd say 'vetchacar' and then I'd show her a basket and she said 'thatsabat' and then I showed a chair and she'd say 'techacahir'. It was very repetitious and stereotyped but they were altered every time there was a slight alteration and it was said in a singsong way (SL103)

6 months delay or with a comprehension say 3 months. So say someone ..couldn't do 2 word activities at 3 years old and I gave the mum some ideas and she came back in 3 months and she was still at that stage then I would be quite concerned (SL104)

if mum is not concerned but you are very concerned?..I tend to bring them back more (SL108)

where there is an imbalance between speech and language development and the rest of development - at least a 12 month discrepancy (SL notes)

priority where family history suggests severe unresolving problems, eg, sibling in language unit (SL notes)

same principle for specific problems, but where problem is severe, still seen even though they're in nursery or where other problems exist, eg unusual features, dyspraxia, motor problems, 3 year old with single words. (SL notes)

severity of disorder; restricted sound system; hypernasality (SL notes)

comprehension loss of more than 1 year (SLnotes)

expressive delay of 12+ months, particularly 18-24 months(SLnotes)

dyspraxic features, imitation of gross sounds, sequencing of bilabials; nonverbal dyspraxias

nonfluency

voice

language problems + unintelligible /phonological problems

more unusual sound systems

unintelligible at 4 years (open syllables, all velars, unusual or very restricted sound system, nasals for bilabials, nasalised /s/)

greater priority when features occur together, are cumulative eg, poor comprehension + poor listening + poor expression (SL notes)

child seemed to cower and didn't look at therapist or mother. Thought oh dear (PG 2.2)

Obvious that there were immense problems communicating (PG2.3)

The child needed sameness - (play) wasn't creative and not typical of children, not social, seemed similar to other children causing concern as if he's trying to make sense of the world. This fitted in with a pattern of rigidity and language problems.. with a pattern of a language disordered child - can't risk being creative. he had some behaviours which would need awareness and monitoring eg biting (PG4.15)

Prioritise specific language problems over a general language delay (PG5.21)

significant degree of a particular problem; children with cleft palate, resonance problems, velopharyngeal insufficiency, head injured children, ward patients, feeding problems (PG 6.24)

the older the child, the less severe (the discrepancy) has to be in order to prioritise (RFp.3)

changing in a negative direction (such as) fronting to backing, gross inconsistencies, grossly wrong final consonants appearing, vowel problems. persistence of immature processes as more mature ones disappear, imbalance between clause and phrase structure, desire to express complex ideas but no ability to express them, eg a child who is obviously reasoning and predicting who can't express dependency, echoing, (RF notes, p3,4)

Alarm bells ring if mother doesn't understand or if the family don't understand (MBp.1)

children with a specific delay, clumsy (MBp.1)

patchy development +/- or clusters of symptoms(MBp.1)



if delay is more than 6 months-1year(MBp.1)

in dysfluency, the child's own awareness is a criteria of assessment, a warning sign. This is a higher priority than a child who is not aware in a 3-4 year old (MB p.2)

severity is the crucial factor

*Items from confirmatory exercise*

*does not hold a conversation*

*cannot answer questions*

*responses are not prompt*

*used less than 20 utterances during the session*

*did not make eye contact with parent/carer*

*did not initiate communication with parent/carer*

*speech and language development is not in line with physical development*

*child requires shorter sentences*

### **Secondary problems**

sometimes its the way the child's problem is affecting the whole of the family... in terms of frustration and behaviour which may be a causative factor - where the language problems might be a causative factor (MG 1.4)

child's behaviour.. might be linked to the child's frustration if he's unable to communicate.. 'might be' underlined (MG 2.7)

if they're (mother) very concerned and you're mildly concerned you probably take them on.. and if they're not concerned and you're very concerned then you try to persuade them (MG8.31)

so you're saying if a child's aware of that problem (dysfluency) you're more likely to prioritise (FG42).. phonology as well, if the child's got some insight, you're far more likely to succeed

those children where the speech and language difficulty is the most prominent difficulty at the time (FG66).. for the family - they don't have additional things to worry about(FG67)

if mum s are concerned there's often a reason for that concern (SL105)

child is withdrawing, losing confidence, becoming shy or is already exceptionally shy; being teased or bullied; (SL notes)

He can't negotiate verbally so he does it nonverbally (PG3.10)

if parents are concerned suggests that there is a significant problem that needs concern.(PG)

in dysfluency, the child's own awareness is a criteria of assessment, a warning sign. This is a higher priority than a child who is not aware in a 3-4 year old (MB p.2)

*Items from confirmatory exercise:*

*withdrawn*

*child seems frightened by nursery/playgroup*

*language problems are causing problems for hild or family*

*therapist has to coax towards activities*

**Associated problems:**

if language is poor and hearing is poor (MG23.105)

its better waiting until the grommets are in and then providing an intensive burst (FG81)

I would see that as a negative thing if the play was delayed or abnormal in some way (SL93)

conductive loss + other factors (SL notes)

unusual additional features, eg, autistic features, global delay

greater priority when features occur together, are cumulative eg, poor comprehension + poor listening + poor expression (SL notes)

The child needed sameness - (play) wasn't creative and not typical of children, not social, seemed similar to other children causing concern as if he's trying to make sense of the world. This fitted in with a pattern of rigidity and language problems.. with a pattern of a language disordered child - can't risk being creative. he had some behaviours which would need awareness and monitoring eg biting (PG4.15)

children with a specific delay, clumsy (MBp.1)

general delay

behaviour problems

child with self-directed/own choice attention can't get information in order to modify own behaviour and therefore benefit from the environment (CMp.3)

*Items from confirmatory exercise:*

*poor listening skills*  
*poor concentration*

**Progress:**

if it (expressive language) doesn't (progress) then we'll have to (intervene)  
(FG13)

if he'd been with (Foster mother) longer I'd've been more worried and by  
longer I mean 6-9 months

I'm really looking for lack of progress or some deviation some abnormal  
pattern or the severity of the delay (SL101)

6 months delay or with a comprehension say 3 months. So say someone  
..couldn't do 2 word activities at 3 years old and I gave the mum some  
ideas and she came back in 3 months and she was still at that stage then I  
would be quite concerned (SL104)

changing in a negative direction (such as) fronting to backing, gross  
inconsistencies, grossly wrong final consonants appearing, vowel  
problems. persistence of immature processes as more mature ones  
disappear, imbalance between clause and phrase structure, desire to  
express complex ideas but no ability to express them, eg a child who is  
obviously reasoning and predicting who can't express dependency,  
echoing, (RF notes, p3,4)

no progress. no change over 3 months or over long term (RF p.5)

lack of progress shows that they can't respond to input./intervention,  
which suggests a major problem (CMP.5)

*Items from confirmatory exercise:*

*has not made progress over the last three months*  
*has not moved onto the next stage of language development since*  
*referral*  
*progress is deviant*

**Family effect on the child and its problem**

interaction with the mother - mother pressurises the child, is directive  
(MG, summary)

but the interaction (between parent and child) has got to be pretty odd in  
order to prioritise..we think its affecting the communication and language  
delay (MG5.19)

parental anxiety causing tension and the effect on the child, the dangers of over-emphasizing problems.. parents say they're concerned, continually asking questions (MG 8.32)

overconcern(of parents) particularly in the case of dysfluency 'cos that can really exaggerate a problem (FG24)

parents have no insight into the nature of the problem(FG26).. from the level of language they're using to the child, how they can talk about his development and the sorts (FG29)

overanxiety, too high expectations on the child, guilty feelings (FG31)

Parents' interacting skills are poor, poor relationship , eg saying negative things about the child; physical abuse in clinic; doesn't sing songs (or know any) , doesn't read books to child, child plays alone, watching TV all the time, little interaction time between parent and child . Lack of control in clinic or no attempt to control. Emotional problems with mother, eg depressive, manic, schizophrenia; lack of interaction in clinic; poor quality of interaction skills, ie unresponsive (SL notes)

parental pressure, eg parents have booked child in for psychoanalysis (SL notes)

*Items from confirmatory exercise:*

*did not give appropriate toys/tasks to child*

*does not have objective view of the child*

*has rigid views of how child should behave*

*parent reports that they are worried over child's difficulties*

*parents are not seeking reassurance only*

*parent misses the point of what the therapist is saying because of own view*

*child's problem is seen as a big issue by the family*

*nonverbal signs of anxiety in the parent*

### **Causation**

epileptic attack made me think there may be more to this than meets the eye (SL3)

where a causative factor can be eliminate or affected by the intervention (eg hearing loss, environmental deprivation, emotional problems, medical conditions requiring treatment) (SLnotes)

*Items from confirmatory exercise:*

*child has limited social experience*

### **Family history**

priority where family history suggests severe unresolving problems, eg, sibling in language unit (SL notes)

**Other support available**

nursery not available but still trying to get nursery placement. (SL notes)

*Items from confirmatory exercise:*

*child has limited social experience*

**APPENDIX F**

**SYSTEMIC GRAMMAR NETWORKS**

**ASSESSMENT BOOKLET**

Significant Factors  
in the  
Assessment of Preschool  
Children  
for  
Speech & Language Therapy

Assessment Networks

S.Roulstone  
Institute of Child Health  
Bristol Royal Hospital for Sick Children

Please complete for every child

|                   |
|-------------------|
| Therapist number: |
| Child's number:   |

|      |        |
|------|--------|
| Male | Female |
|------|--------|

Referred by:

|                        |                          |
|------------------------|--------------------------|
| Health visitor         | Clinical medical officer |
| General practitioner   | Nursery staff            |
| Nursery staff          | Parent                   |
| Other (please specify) |                          |

|                                |     |      |
|--------------------------------|-----|------|
| Date of birth:                 |     |      |
| Age at referral:               | yrs | mths |
| Age at initial assessment:     | yrs | mths |
| Expected date of school entry: |     |      |

Location of assessment

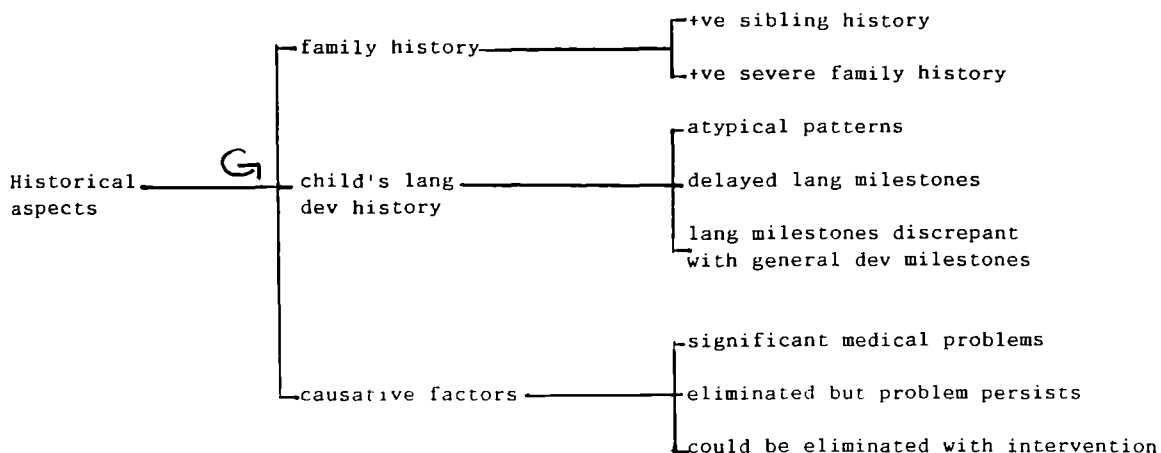
|                        |                      |
|------------------------|----------------------|
| Child's home           | Clinic/health centre |
| Nursery                | Playgroup            |
| Other (please specify) |                      |

|                       |      |
|-----------------------|------|
| Length of assessment: | mins |
|-----------------------|------|

|                               |      |
|-------------------------------|------|
| Length of time taken to code: | mins |
|-------------------------------|------|

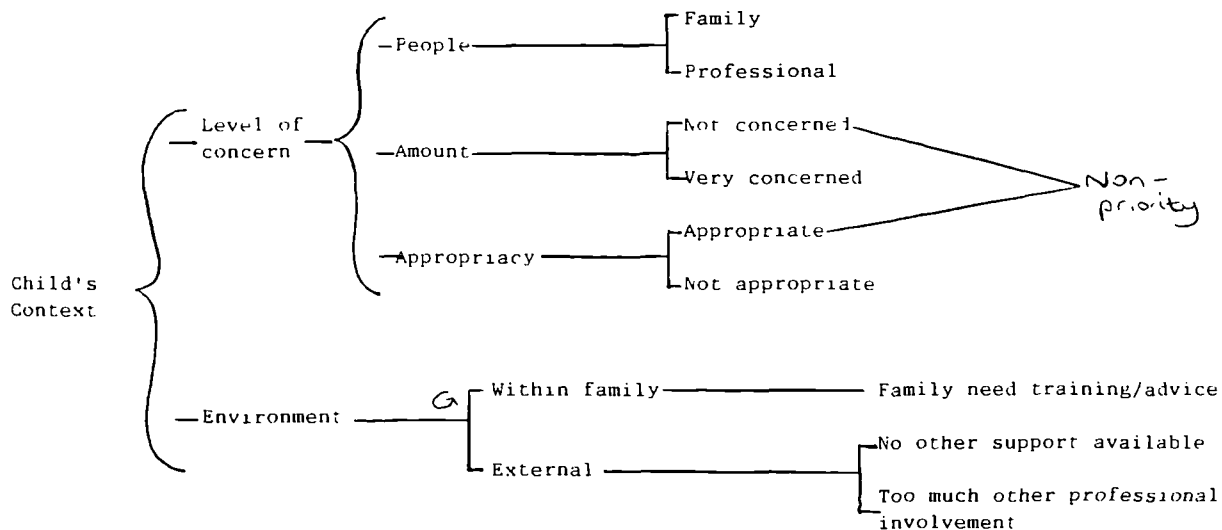


## Characteristics of the Priority Child (1) Historical aspects



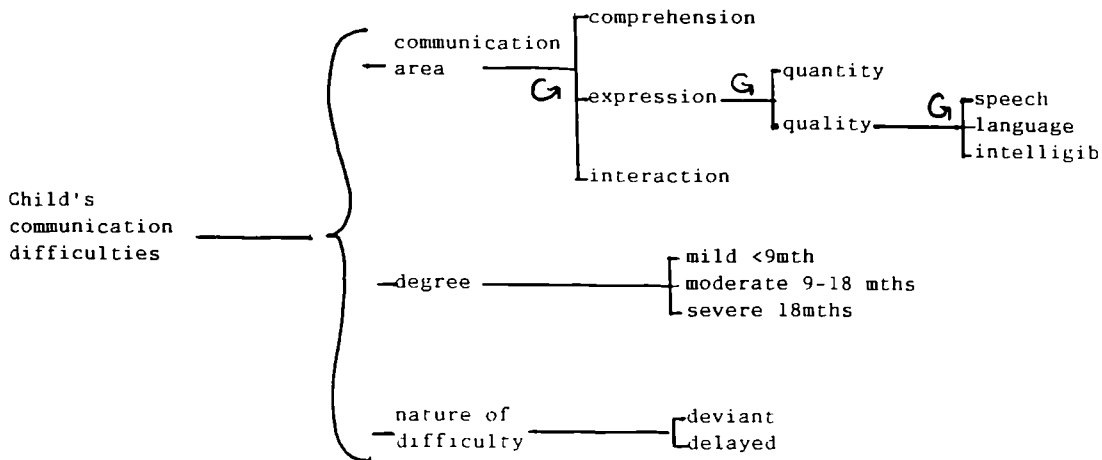
Please give any further information about the child's history which influenced your decision to prioritise this child.

## Characteristics of the Priority Child (2) Child's context

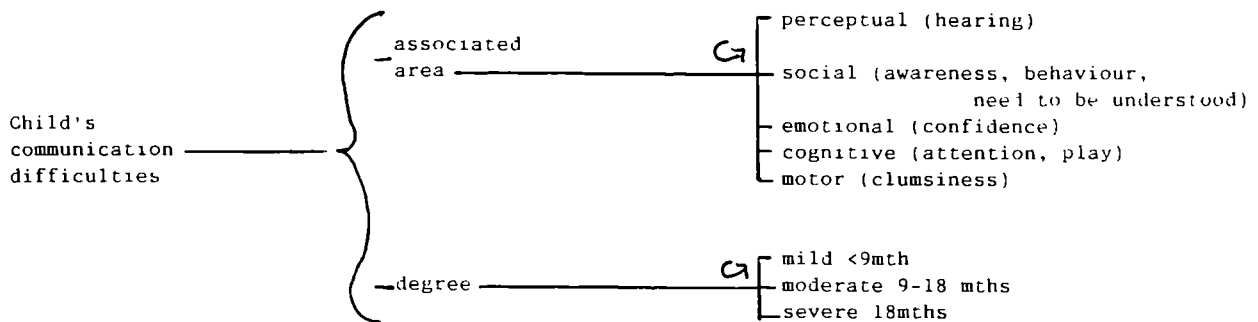


Please give any further information about the child's context which influenced your decision to prioritise this child.

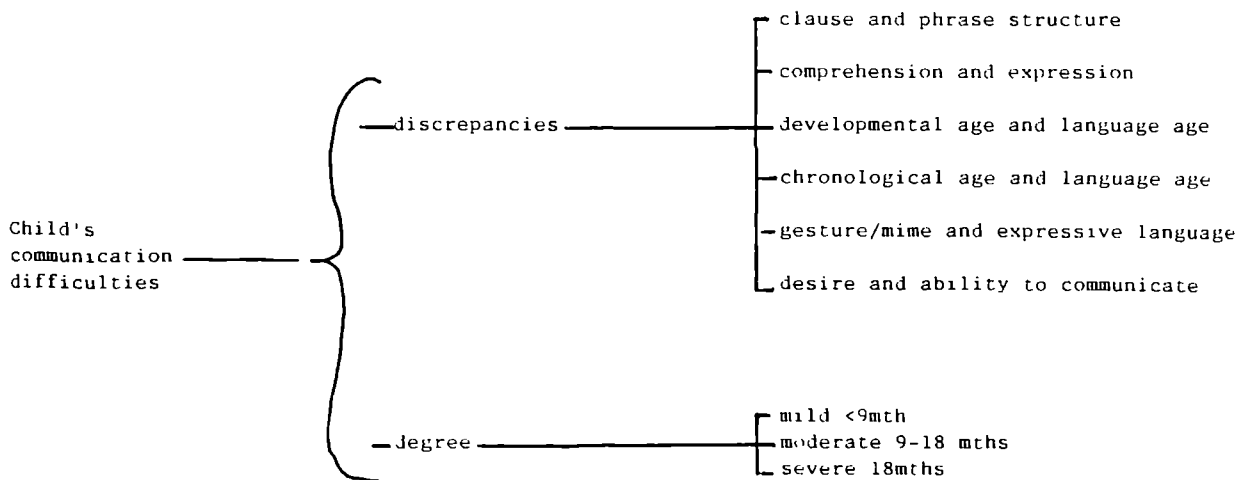
Characteristics of the Priority Child (3) Child's communication difficulties:  
a) communication area



Characteristics of the Priority Child (3) Child's communication difficulties:  
(b) associated area.

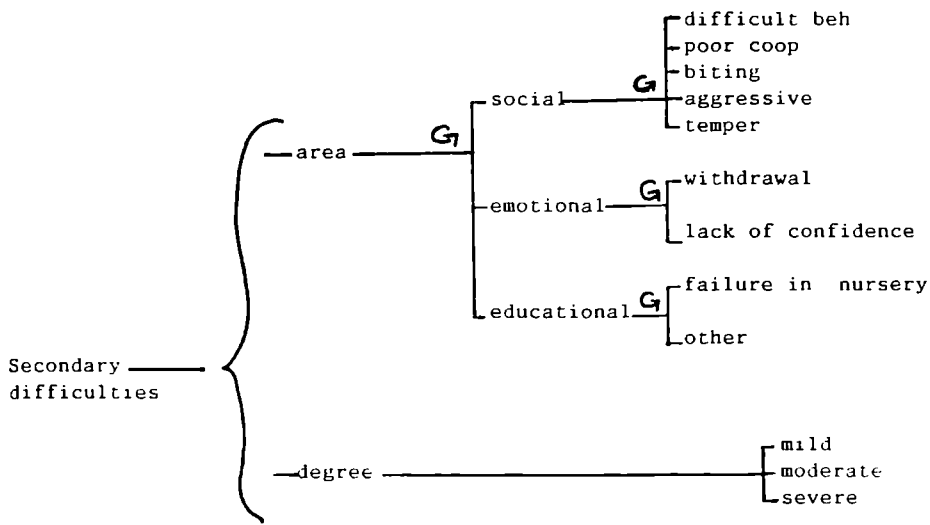


Characteristics of the Priority Child (3) Child's communication difficulties:  
(c) discrepancies



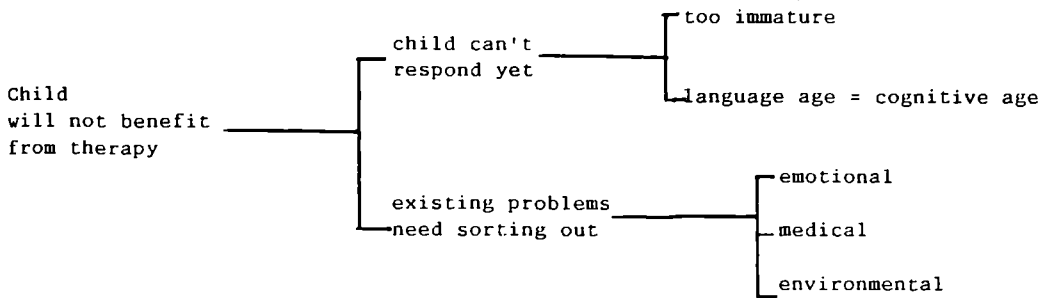
Please give any further information about the child's communication difficulties, associated problems or any apparent discrepancies which influenced your decision to prioritise this child.

Characteristics of the Priority Child (4) Secondary difficulties



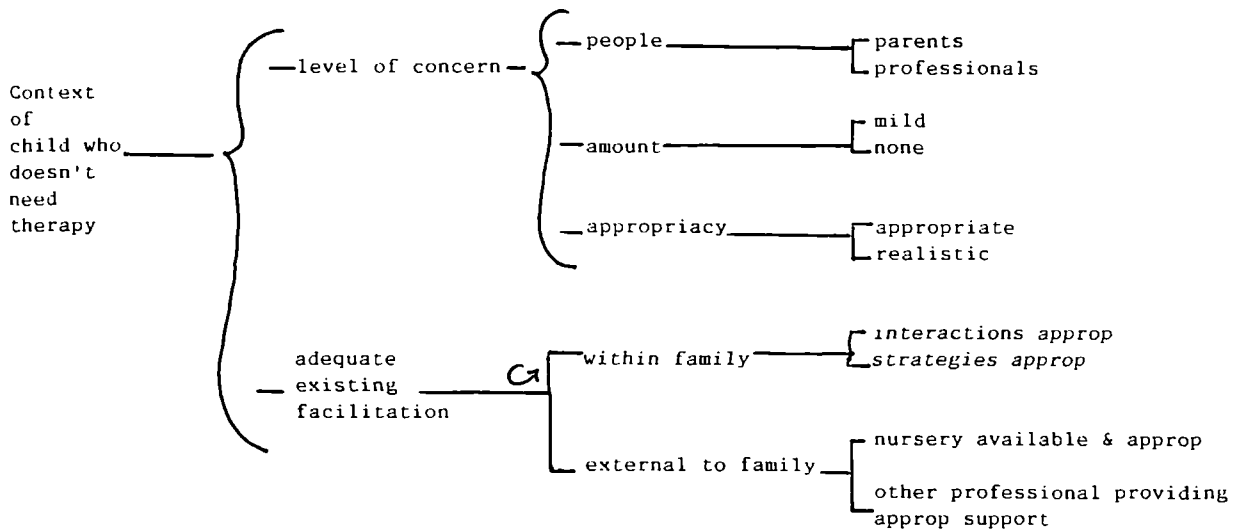
Please give any further information about any secondary difficulties which influenced your decision to prioritise this child.

Characteristics of the Non-Priority Child (1) Child who will not benefit from therapy



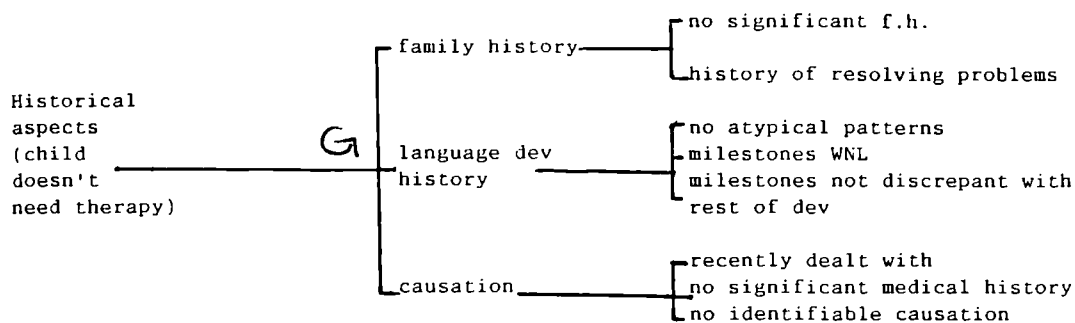
Please give any further information about why it is felt that this child will not benefit from intervention.

Characteristics of the Non-Priority Child (2) Context of the child who does not need therapy



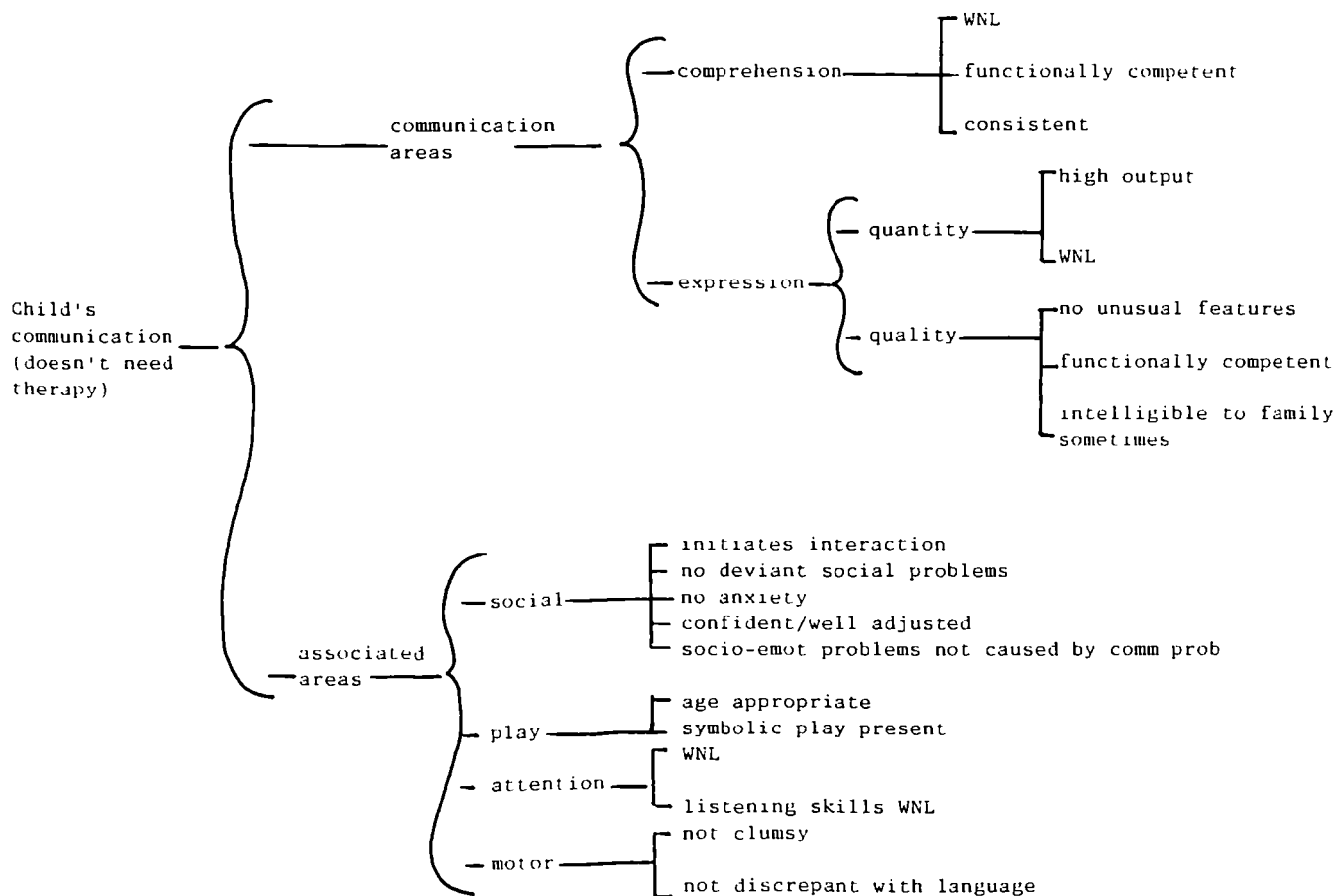
Please give any further information about the child's context which you feel influenced your decision not to prioritise.

### Characteristics of the Non-Priority Child (3) Historical Aspects



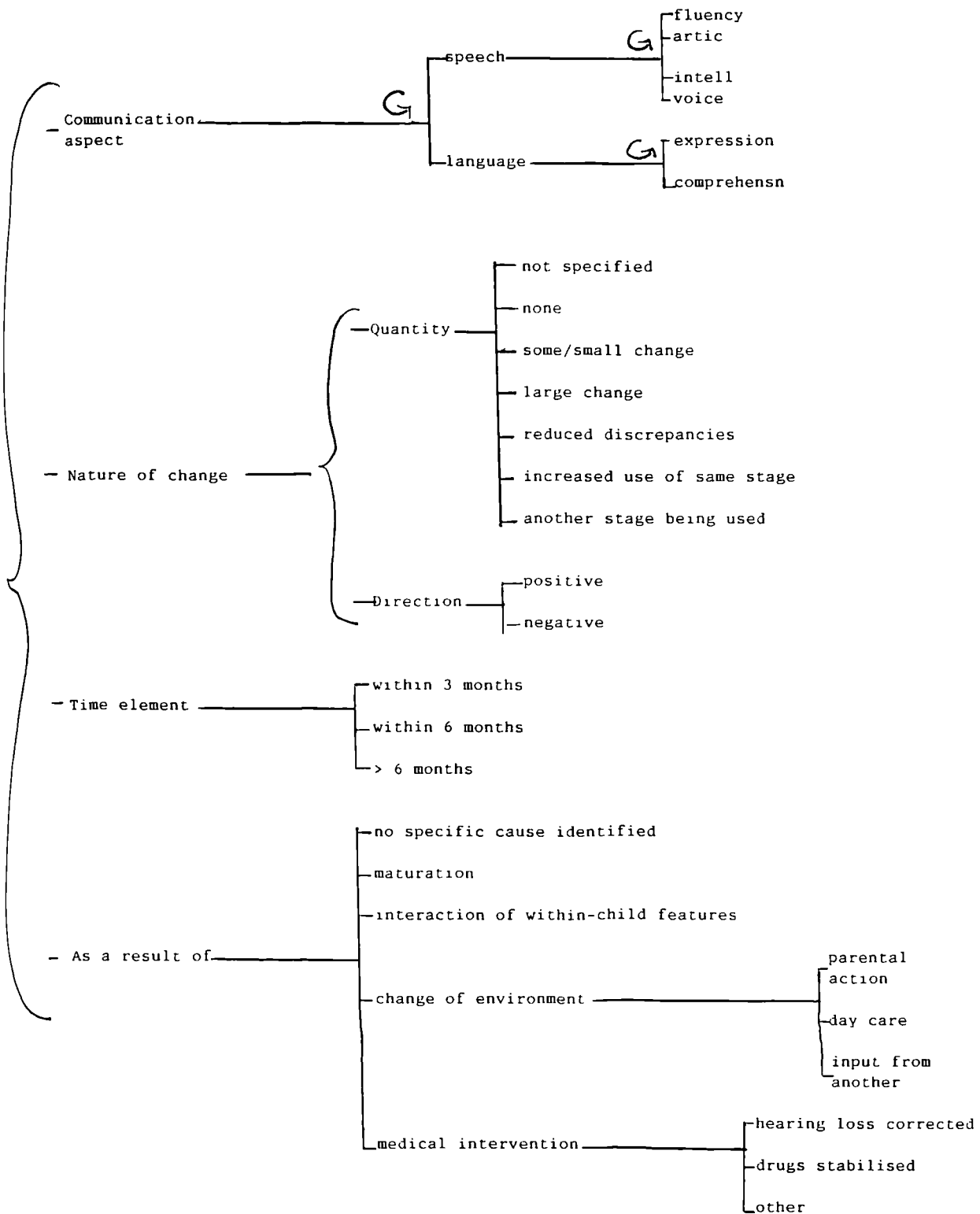
Please give any further information about the child's history which you feel influenced your decision not to prioritise.

### Characteristics of the Non-Priority Child (4) Child's communication



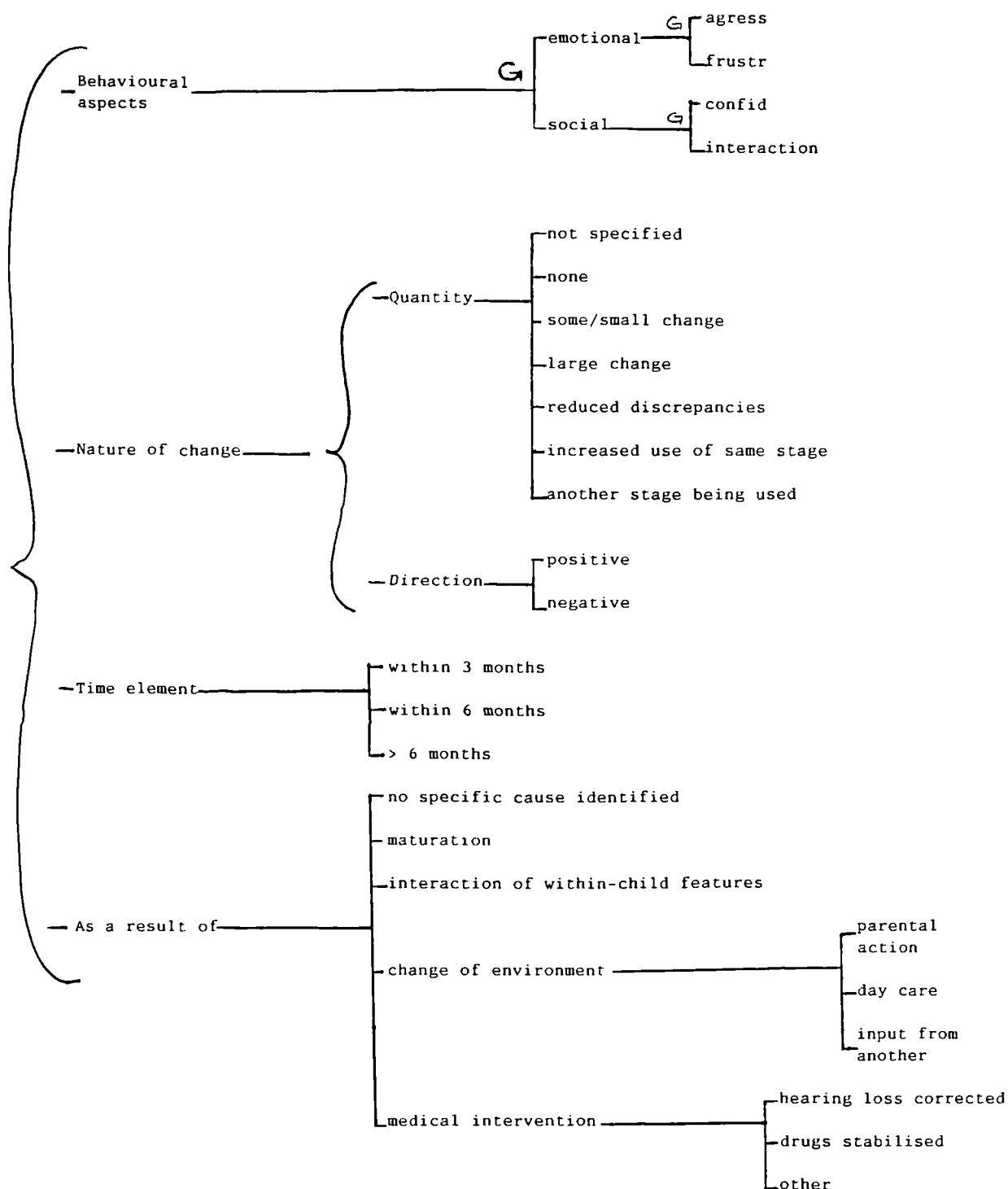
Please give any further information about the child's history which you feel influenced your decision not to prioritise.

Signs of change (1) Communication aspects



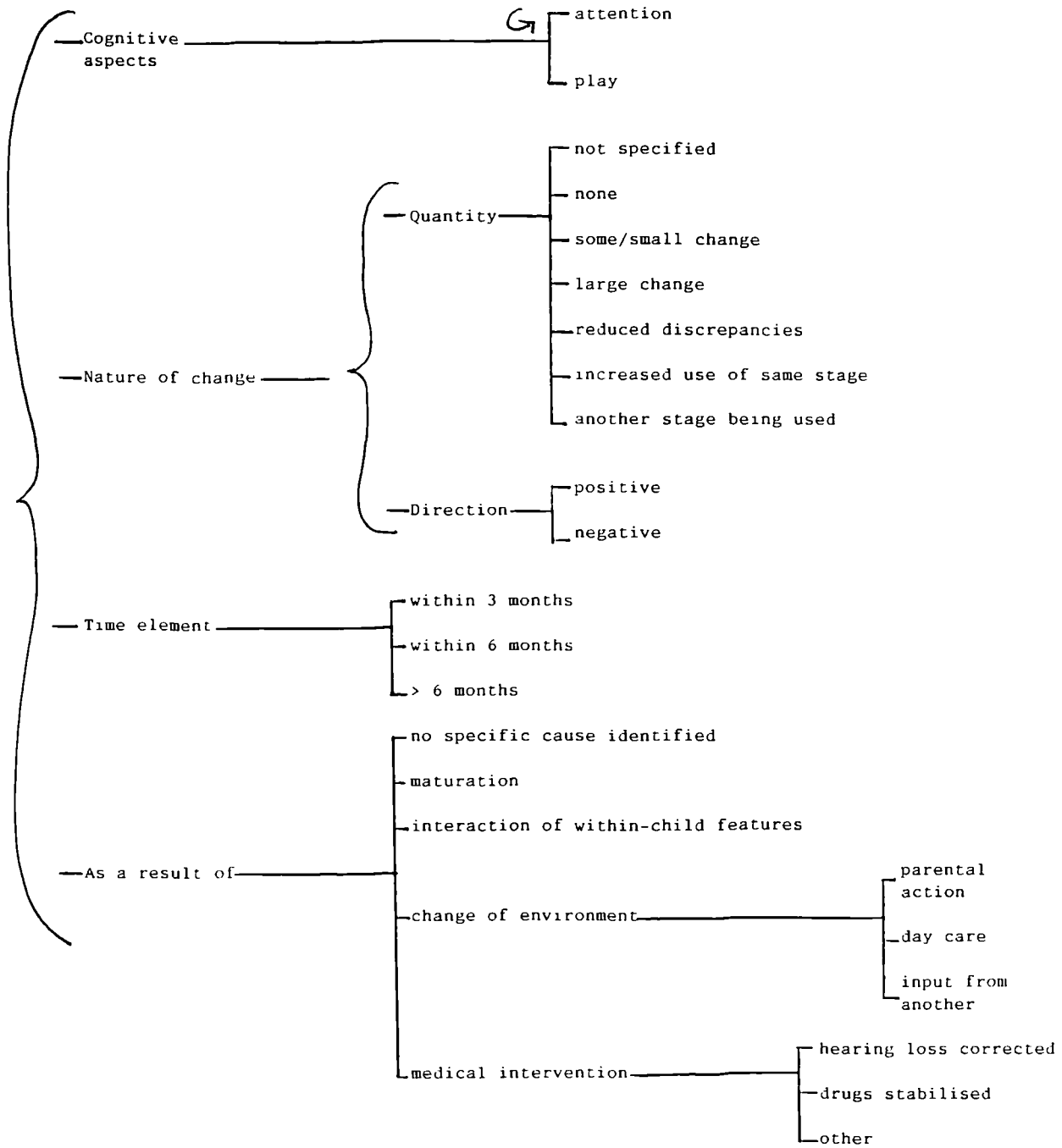
Please give any further information that affected your decision that you feel you were not able to reflect in the above network

## Signs of Change (2) Behavioural aspects



Please give any further information that affected your decision that you feel you were not able to reflect in the above network

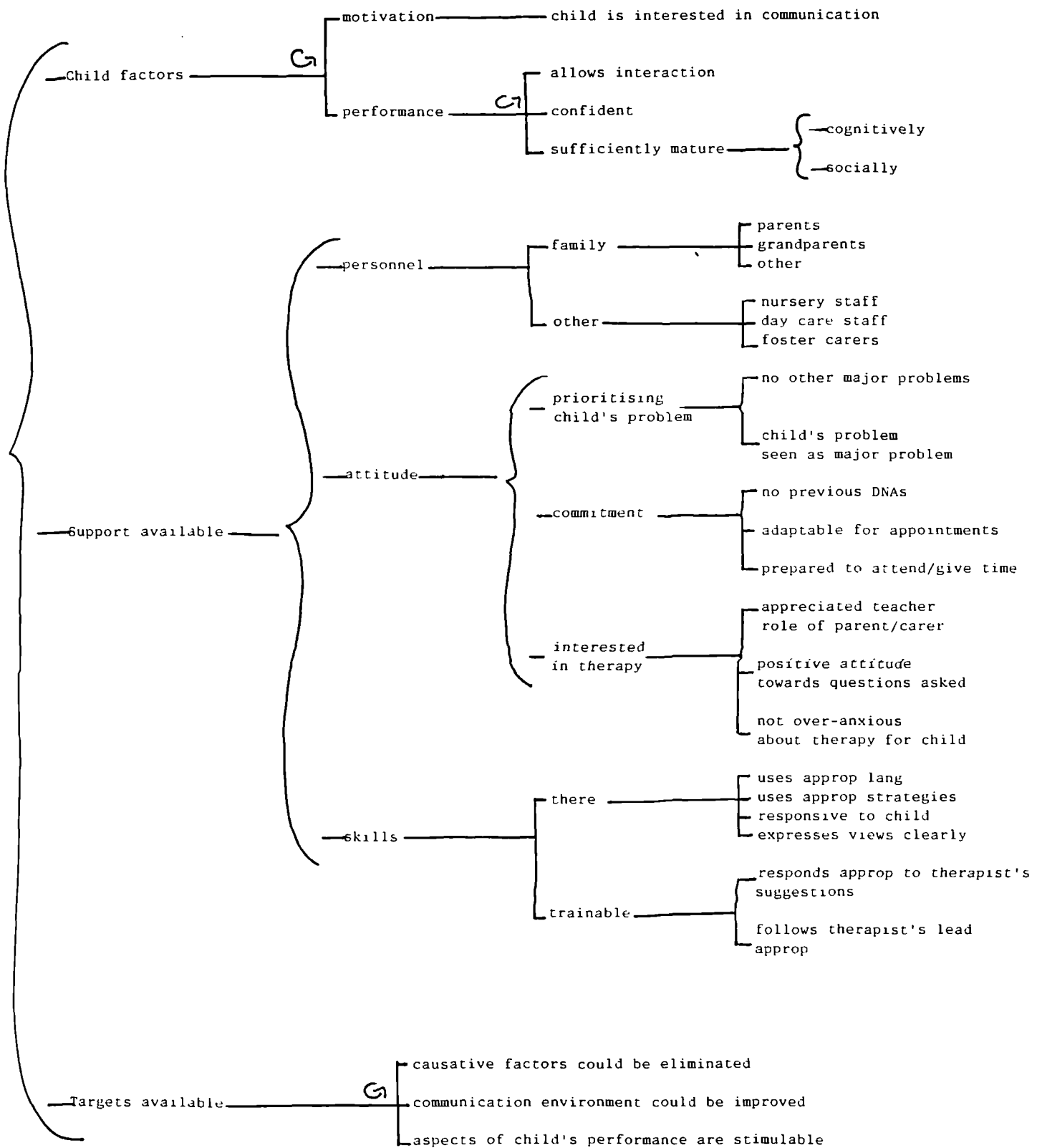
Signs of Change (3) Cognitive aspects



Please give any further information that affected your decision that you feel you were not able to reflect in the above network

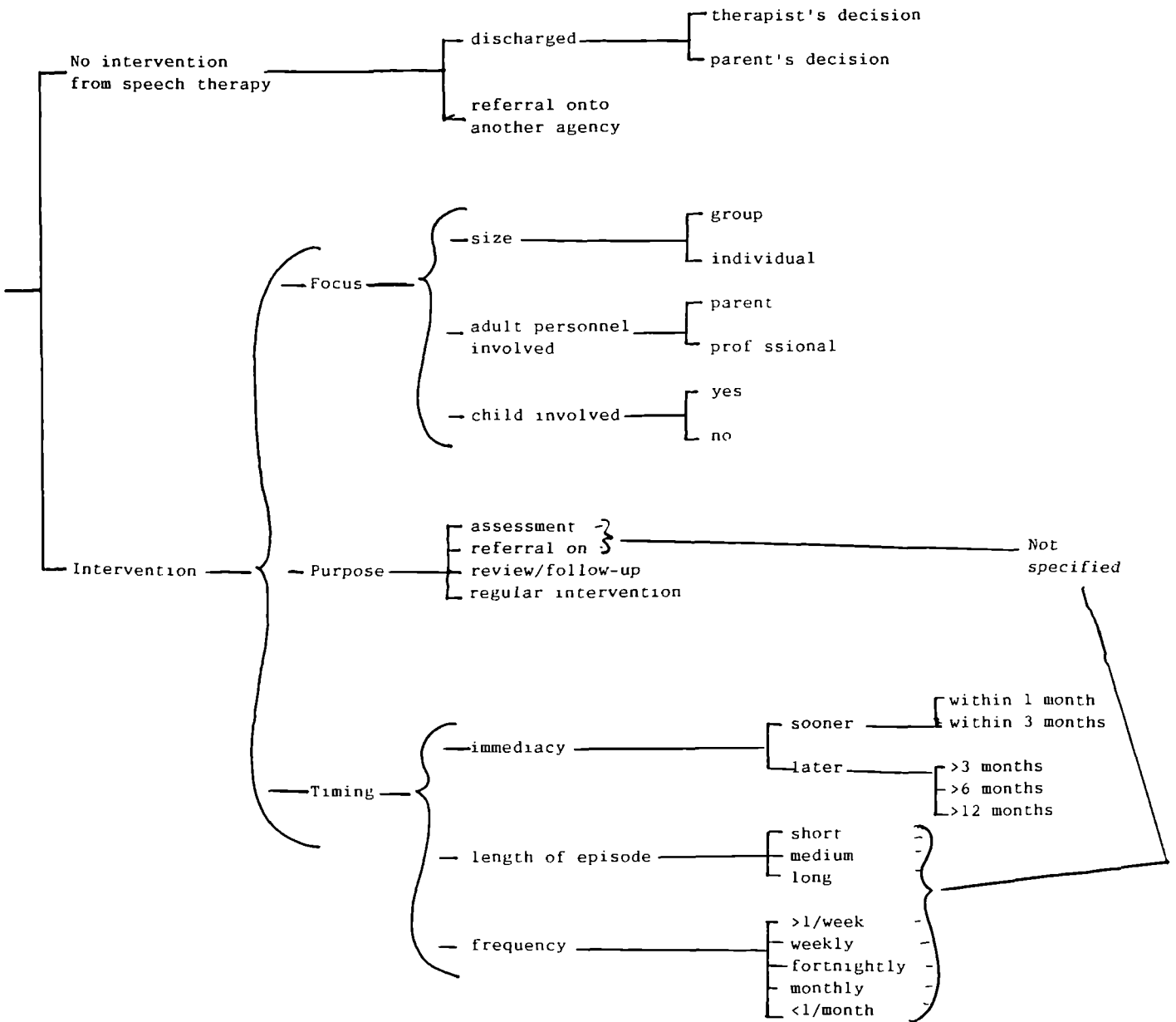


# Effectiveness of Intervention



Please give any further information which indicated to you that intervention would be successful

# Management Options



Please give any further information about your management decision for this child that you feel you were not able to reflect in the above network

**APPENDIX G**  
**SYSTEMIC GRAMMAR NETWORKS**  
**INSTRUCTION BOOKLET**

**CONTENTS**

Introduction

Instructions

A worked example and instructions

Example networks

- a) Characteristics of the Priority Child
- b) Characteristics of the NonPriority Child
- c) Signs of Change
- d) Effectiveness of Intervention
- e) NonClinical Constraints
- f) Management Options

*Glossaries for the networks*

- a) Characteristics of the Priority Child
- b) Characteristics of the NonPriority Child
- c) Signs of Change
- d) Effectiveness of Intervention
- e) NonClinical Constraints
- f) Management Options

Case notes for coding

**INTRODUCTION**

Thank you for agreeing to participate in this project.

The aim of the project is to develop materials to assist students and junior Speech & Language Therapists (SLT) in the prioritisation of preschool children for therapy.

This assessment booklet is based on data collected from experienced SLTs and it is now necessary to validate this booklet on a wider basis. I am therefore asking experienced therapists in services across the country to code children using the booklet in order to test the way that I have organised the ideas.

Many districts are now attempting to develop and standardize rational and ethical means by which clients can be prioritised. This area of research is therefore of interest to many therapists. Thank you for your help.

## **INSTRUCTIONS**

### 1. Number of cases:

I have attached the notes made on 4 preschool children during and at the end of their initial assessment session. Please 'assess' and code these first.

I should be grateful if you could then assess and code 2 new preschool children from your waiting list.

2. When completing the coding of your own cases, complete your assessment and write-up of the case before coding. Don't use the 'assessment networks' during your session with the child.

3. Only code information that you consider to be of significance in your decision making.

For example, a child may have made some progress recently, but you felt that this was so slight as to be irrelevant to your decision

Or, a child may have had a hearing problem at some time in the past, but you may not feel that this has influenced your decision to prioritise (or not)

4. When coding the results on the networks, use the highlighting pens to follow the category through the network. (You may prefer to code in pencil at first and then go through subsequently with the highlighters)

5. If there are issues which you feel were influential in your decision but are not represented, please add these in at the bottom or on the reverse of the networks.

6. If you have any queries about the meaning of any categories used in the networks, please refer to the relevant glossary in this booklet. Glossaries and networks follow the same order and are coded by colour for ease of reference.

7. If you decide to prioritise the child complete the network on the Priority Child first; then scan the Nonpriority Child network to see if there were any significant factors that *balanced your decision or that you had to balance with factors leading you towards prioritisation.*

If you decided not to see the child again, then start with the Nonpriority Child network; but as above, please also scan the Priority Child network and code any features that played a significant part in your decision.

### **Coding:**

square bracket:                      pick one choice only

square bracket  
+ curly arrow:                      go back and choose another set

of categories if you wish; use a different highlighter when following a second category through a network

curly bracket: choose one from each category within the curly bracket

**A worked example:**

The next few pages contain an example case, based on a real client. The next two pages are a summary of the case notes that were available at the end of the initial assessment session. Then follows the explanation of the coding.

WORKED EXAMPLE... GIRL... Dob: 30/3/88

Referral by Health Visitor: 16/11/90 CA: 2yrs 7mo

Initial appointment: 29/1/90 CA 2yrs 11 mo

Referral letter

Being referred to social services day nursery for a place as soon as possible

Behaviour problems

Speaks only single words and the majority are unintelligible to a stranger

Mother's concern is increasing

Had a recent hearing test (4/10/90) which showed left ear effusion

Mother and daughter have returned from New York after separation from husband

Case history recorded

Hears OK now

Can't say words clearly

Mother is not as concerned as when child was first referred

Has about 50 words - appearing over the last 6 months.

Making progress recently and is starting to mimic adults - all over the last 6 months.

Pregnancy: NAD

Mother and daughter had a high temperature (102) immediately after birth but recovered within 12 hours. Meconium present. Child placed on antibiotics for 10 days.

Has had ear infections but health is otherwise OK

Hearing test 4 months ago showed that hearing was 'not that bad' - just problems on a couple of tones. To return in a few months

Mother thinks child hears everything and understands everything

No hospitalisations

Mother said that all development has been slow, eg later to crawl, walked 14 mths

Has been a difficult child particularly from about 18 months, almost hyperactive; also bites and scratches

Mother feels that child needs to be with other children. Strategies used for behaviour: time out, shouting, spanking

Likes looking at magazines, doing whatever mother is doing, likes playing cooking

Is attending a private nursery for 2 hours, 3 times a week and loves it. Was very flitty at first but settling in now. But nursery concerned at her behaviour

Separated from husband who remains in the USA (he is American) Have recently moved back from the States

Was out of nappies, but success with this is related to husband's visits. Is now back in nappies again

Mother felt that everything is much easier when husband is around. "I find it difficult at the moment as I don't have my husband around. I get tired and I just don't want to deal with her and I want her to play with her toys on her own. Mother also expressing feelings of guilt about the problem. Asked lots of questions and talked a lot throughout the session. Seemed to be looking for reassurance more than wanting ideas for positive action.

Assessment information

Play: all exploratory unless modelled, then managed some relational and some symbolic actions. Exceptions: used toy phone appropriately, fed teddy once. Does respond to modelled behaviours and imitate after several repetitions of the model over time  
Mother's voice is rather flat and lacking in variation of intonation. Asks rather difficult questions

Child following some commands but only with extreme support, visual and contextual.  
Identifying objects at a single word level

Strategies observed for behaviour management by mother: tends to be verbal, doesn't move in with physical follow-up. Reinforcement is purely 'good girl, well done' rather than follow-up of child's initiations

If adult pursues an activity, the child does return and stay. Stays longer with an activity with adult attention

But no consistent response to attention gaining strategies

Mother has some good strategies for trying to elicit co-operation but if unsuccessful tends to revert to more heavy handed control mechanisms rather than distraction processes.

Utterances heard and interpreted by mother: (not really intelligible to therapist)

please

fruit

ironing

egg

pie

nanny

sweeties

man

baby

no doctors

#### OUTCOME:

Mother was offered regular weekly sessions starting the following week to work directly with child and to advise Mother on helpful strategies. Likely to require long term intervention. Mother declined. A two month follow-up appointment was negotiated to discuss child's progress and how well mother had got on with strategies suggested so far. Also to consider referral to clinical psychology although this had not been discussed with the parent at this point.

## Characteristics of the Priority Child

### Historical aspects

No information is available of the family history

The child's language milestones would seem to have been delayed but the information regarding other milestones is rather ambiguous eg, mother says the child was slow, but the child walked at 14 mths; so any possible discrepancy is disregarded and not influential in the decision.

No causative factors were identified as of significance or considered to be influential.

### Child's context

From the referral and the mother's comments about behaviour management and guilt levels, a high level of appropriate concern was presumed and felt to be significant. Because of the mother's handling of behaviour in the session and the fact that the nursery are also expressing concern rather than dealing effectively with the behaviour, it was felt that no other support was available and that the parent needed advice; both these factors were felt to be influential in the final decision.

### Child's communication difficulties: communication areas

The child showed severe comprehension and expressive language problems and at this stage the nature was felt to be delay

Because the network needs to show that both comprehension and expressive language are severely delayed, the network has been 'passed through' twice, the second time through represented in a different colour.

In fact as both aspects of language were severe and both were also delay it could be just as easily shown with the single colour.

### Child's communication difficulties: associated areas

The most significant factors were felt to be the behaviour and the attention. Although there is a possible hearing loss, this fact was not a major consideration at this point and did not influence the decision particularly.

Again two passes through the network were needed to reflect the two areas of significance.

### Child's communication difficulties: discrepancies

The only discrepancy of any significance here was felt to be the CA/LA gap. This was influential as it was a severe discrepancy.

### Secondary difficulties

It is difficult to know whether the behaviour problems are part of the overall difficulty with communication or are secondary to them. As they are severe, I have coded them here too.

I have only used one colour this time

## Characteristics of the NonPriority Child

This child was considered to be a priority and there were no factors which were felt likely to suggest nonprioritisation. However, in some cases there may be a number of factors which have to be evaluated and balanced against the child's severity or other priority aspects for example, the mother may be using very appropriate strategies.



This may also be the case in reverse: that is, a child who has not been prioritised for intervention may nonetheless, have several factors which might suggest prioritisation. It is therefore useful to code children on both sets of networks - or at least to scan through to make sure that there are no influential factors represented in the other set.

### **Signs of change:**

The only signs of change noted in the text are to do with communication and would seem to be a stage of expressive language, ie imitation and increase of single word vocabulary. This therefore comes in the network on Communication aspects.

The nature of the change was only small but a positive one and could either be expressed as small or as increased use of the same stage.

The time span in the text is not altogether clear but as 6 months is mentioned and therefore within 6 months would seem to be appropriate.

The reason for the change is not identified in the text and it is not possible to make assumptions based on the data given, so it has been coded as no specific cause identified

Although behavioural and cognitive aspects are commented upon, the comments are not qualified in any way with respect to progress or deterioration. Therefore, the child cannot be coded on either of these two networks.

### **Effectiveness of the Intervention**

#### Child factors:

There is no information regarding the child's motivation but comments on her performance indicate that she allowed interaction.

#### Support available

Each of the three categories here must be considered in relation to the others. The easiest way to think about it is: who are the key personnel in this child's life and is there anything significant in their skills or attitude that suggests intervention will be successful.

In this case, we have only a small piece of information about the nursery which is not enough to code, so it useful to think about the parent. So in terms of the support available, the personnel involved is a family member and a parent. As far as the parent's attitude is concerned, I felt that, despite some concern, she was not able to give her child's problem a high Priority. Although there had been no previous DNAs I did not feel this affected my view of her commitment and in fact she was not prepared to attend as frequently as offered.

There is little to indicate that the parent is interested in therapy - so it is not possible to code any attitudes as indicative of successful therapy.

In terms of skills, there are indications that the mother's skills were not appropriate to the child's needs and there is no positive indicators that the skills would be trainable. So although we started looking for support available under parent there was actually nothing to code.

#### Targets available

There is an indication that the child is stimulable( eg responding to modelled behaviour, returning to adult's choice of behaviour) and there are targets within the communication environment such as mother's control strategies and her use of language.

### **Management Options**

This network represents the final decision taken with regard to the follow-up of this child.

Intervention was recommended, with the focus being at an individual level involving the parent and the child. The purpose was for regular intervention. The timing eventually agreed was for a follow-up within three months and it is anticipated that, for a child of this severity, the overall length of episode would be long. The desired frequency was much higher than that eventually agreed but it would be hoped that this might change over time. This however is not reflected in the network since it is not possible to predict that at this stage.

## GLOSSARY

### Characteristics of a Preschool Priority Child

#### **Historical Aspects:**

those aspects of the child's history which made you more likely to prioritise this child for intervention

#### **Family history:**

any history of communication difficulties within:

#### *+ve siblings history:*

child's brothers and sisters

#### *+ve severe family history:*

wider family such as parents, grandparents, cousins, but where that relative has had an unresolving problem and needed long term help for example within a special unit or school or long term speech therapy.

#### **Child's language development history:**

any historical aspects of the child's language which were influential in your decision to prioritise

#### *Atypical patterns:*

aspects of the child language development which were atypical, eg, stages missed, achieved in an unusual order

#### *Delayed milestones:*

language development milestones, such as babble, first words, joining words, appeared late

#### *Language milestones discrepant with general development milestones:*

Milestones such as first words were slow emerging compared to other aspects of development.

#### **Causative factors:**

Factors in the child's history which appear to be causative of the communication problem.

#### *Significant medical problems:*

in the child's case history there are medical diagnoses which contributed to your decision to prioritise this child

#### *eliminated but problem persists:*

the causative factor has apparently been dealt with and eliminated but the communication problem is still present

example: grommets have been inserted and there is no longer a hearing loss

example: child was in a position of abuse or neglect but has been in care for more than 3 months

#### *could be eliminated with intervention:*

a factor which is assumed to have a causative association is amenable to treatment

example: mishandling of the problem by the family

#### **Child's Context**

Aspects of the child's social and emotional environment that influenced your decision to prioritise

#### **Level of concern:**

the amount of concern expressed about the child was influential

**People:**

Those expressing the concern:

*Family:* parents, grandparents, foster carers

*Professional:* doctors, health visitors, nursery staff

**Amount:**

How much concern is being expressed

*Not concerned:* people are not expressing concern

**Very concerned:**

people are expressing a considerable amount of concern

**Appropriacy:**

how appropriate is their concern

*appropriate*

*not appropriate*

**Environment:**

aspects of the environment which caused to prioritise the child

**Within family:**

parents, grandparents, foster family

*family need training or advice*

**External:**

aspects outside the immediate family situation

*no other support:* has not received any input from other professionals, not attending nursery, no other professionals involved who could provide appropriate input for the child/family

*Too much other professional involvement:* has been seen by a string of therapists, or other professionals so that parents feel that they have not received continuity of care or feel pressured by the numbers involved

**Child's communication difficulties**

Aspects of the child's difficulties which made you more likely to prioritise this child

**Communication area:**

a speech and language diagnosis, label or area of difficulty

**comprehension:**

child's understanding of language

**Expression:**

child's language production

*quantity:* how much output - eg, is the child silent, using less than 20 utterances in a session

*quality:* of their speech, expressive language or intelligibility

**Degree:**

the amount or level of difficulty or severity or involvement

*mild*

*moderate*

*severe*

**Nature of difficulty:**

was the communication problem one of

*delay* or was it

*deviant*

**Associated areas:**

difficulties which are not specifically speech and language but thought to be directly concerned with the acquisition of those skills

**Perceptual:**

such as hearing, vision, tactile-kinesthetic

**Social:**

such as child's awareness of the problem, their behaviour, their need to be understood

**Emotional:**

such as the child's confidence, tendency to withdraw, depression;

**Cognitive:**

such as attention, play, memory;

**Motor:**

eg clumsiness

**Degree:**

the amount or level of difficulty or severity or involvement

*mild moderate severe*

**Discrepancies:**

what sort of discrepancies between developmental areas or areas of communication exist:

**clause and phrase structure:**

within child's expressive syntax

**comprehension and expression:**

between the two areas of language

**developmental age and language age:**

between the child's general developmental and cognitive level and their language level

**chronological age and language age:**

between the child's actual age and the age level they are achieving with their language skills

**gesture/mime and expression:**

the child is using complicated or advanced gesture/mime to communicate which is ahead of their ability to communicate verbally

**desire and ability to communicate:**

there is an apparent gap between what the child wishes to communicate and their ability to communicate those ideas.

**Degree:**

the amount or level of difficulty or severity or involvement

*mild*

*moderate*

*severe*

**Secondary Difficulties:**

Any difficulties that the child has which appear to be the result of the communication difficulties and which influenced your decision to prioritise

**Social:**

Aspects of the child's ability to socialise seem to be affected by the communication problems

*difficult behaviour*

*poor co-operation*

*biting*

*aggressive*

*temper*

**Emotional:**

changes in the child's personality or emotional state which appear to be the result of the communication problem

*withdrawal*

*lack of confidence*

**Educational:**

any actual or anticipated educational difficulties that are likely that have influenced your decision to prioritise

*Failure in nursery:*

child is having difficulties with tasks or activities in the nursery

*Other:*

any anticipated failure that has influenced the decision

**Degree:**

How marked are those behaviours

*mild*

*moderate*

*severe*

### **Characteristics of a Non-Priority Child**

**Won't benefit from therapy**

this child is unlikely to benefit from or respond to intervention from speech therapy for the following reasons:

**Child can't respond yet**

something about the child makes it difficult for them to respond to therapy

*Too immature*

some children who need direct hands on work, eg, for phonology are too clingy and immature to cope with interaction with the therapist

*Language age = cognitive age:*

the child's language development is in line with their cognitive development

**Existing problems need sorting out**

a problem either within the child or the child's family would interfere with the child's ability to benefit from therapy or interfere with the family's ability to co-operate and participate. These must be problems which are part of the reasons for the therapist not prioritising a child, eg, some children have glue ear and are not prioritised because they are waiting for grommets; but some children with glue ear are prioritised because it is felt that therapy is needed to teach them to use their existing hearing more effectively and the sort of problems they are having are almost irrelevant to the glue ear.

*Emotional*

the child has emotional problems which are not secondary to the communication deficit and which would interfere with the likely success of therapy

*Medical:*

example: the child has a conductive hearing loss and is waiting for grommets; the type of intervention needed would not be successful until the child's hearing is improved

example: other medical diagnoses/difficulties need clarification and treatment before therapy can commence eg, velopharyngeal insufficiency

*Environmental:*

the family have a range of difficulties at the moment and would not be able to attend regularly for speech therapy or be able to change their behaviours in order to accommodate to the child's needs with respect to his/her communication development

**Context of a child who doesn't need therapy:**

Aspects of the child's social and emotional environment that influenced your decision not to prioritise

**Level of concern:**

the absence of concern expressed by significant people was influential in your decision not to prioritise

*People*

those expressing lack of concern

*Parents*

*Professionals*

**Amount of concern:**

Is any concern being expressed at all

*Mild*

*None*

**Appropriacy:**

how appropriate is the level of concern relative to the child's communication skills

*appropriate*

*realistic*

**Adequate existing facilitation:**

There is sufficient help within the child's environment for the child's communication skills to continue to develop

*Within the family:*

the help is available within the child's family unit in terms of:

*interactions appropriate to the child's needs*

*strategies appropriate to the child's needs*

*External to the family:*

even if appropriate strategies are not being used by the family, the child has support from other sources

*nursery available and appropriate*

*other professional providing appropriate support*

**Historical aspects (child doesn't need therapy)**

Details of the child's case history influenced your decision not to prioritise this child.

**Family history**

Information from the family history has influenced your decision not to prioritise

*No significant family history*

the fact that there is not significant family history made you less likely to prioritise

*History of resolving problems:*

the fact that there was a history of resolving communication problems within the family has influenced your decision not to prioritise; for example, it is reported that father did not speak until quite late but needed no further intervention and has had no prolonged difficulties or educational problems

**Language development history**

aspects of the child's case history on their language development made you less likely to prioritise

***No atypical patterns:***

the child's language development followed normal lines

***Milestones are WNL:***

language milestones such as babbling, first words occurred WNL

***Milestones not discrepant with rest of development:***

language milestones as above are broadly similar to other aspects of development such as sitting, walking etc

**Causation**

aspects of possible causation influenced your decision

***recently dealt with:***

some factor which you assume to have a causative link to the child's communication difficulties has been sorted out recently

eg, has had grommets inserted

eg, has just been placed in foster care.

eg, a child who has had few play opportunities or talking partners at home has just started nursery attendance.

'Recent' is: within the last three months

***No significant medical history:***

nothing has been noted in the child's medical history which might alert you to more severe problems

***No identifiable causation:***

nothing in the child's case history would suggest communication problems are likely to continue

**Child's communication (doesn't need therapy)**

the child's communication skills were such that prioritisation for therapy was not necessary

**Communication areas:**

specific communication skills

**Comprehension**

child's understanding of language

***WNL:***

within normal limits for the child's age

***Functionally competent:***

can follow conversations appropriate to his/her age, can follow day-to-day instructions

***Consistent:***

child responds consistently throughout the session to instructions etc.

**Expression**

child's expression of language including speech

***Quantity:***

***high output:*** within the session the child uses more than 20 utterances and is reported to be chatty at home

***WNL:*** quantitative measures suggest that the child's expressive language is within normal limits

***Quality:***



*no unusual features:* nothing observed during the session was unusually or atypical of children's normally developing expressive language  
*functionally competent:* can make wishes and needs known  
*intelligible to family sometimes:* can be understood by most of the family at least some of the time

**Associated areas**

aspects of the child's development which are linked in with communication development which influenced your decision not to prioritise

**Social:**

aspects of the child's socialisation which made you less likely to prioritise

*Initiates interaction*

*No deviant social problems*

*no anxiety*

*confident/well adjusted*

*social/emotional problems not caused by communication problems:*

although the child does show difficulties of socialisation these are not thought to be related to the communication difficulties

**Play:**

the child's play during the sessions is

*age appropriate and*

*symbolic play present*

**Attention:**

the child's ability to cope with incoming stimuli

*WNL:*

attention skills are appropriate for the child's age

*listening skills WNL:*

the child's ability to listen is age appropriate

**Motor:**

the child's gross and fine motor skills

*not clumsy:*

there is no sign of clumsiness

*not discrepant with language:*

motor skills are in line with aspects of language development

**SIGNS OF CHANGE**

**Communication aspect:**

aspects of the child's communication skills which have improved.

**Speech:**

the child's attempts at spoken words.

*Fluency*

*Articulation:*

*Intelligibility:*

**Language:**

the child's expressive and receptive skills.

*Expression*

*Comprehension*

**Behavioural aspects:**

nonverbal aspects of a child's interaction with his environment and child's stability as an individual.

**Emotional:**

examples:

displays interpreted as *frustration* are reducing; behaviour interpreted as *aggressive* is reducing

**Social:**

examples:

*confidence* at socialising with other children and adults is increasing  
changes have been noticed in the child's all round *interaction*

**Cognitive aspects:**

adaptive or learning behaviours

**Attention:**

child's ability to attend to incoming stimuli

**Play:**

child's level of play, eg, exploratory, relational, symbolic

**Nature of Change**

The sort of changes being identified.

**Quantity:**

Amount of change identified at initial assessment, based on parent report, report of referrer, or contrast with referral.

*Not specified:*

the amount of change is not specified

*None:*

no signs of change identifiable or commented upon.

*Some/small change:*

General change is suggested but it is very difficult to quantify

*Large change:*

Large signs of progress or deterioration are commented upon.

*Reduced discrepancies:*

any apparent discrepancy between language and other aspect of development, such as cognitive development or physical development, or within language, between comprehension and expression, is decreasing.

*Increased use of the same stage:*

still at same stage as referral indicates or over period of the last 3-6 months, but is using that stage more often or more confidently or more diversely; for example, remains at a single word level but has increased the range of vocabulary used or is still at a two word phrase level but combining a greater variety of words and using them all the time.

*Another stage being used:*

Has moved from one developmental stage in language to another, eg, from no single words to single words, from single words to two word phrases, from two word phrases to simple sentences; or in reverse, from two word phrases to no words.

**Direction:**

The changes can be in the form of progress or regression or deterioration.

*Positive:*

The changes are towards the adult model or away from deviant behaviours.

*Negative:*

The changes can be regarded as regression or deterioration, away from normal developmental patterns or towards a more deviant pattern of behaviour

**Time Element:**

time period over which change/progress has occurred.

**within 3 months:**

change has occurred within the 3 months preceding the date of assessment.

**within 6 months:**

change has occurred within the 6 months preceding the date of assessment.

**more than 6 months:**

change has occurred over the period of more than 6 months before the date of assessment

**As a result of:**

the apparent cause of the changes/progress.

**No specific cause identified:**

nothing has apparently changed in the environment of the child to cause change

**Maturation:**

the changes occurring could probably be attributed to normal maturational processes

**Interaction of within-child features:**

Changes in one aspect of the child's development/behaviour appear to be having an effect of another aspect; eg, improvements in the child's language appear to be linked to improvement in the child's sociability; eg, deterioration in the child's behaviour appear to be linked to their poor speech and language

**Change of environment:**

the child's environment has changed and the progress appears to be related causally to this change.

*Parental action:*

parents have changed their approach/management of the child in some way which has resulted in change/progress.

*Day care:*

progress has been made since child received day care.

*Input from another:*

child has received attention/intervention from another adult which has resulted in change

**Medical intervention:**

Changes occurring can be attributed to medical or surgical intervention

*Examples:*

*hearing loss corrected:*

progress in child's speech appears to be linked to insertion of grommets and improvement of child's hearing

*Drugs stabilised:*

drugs for epilepsy have been recently sorted out and child has subsequently begun to make progress

*Other, eg,*

child's increase in nasality appears to have followed tonsillectomy.

**Effectiveness of Intervention**

**Child Factors:**

Aspects of the child's behaviour which indicate that therapy will have a positive outcome and which influenced your decision to offer intervention.

**Motivation:**

Did the child's motivation influence your decision

**Child is interested in communication:**

Did the fact that the child is interested in communication affect your decision to prioritise.

**Interaction:**

Did aspects of the child's general interaction, which suggest that therapy will be effective, affect your decision

**Allows interaction:**

the child tolerated interaction with the therapist

**Confident:**

the child appeared confident in the session

**Sufficiently mature:**

is the child sufficiently mature both *cognitively* and *socially* to benefit from intervention.

**Support available:**

Is the support available to the child likely to result in effective intervention by the therapist and was this seen as a factor in your prioritisation.

**Personnel:**

who is the key adult likely to provide support

**Family:**

are they from within the family, *parents, grandparents or other* family members

**Other:**

or are they from outside the family such as *nursery staff, day care staff or foster carers*.

**Attitude:**

What is it about that person's attitude which leads you to feel that intervention will be successful

**Prioritising the child's problem:**

are they able to give the child's problem priority in their life because they have *no other major problems* to deal with or because the *child's problem is seen as the major problem* in the family despite other problems being present.

**Commitment:**

Does the person seem committed to intervention? Have there been any *previous DNAs*, or are they able to be *adaptable for appointments*. Are they *prepared to attend and/or give time for sessions*?

**Interested in therapy:**

Does the person show some interest and appreciation of intervention by their understanding of the *teacher role of parent carer* or through their *positive attitudes towards questions asked* during the session. Are they reasonably calm about the idea of intervention and *not over-anxious*.

**Skills:**

What is it about this person's skills which leads you to think that intervention will be successful?

**There:**

the person already shows some skills which are going to be useful or appropriate to intervention for this child such as *appropriate use of language* with the child or the *appropriate use of strategies* to help the child. Was the person *responsive to the child* and able to *express views about the child clearly*.

**Trainable:**

the person shows some indication that they will respond to training and advice given by a therapist because they *responded appropriately to suggestions* made by the therapist during the session or because they were able to *follow the therapist's lead appropriately* during the session.

**Targets available:**

Are there appropriate goals which can be targeted for therapy where you feel that intervention could make a positive impact.

**Causative factors could be eliminated:**

aspects which are assumed to be causative in nature which could be shifted though an intervention programme

**Communication environment could be improved:**

aspects of the child's environment such as the language being used or the attitudes towards the child's language could be changed positively.

**Aspects of the child's performance are stimulative:**

areas of the child's language or associated skills such as attention or play showed signs of stimulability during the session.

## **MANAGEMENT OPTIONS**

**No intervention from speech therapy:**

the speech therapist will not arrange to see the child again

**Discharged:**

the child is discharged completely with respect to their communication disorder

**Therapist's decision:**

the therapist decided to discharge because speech therapy is not needed or not appropriate

**Parent's decision:**

the parent decided that they did not want/need speech therapy

**Referral on to another agency:**

Although the child will not be seen by a speech therapist, they are referred on to another professional agency connected with events arising from the initial assessment

**Intervene:**

The speech therapy department will provide some level of intervention with this child

**Focus:**

how will the intervention be directed in the first instance

**Size:**

what will be the size of the therapist:client ratio

**Individual:**

child &/or adult will be seen by therapist alone

**Group:**

child &/or adult will join a group session

**Adult personnel involved:**

Who will be the main adult(s) involved in the intervention

*Parent:*

the child's parent, foster parent or main carer

*Professional:*

a professional such as a teacher, nursery nurse who is involved with the child and will play a key role in the management programme

**Child involved:**

is the child going to be present and involved during further appointments

*yes*

*no*

**Purpose:**

what will be the emphasis of the subsequent visit or the stage of management at which the child is placed

*Assessment:*

child will be seen for further assessment before a treatment decision is made

*Referral on:*

Child will be seen again and a referral on to other agencies is likely to ensue from that session; no further speech therapy following that session is likely. If a referral on is likely as part of regular intervention, then the child should be coded under 'regular intervention' only.

*Review:*

child will be seen again for a follow-up appointment but not for some time

*Regular intervention:*

child will be seen for a period of regular therapy

**Timing:**

How will the intervention be organised from a timing point of view

**Immediacy:**

How soon will the child be seen again

*Sooner:*

within 1 month (from the date of the initial assessment)

or

within 3 months

*Later:*

more than 3 months

more than 6 months

more than 12 months

**Length of episode:**

the period of time over which the clients are to be seen is likely to be:

*Short:*

intervention is likely to last for a maximum of 3 months only

*Medium:*

intervention is likely to last for up to a maximum of 6-9 months

*Long:*

intervention is likely to go on for over 9 months

**Frequency:**

how regularly will the clients be seen

> *1/week:*

clients will be seen 2+ times per week

*Weekly:*

clients will be seen once a week

*Fortnightly:*

clients will be seen once every two weeks

*Monthly:*

clients will be seen once every month

*<Monthly:*

clients will be seen less than once a month

## CASES FOR CODING

### CASE 1...BOY...Dob: 22/2/89

Referred by senior clinical medical officer for hearing assessment centre on 11/9/91 CA  
2 yrs 6 mo

Initial appointment: 6/5/92 CA 3 yrs 3 mo

#### Referral letter:

This little lad is making rather slow progress with his language development. He understands well but is only making two words utterances. His hearing today is satisfactory and his middle ears are clear. I am referring him to the Speech Therapist and will check his hearing again at the end of the winter. The problem is only mild and parents are not very concerned. 10-30 single words were reported

#### Case history recorded:

Will be attending nursery class in the mornings in September 1992. Currently attends a toddler group

Has improved since last hearing assessment; his words are a lot clearer and he is more intelligible; he copies words now.

Mother is not really concerned.

He understands what is said and knows what is right and wrong.

Example of sentence given by mother: 'you ready mu, shut a door, we go'

First words appeared quite recently

Walked at 13 months

Is dry during the day but not at night

No major health problems or admissions to hospital

Enjoys television, puzzles, books.

Asks 'whats that' all the time

Is quite shy and placid generally but has got a temper.

Older child saw a speech therapist but was OK by nursery age. Second child has been fine

#### Strategies tried by parents:

Early learning videos

#### Assessment information:

Shy at first but settled to play with the toys and interacted with therapist if addressed directly

Symbolic noise used during tea party play

Related dolls house toys together appropriately (eg, put table and chair together, put knife on the table)

Following simple instructions in context; less reliable where there are no contextual/situational clues

Responds promptly to name and success on instructions improves when attention is gained first

Not very reliable at identifying objects by name

Responded more promptly to mother's requests for objects than to therapist's

Chattered quietly (unintelligible - ?jargon) whilst therapist took the case history.

Jargon not particularly addressed to anyone



Used some clear words in amongst the jargon

Sample:

that a bag  
don't know  
what's that  
(po)tato  
peas in there  
that yours  
that mine  
here y'are  
here your, mu  
finish?  
gone now  
all gone  
want more tato  
done it  
can't find it

OUTCOME:

Advice given

Follow-up session arranged in 2 months for re-assessment and further advice. Likely to need several appointments but probably quite spread out, so discharge likely in about 4-6 months. See individually with parent

CASE 2...BOY...Dob: 16/1/89

Referred by Health Visitor 4/4/91 CA 2 yrs 3 mo

Initial appointment: 12/2/92 CA 3 yrs 1 mo

Referral letter:

Despite a reported large vocabulary, parents are concerned re immature speech. Little heard at visits as rather shy. Well stimulated child. Parents say his peers are more advanced in their speech. Has been referred for a hearing assessment - 2/4/91

Case history recorded

Mother reported that child was not making self clear enough. Uses sentences appropriately. Finds it hard at nursery - other children don't make the effort to understand him and he is beginning to get very upset and cross about it. Has recently started hitting out at children - has happened quite frequently and the nursery have expressed concern.

He started talking at 12 months but was never clear. His first sentence was 'where's Joe's cat' which was pronounced as 'where doe dat'

He knows that his mum knows what he's trying to say

He tries to elaborate and demonstrate

Has only just recently learned how to suck from a straw.

Took 6 weeks to feed properly from birth - was never a natural suckler. Does not dribble

Doesn't chew meat and doesn't attempt to

Walked just after 12 months. Is well co-ordinated.  
Enjoys duplo, jigsaws, books, and listens to classical music. Knows his numbers 1-10.  
Couldn't do animal sounds

Hearing assessment information received. Assessed on 20/6/91, Report says: Assessment showed satisfactory hearing levels. I have not arranged review.

Strategies tried by mother

Has a frieze on his bedroom wall for the alphabet and Mum has been concentrating on one letter a week

Repeats things to him

Has made some progress: his vocabulary has increased enormously over the last 2-3 months but his sound system has not progressed at all since he started to talk

#### Assessment information

Settled to play happily with the toys. Chatted freely with his mother and interacted appropriately with therapist. Has a marked difficulty with his phonology using a restricted range of sounds, favoured place of articulation - only alveolar sounds present. No labials or velars. Using long sentences which were unintelligible to therapist but which mother was able to interpret broadly. Mother is very quick to interpret and expand child's utterances.

Phonic inventory:

Word initial: d,n,w,l

Within words: d

Word finals: t,s,z,n

Small sample:

cup: d di

knife: n s

sharp: da:t

fish: d s

sock: d t

watch: w ts

leaf: lis

snake: n t

river: w d

cake: d t

jam: d n

babies: d d z

open: d n

it: t

#### OUTCOME:

Referred to phonology group to be seen twice a week for one month and then re-assessed after 3 months but will have to wait for just over three months for the next suitable group. Parent will attend simultaneous parent group.

CASE 3... GIRL.....Dob: 17.10.89

Referred by Health Visitor 9/10/91 CA 2 yrs  
Initial appointment: 25/11/91 CA 2 yrs 1 mo

Referral letter:

This child's speech is very garbled and mother would like some advice and guidance. Her hearing and comprehension seem to be satisfactory, but her speech has shown no improvement during the last 5 months.

Case history recorded

Didn't start on language until 12-18 months.

Says mum, dad, nan. Other people pick out words but Mo is not really sure that they are proper words

Mo reports that she understands everything that is said to her

Quite lazy but does try to repeat things spontaneously now

Makes symbolic noises: train, dog, cat and has recently begun to play with dolls and tea-set and make cups of tea.

Walked at 10 months

Born at 38 weeks, pre-eclampsia and birth was induced but child OK at birth

Hearing has been checked - was OK at the first screening (9mths)

Has had no ear infections, Has had coughs and colds but Mo does not suspect a problem with hearing.

Child enjoys drawing and painting, rough and tumble play, dolls and tea-sets, puzzles, helping Mo and Fa.

Was very shy but over the last few months seems to be more confident in approaching and relating to other adults.

Ways in which Mo has tried to help with her speech: reading to her; involve her with everything; watches everything and listens to mum all the time; enjoys following instructions and helping out with younger brother

Mother not concerned about comprehension

Younger child is 11 mths

Family history: dad was very similar in that his older sister was the only one who understood him as a child.

Attends a playgroup 2 mornings/week

Assessment information:

Settled easily into the session but fairly quiet throughout

Interacted happily with therapist nonverbally

Attended to toys of own choice for reasonable periods and could switch the focus of her attention from visual to auditory tasks with a prompt from an adult. Her play with home corner toys, small doll's house people was age appropriate. For example:

Appropriate use of dustpan and brush

pouring with kettle

fed teddy following verbal prompt

cleaned teddy's teeth, teddy's hair, mummy's hair

Followed a range of conversation and simple instructions during the session, eg turn it round

Reacted to quiet noises outside the room

Vocalised occasionally as if in comment on a situation and used pointing with vocalisation to obtain toys. Also used 'oh wow' in reaction to some toys. Used 'baby,

gone, no' during the session and Mo reported a small number of other single words. Mother joined in with her play in a relaxed way. Not asking questions; followed child's lead in the play and picked up on therapist's modelling of single words

OUTCOME:

Referred for full hearing assessment. Discussed positive strategies. No further action planned from SLT. Mo to contact SLT if further progress does not occur or if still concerned.

CASE 4...BOY...Dob: 18.4.90

Referred by Health visitor on 14/1/92 CA 1 yr 10mo  
Initial appointment: 6/4/92 CA 2 yrs

Referral letter:

Mother is concerned re child's speech. No distinguishable words at all. Babbles to himself during the day. Appears to be in his own little world  
Frequent ear infections since he suffered a bout of dysentery in June '91; very ill; hospitalised for a week.  
Referred for hearing assessment, 14/1/92

Case history recorded

Parents have seen a big improvement in child in himself as far as sociability is concerned, since referral. His attitude towards other people has much improved over the last few months. Was previously quite unhappy. Fewer tantrums. Parents are not as worried now. No changes in speech since referral.

Uses lots of babble  
Mother says he has about 6 words.  
Tries to say Thomas, Gordon, Dad, Mum, Cat (says this if he sees a cat)  
Not speaking much but more happy to be with people  
Mainly noise making rather than words

Delivered by Caesarean section due to mother's ill health and concern over baby.  
Incubated for first week of life.  
Still puts things in his mouth, crayons, small toys  
Over a year old when he walked

Hearing was assessed and said to be OK in Feb '92  
General health is good  
Still doesn't sleep as well after dysentery, June '91  
Drinks a lot, but won't eat some meat  
Sometimes gets frustrated when not understood  
Attends Mother and Toddlers on Tuesday afternoons - enjoys running around but does not settle to play or interact with other children. Starts nursery in 1993

Has an older brother (age 4 yrs) He has no developmental problems apart from stammering when second child was born. Could have a conversation with him from an early age.

Began to stammer and withdrew for a while. Is now fine and tries to play with younger brother.

Enjoys puzzles - does them by himself; looks at books, turns pages singly; likes climbing and rough and tumble play; knows when its bedtime; will shut the door on request at home

Assessment information

Attention: very focussed on activity of own choice, When anyone tried to intervene,(mum or dad) walks off

Showed appreciation of 'no' /tone of voice by crying

Enjoyed posting tasks

Eye contact appropriate

Looked at book the right way up

If Mum said 'no' or took something off him, he went to Mum with eyes shut and cried, burying head on her shoulder

Wouldn't look at any pictures

Showing relational level of play and when no longer interested, threw the toys on the floor - discarded them Pretended to feed self once in imitation of mother

Difficult to assess comprehension

Said 'a cu' (cup) in imitation

OUTCOME:

Offered a follow-up appointment for further assessment. Is likely to need intervention over a long period. Will probably be seen about once a month or once every 6 weeks although would benefit from much more intensive work than that; however from parents comments during the session they are unlikely to cope with anything which is much more intensive than that. To be seen with a parent.

**APPENDIX H**  
**TWO COMPLETED**  
**SGN BOOKLETS**

Significant Factors  
in the  
Assessment of Preschool  
Children  
for  
Speech & Language Therapy

Book 2  
Assessment Networks

S.Roulstone  
Institute of Child Health  
Bristol Royal Hospital for Sick Children

Please complete for every child

|                   |     |
|-------------------|-----|
| Therapist number: | T3  |
| Child's number:   | C5. |

|      |                                     |        |
|------|-------------------------------------|--------|
| Male | <input checked="" type="checkbox"/> | Female |
|------|-------------------------------------|--------|

Referred by:

|                        |                                     |                          |
|------------------------|-------------------------------------|--------------------------|
| Health visitor         | <input checked="" type="checkbox"/> | Clinical medical officer |
| General practitioner   |                                     | Nursery staff            |
| Nursery staff          |                                     | Parent                   |
| Other (please specify) |                                     |                          |

|                                |                |
|--------------------------------|----------------|
| Date of birth:                 | 20 . 4 . 90    |
| Age at referral:               | 2 yrs 7 mths   |
| Age at initial assessment:     | 2 yrs 9 mths   |
| Expected date of school entry: | September 1994 |

Location of assessment

|                        |                      |                                     |
|------------------------|----------------------|-------------------------------------|
| Child's home           | Clinic/health centre | <input checked="" type="checkbox"/> |
| Nursery                | Playgroup            |                                     |
| Other (please specify) |                      |                                     |

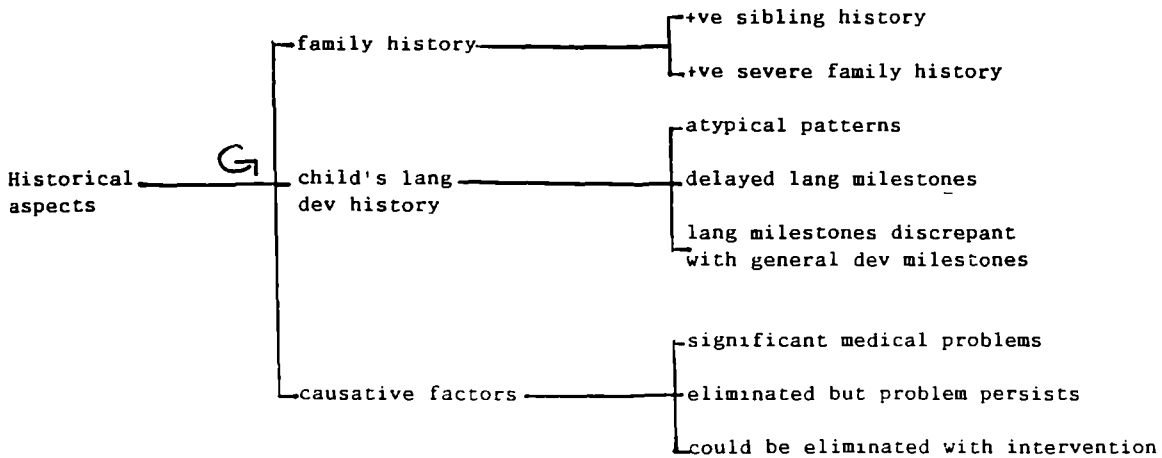
|                       |    |      |
|-----------------------|----|------|
| Length of assessment: | 30 | mins |
|-----------------------|----|------|

|                               |    |      |
|-------------------------------|----|------|
| Length of time taken to code: | 30 | mins |
|-------------------------------|----|------|



# Case 5.

## Characteristics of the Priority Child (1) Historical aspects

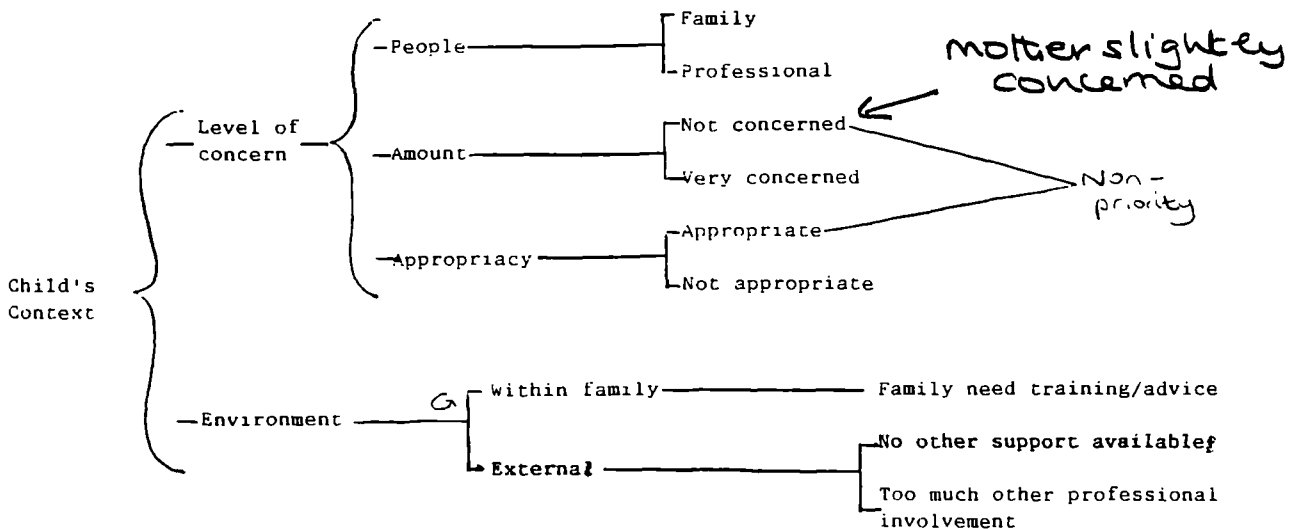


Please give any further information about the child's history which influenced your decision to prioritise this child.

lack of language / play progress.

late walking (2.0 yrs) but H.V. reports now within N.L.M.

## Characteristics of the Priority Child (2) Child's context



Please give any further information about the child's context which influenced your decision to prioritise this child.

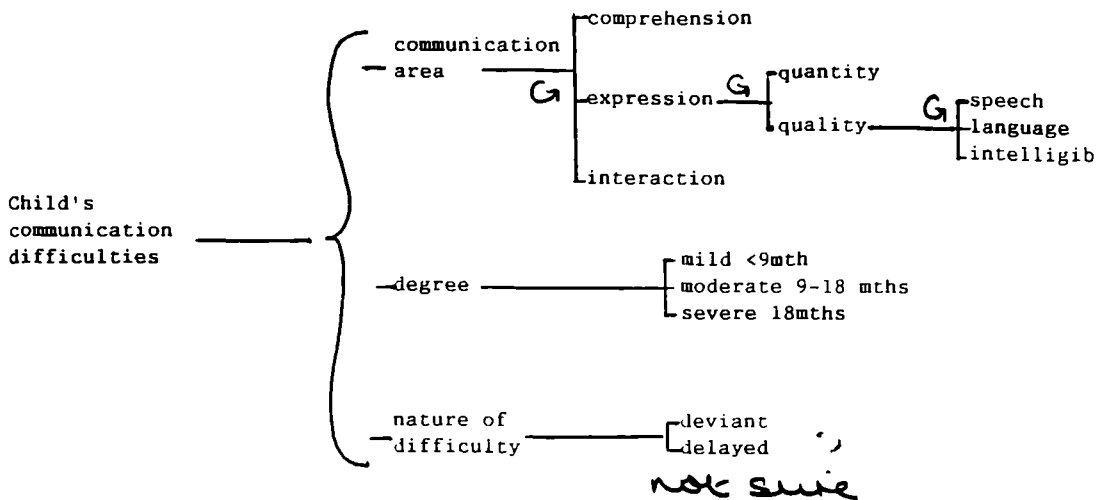
Child only sees mother, father, grandmother & uncle socially.

No other contact. No contact with children.

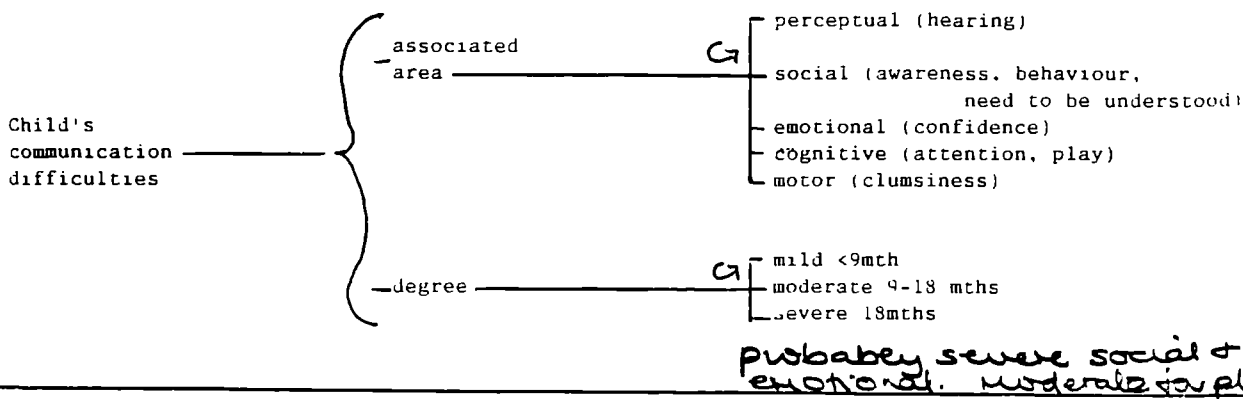
Unusual family pattern - mother and child spend every day (Monday → Friday) all day with grandmother

Child unable to leave mother. Cries and clings with

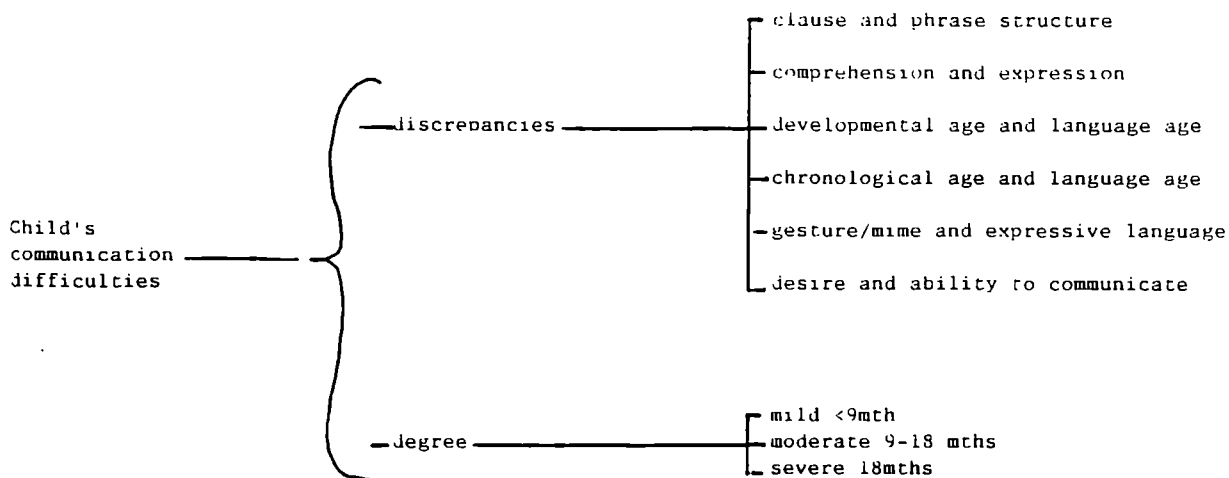
Characteristics of the Priority Child (3) Child's communication difficulties:  
a) communication area



Characteristics of the Priority Child (3) Child's communication difficulties:  
(b) associated area.

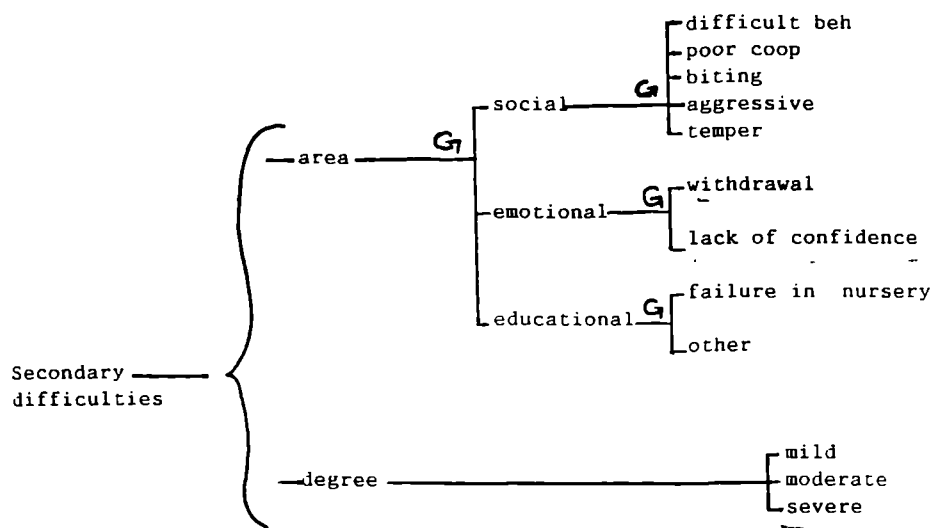


Characteristics of the Priority Child (3) Child's communication difficulties:  
(c) discrepancies



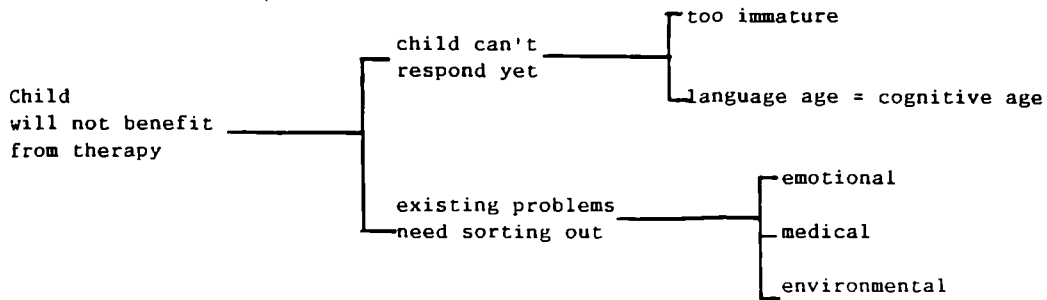
Please give any further information about the child's communication difficulties, associated problems or any apparent discrepancies which influenced your decision to prioritise this child.

# Characteristics of the Priority Child (4) Secondary difficulties



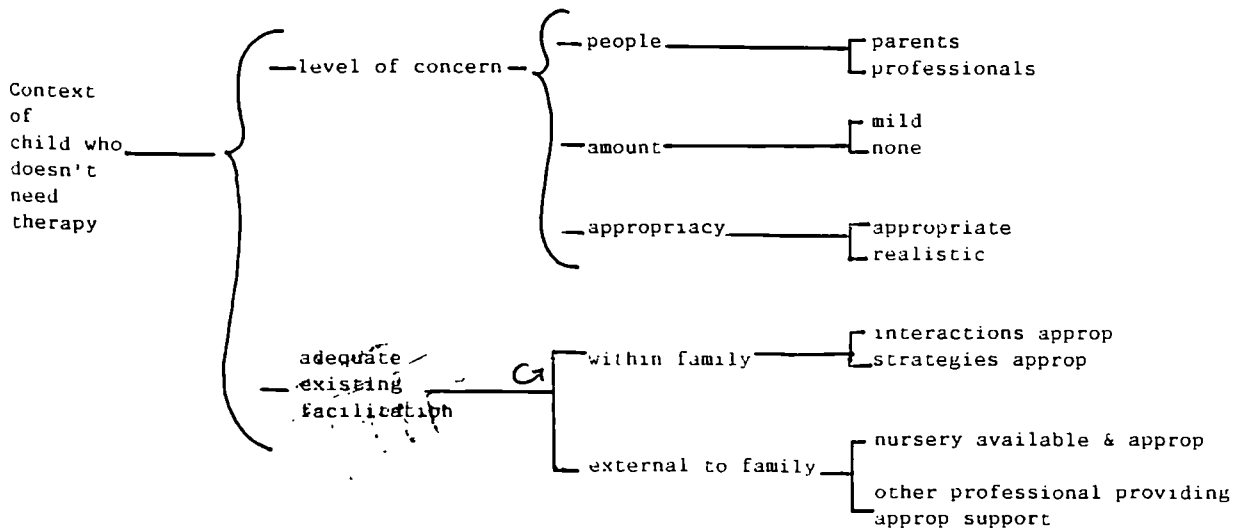
Please give any further information about any secondary difficulties which influenced your decision to prioritise this child.

Characteristics of the Non-Priority Child (1) Child who will not benefit from therapy



Please give any further information about why it is felt that this child will not benefit from intervention.

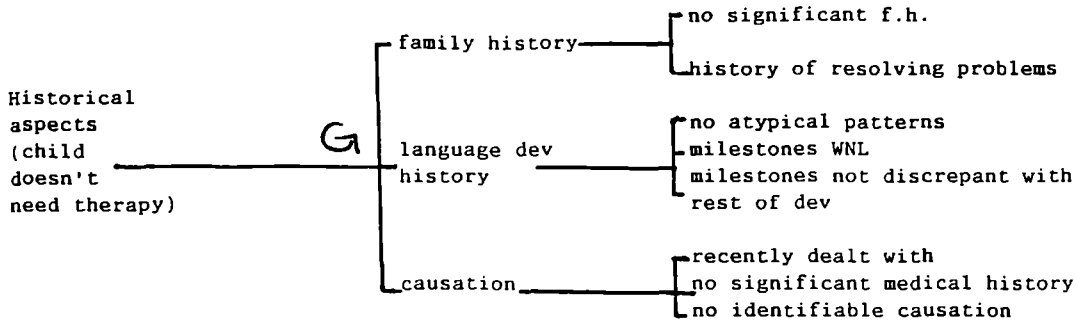
Characteristics of the Non-Priority Child (2) Context of the child who does not need therapy



Please give any further information about the child's context which you feel influenced your decision not to prioritise.

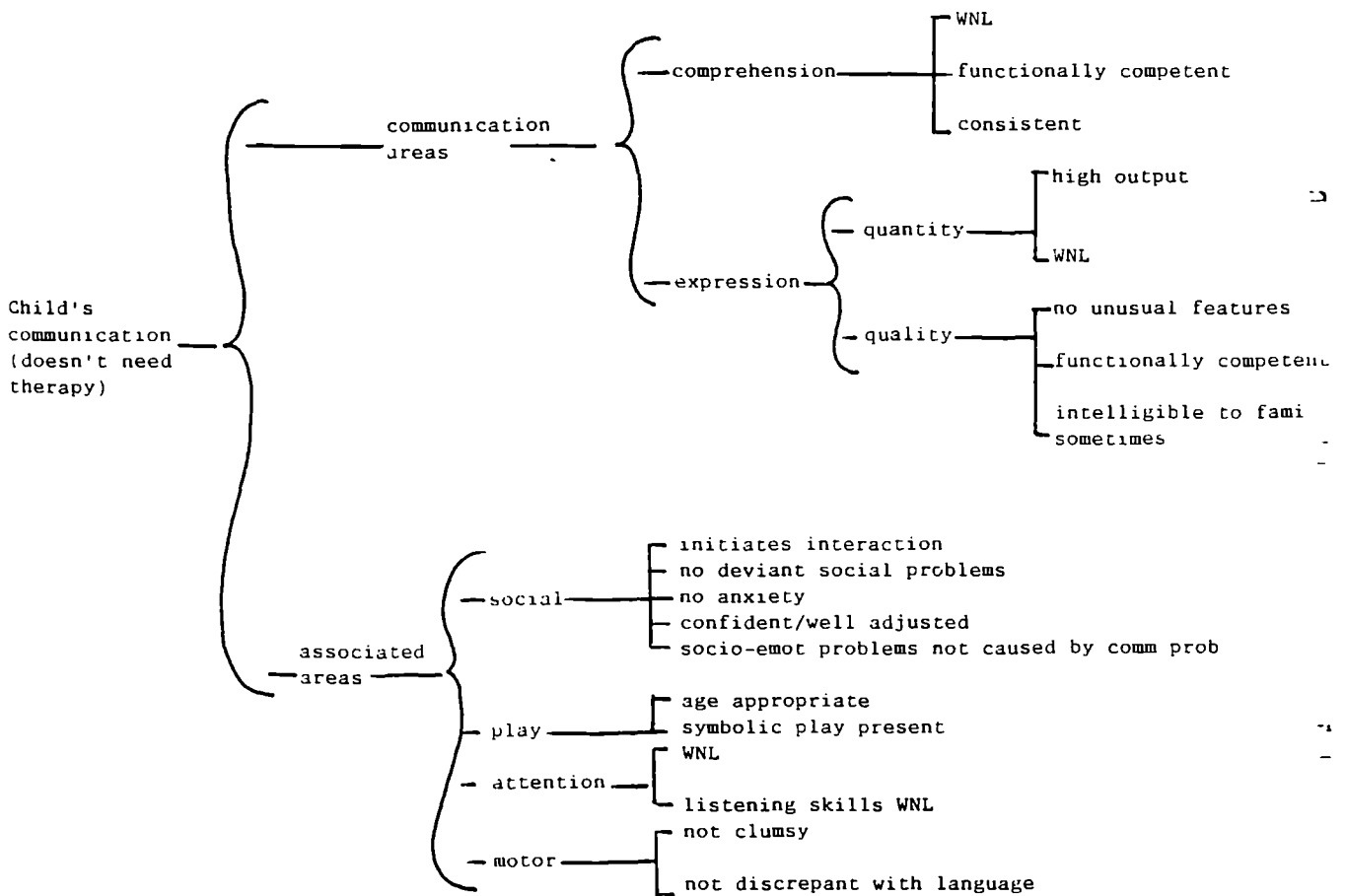
Family have history of "ant professional" attitude i.e. refused help.  
 personal bias against involvement with child - not enough to sway priority.

### Characteristics of the Non-Priority Child (3) Historical Aspects



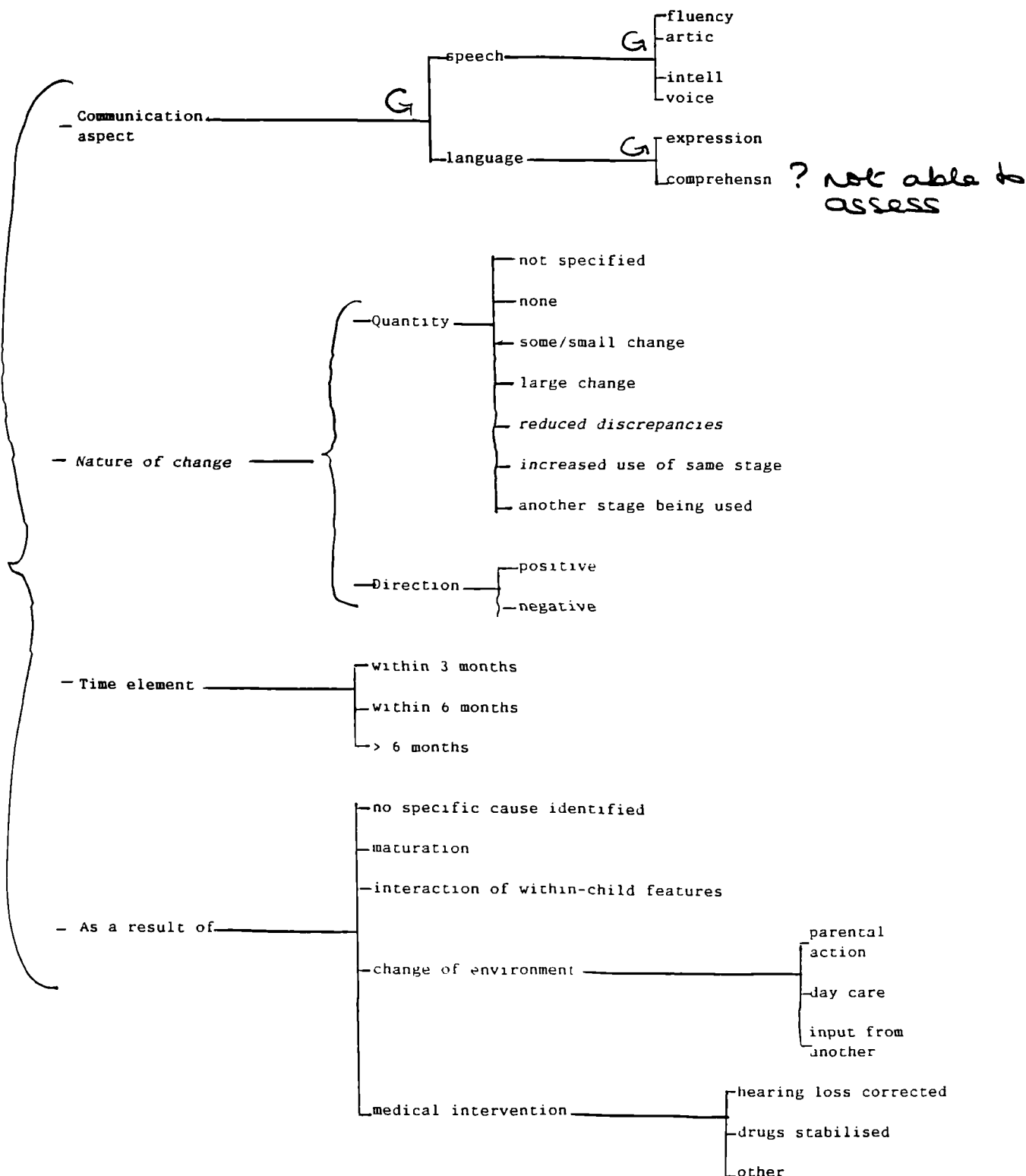
Please give any further information about the child's history which you feel influenced your decision not to prioritise.

### Characteristics of the Non-Priority Child (4) Child's communication



Please give any further information about the child's history which you feel influenced your decision not to prioritise.

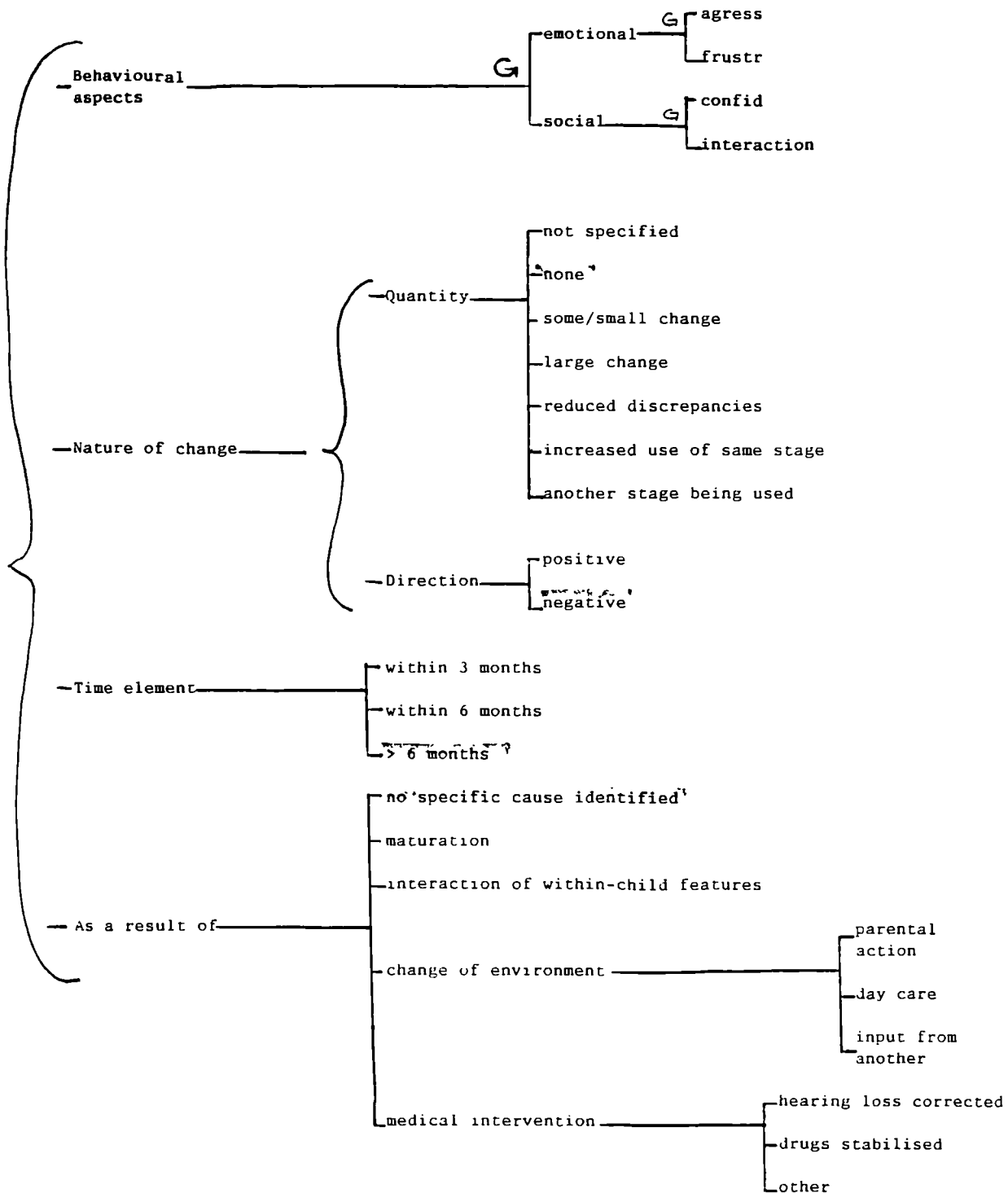
Signs of change (1) Communication aspects



? not able to assess

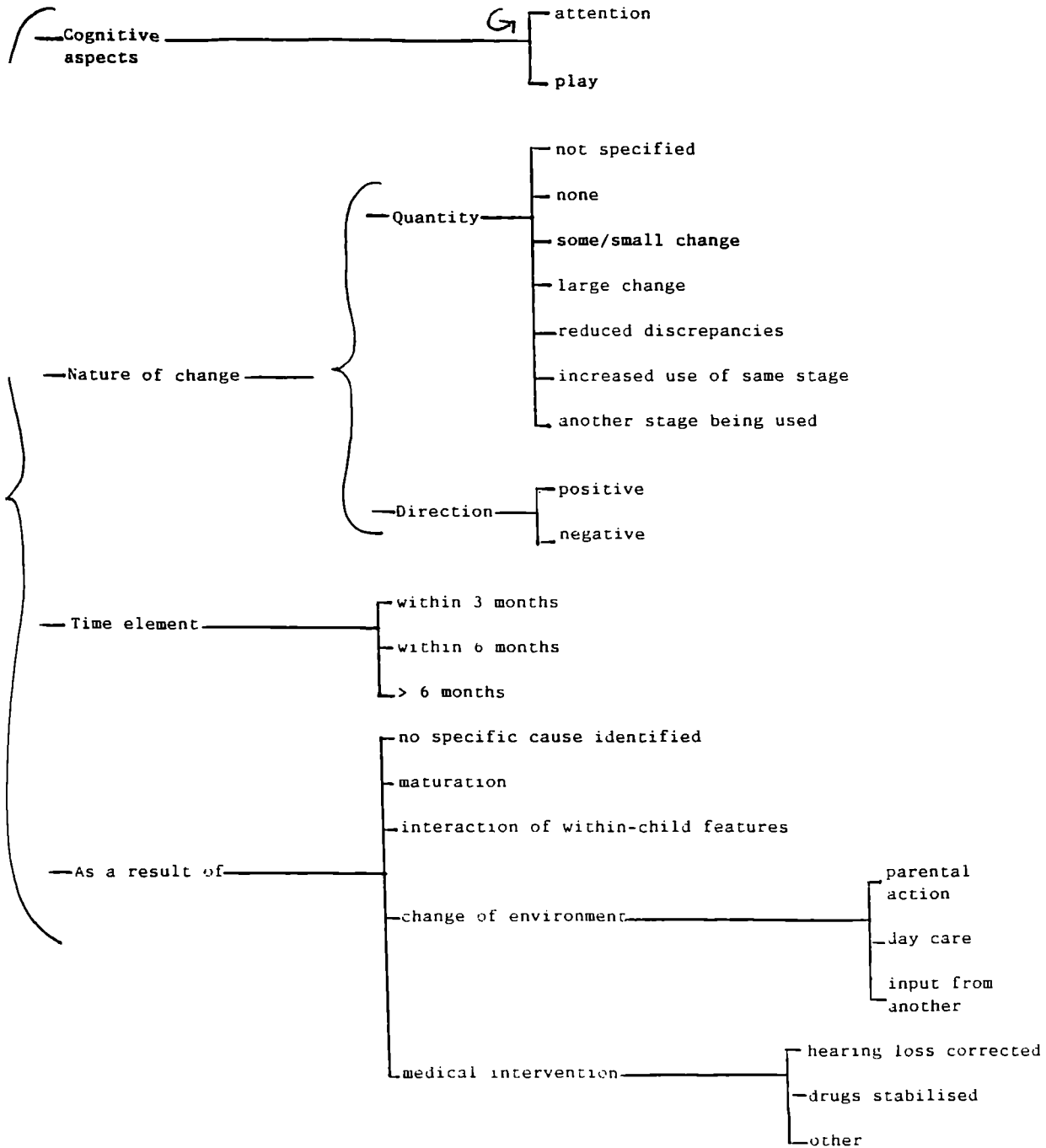
Please give any further information that affected your decision that you feel you were not able to reflect in the above network

## Signs of Change (2) Behavioural aspects



Please give any further information that affected your decision that you feel you were not able to reflect in the above network

### Signs of Change (3) Cognitive aspects

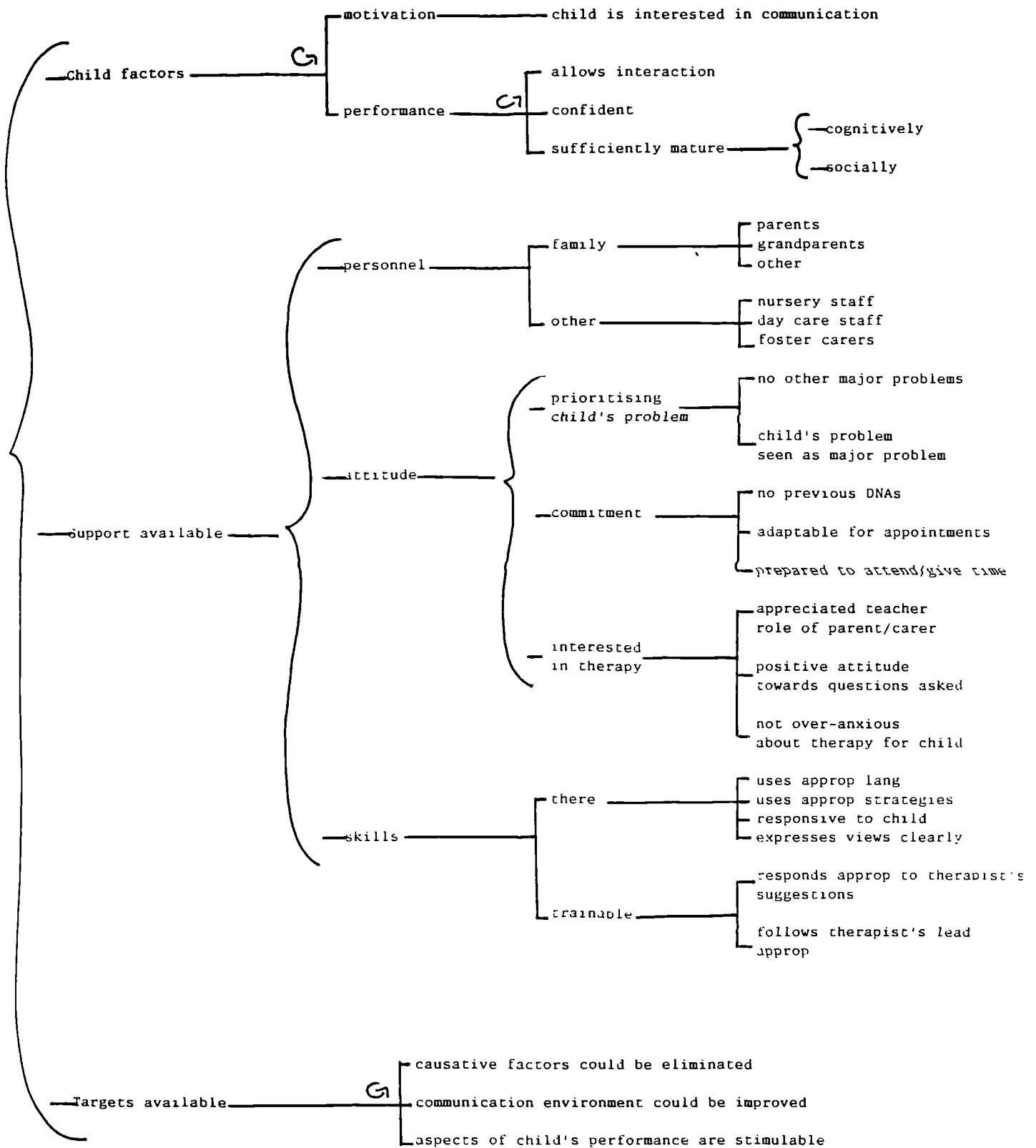


Please give any further information that affected your decision that you feel you were not able to reflect in the above network



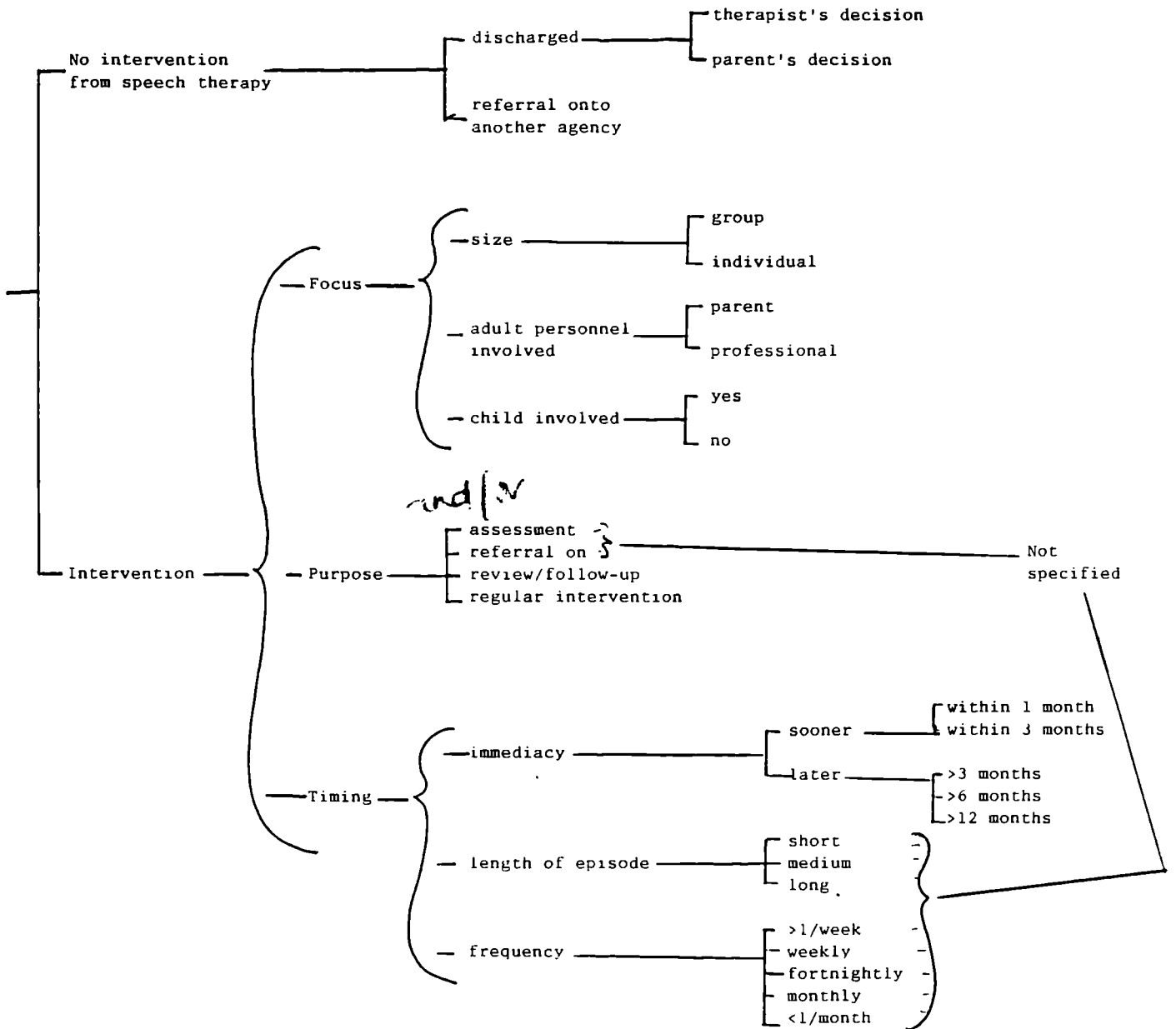
Effectiveness of Intervention

Not able to assess.



Please give any further information which indicated to you that intervention would be successful

# Management Options



Please give any further information about your management decision for this child that you feel you were not able to reflect in the above network

Significant Factors  
in the  
Assessment of Preschool  
Children  
for  
Speech & Language Therapy

Book 2  
Assessment Networks

S.Roulstone  
Institute of Child Health  
Bristol Royal Hospital for Sick Children

T9

Please complete for every child

|                   |     |
|-------------------|-----|
| Therapist number: | T9  |
| Child's number:   | E34 |

|      |                                     |        |                          |
|------|-------------------------------------|--------|--------------------------|
| Male | <input checked="" type="checkbox"/> | Female | <input type="checkbox"/> |
|------|-------------------------------------|--------|--------------------------|

Referred by:

|                        |                          |                                     |
|------------------------|--------------------------|-------------------------------------|
| Health visitor         | Clinical medical officer | <input checked="" type="checkbox"/> |
| General practitioner   | Nursery staff            | <input type="checkbox"/>            |
| Nursery staff          | Parent                   | <input type="checkbox"/>            |
| Other (please specify) |                          |                                     |

|                                |              |
|--------------------------------|--------------|
| Date of birth:                 | 22/2/89      |
| Age at referral:               | 2 yrs 6 mths |
| Age at initial assessment:     | 3 yrs 3 mths |
| Expected date of school entry: | Sept 93      |

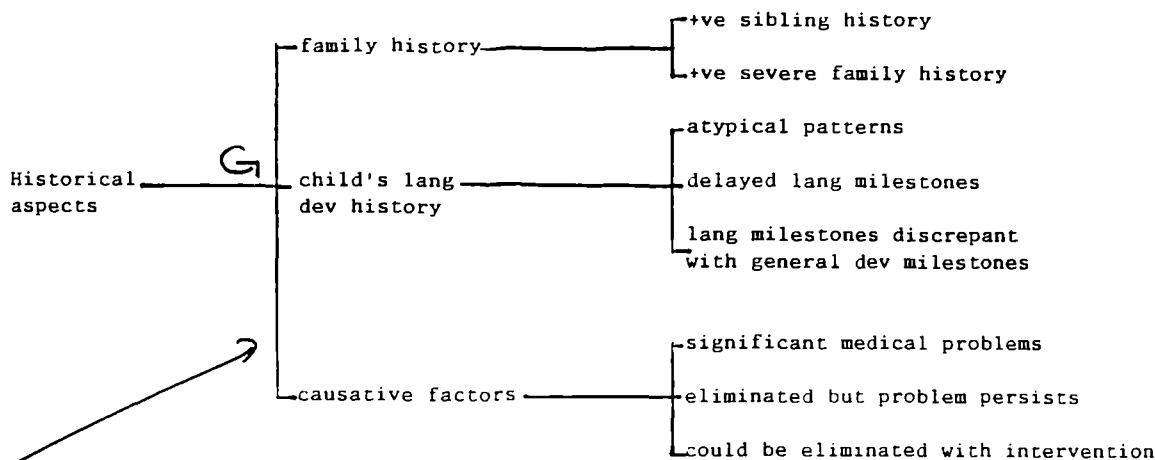
Location of assessment

|                        |                      |                                     |
|------------------------|----------------------|-------------------------------------|
| Child's home           | Clinic/health centre | <input checked="" type="checkbox"/> |
| Nursery                | Playgroup            | <input type="checkbox"/>            |
| Other (please specify) |                      |                                     |

|                       |         |
|-----------------------|---------|
| Length of assessment: | 60 mins |
|-----------------------|---------|

|                               |         |
|-------------------------------|---------|
| Length of time taken to code: | 55 mins |
|-------------------------------|---------|

## Characteristics of the Priority Child (1) Historical aspects

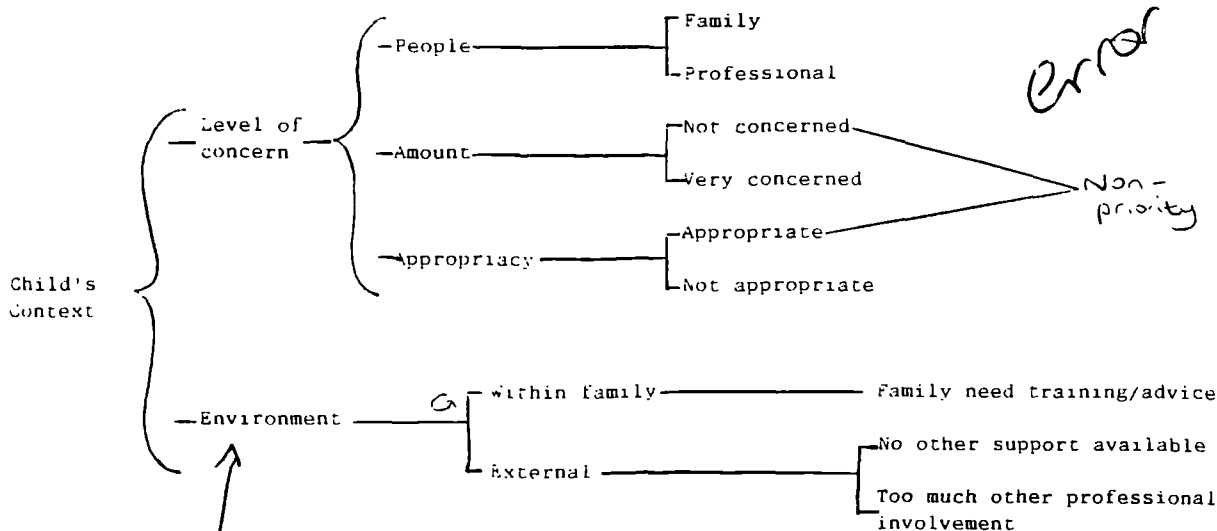


(Is it really the case that you can only code one of these?  
 I am sure that at times I might be concerned about a child because of poor lang. dev't plus a positive family history.)

Please give any further information about the child's history which influenced your decision to prioritise this child.

Sony - I've just seen what the curly ~~bracket~~ areas means!

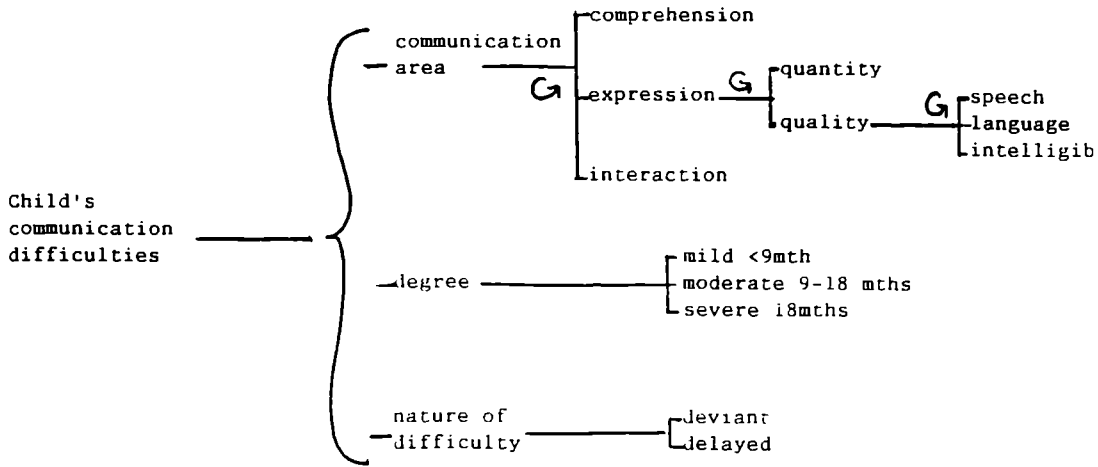
## Characteristics of the Priority Child (2) Child's context



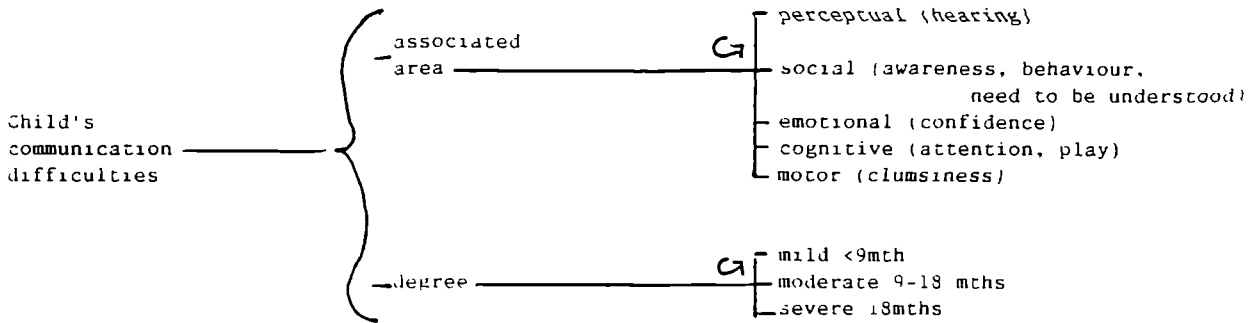
Please give any further information about the child's context which influenced your decision to prioritise this child.

I'm not sure what to do here: as far as I understand it, you only code aspects which you feel caused you to prioritise the child - I don't feel that this is a "priority environment" so do I leave it out? Or am I supposed to code it anyway as it's in a curly,

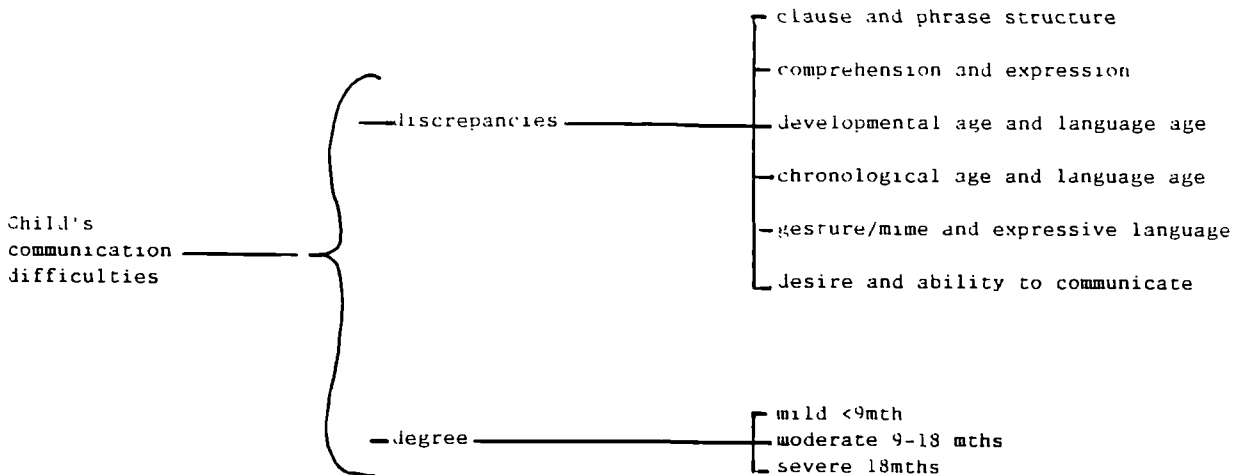
Characteristics of the Priority Child (3) Child's communication difficulties:  
a) communication area



Characteristics of the Priority Child (3) Child's communication difficulties:  
(b) associated area.

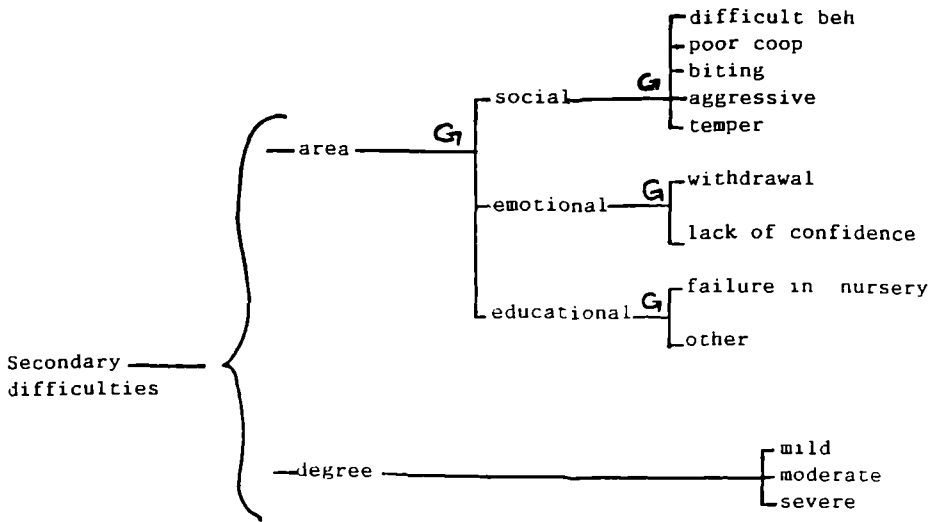


Characteristics of the Priority Child (3) Child's communication difficulties:  
(c) discrepancies



Please give any further information about the child's communication difficulties, associated problems or any apparent discrepancies which influenced your decision to prioritise this child.

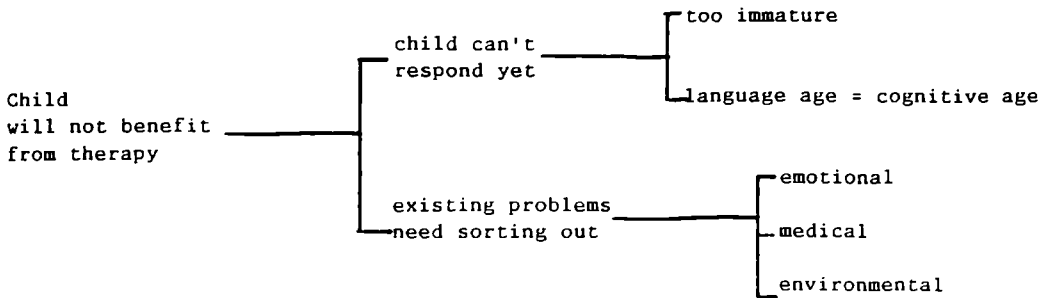
Characteristics of the Priority Child (4) Secondary difficulties



Please give any further information about any secondary difficulties which influenced your decision to prioritise this child.

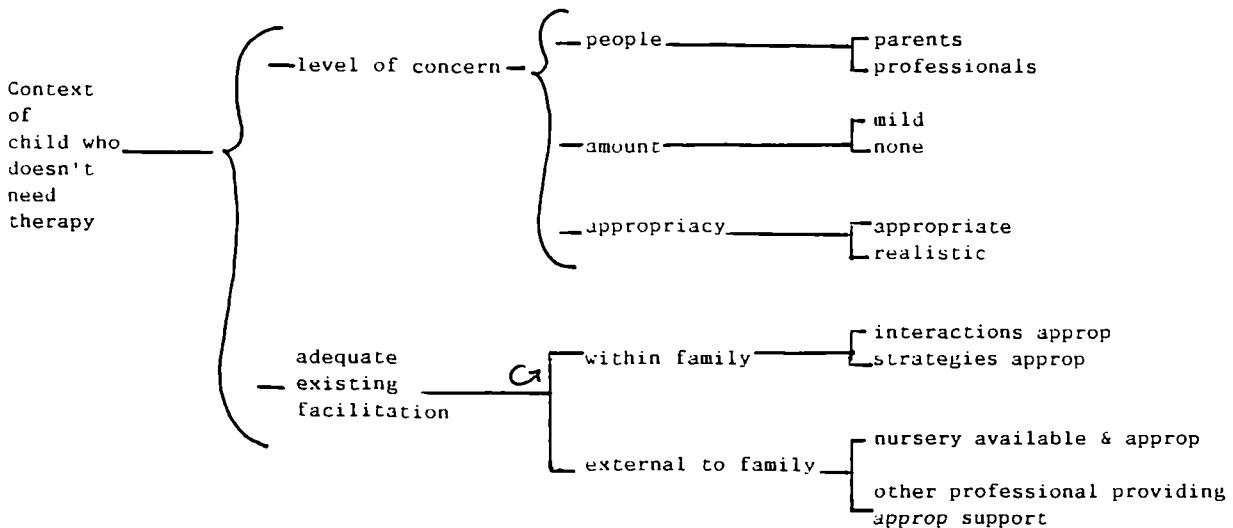
I think I caused my own problem with "Characteristics of the priority child, Child's context", because I started coding this part of the booklet first, when I should have started with the "Non priority child" booklet - then I wouldn't have needed the "Child's context" section at all.

**Characteristics of the Non-Priority Child (1) Child who will not benefit from therapy**



Please give any further information about why it is felt that this child will not benefit from intervention.

**Characteristics of the Non-Priority Child (2) Context of the child who does not need therapy**



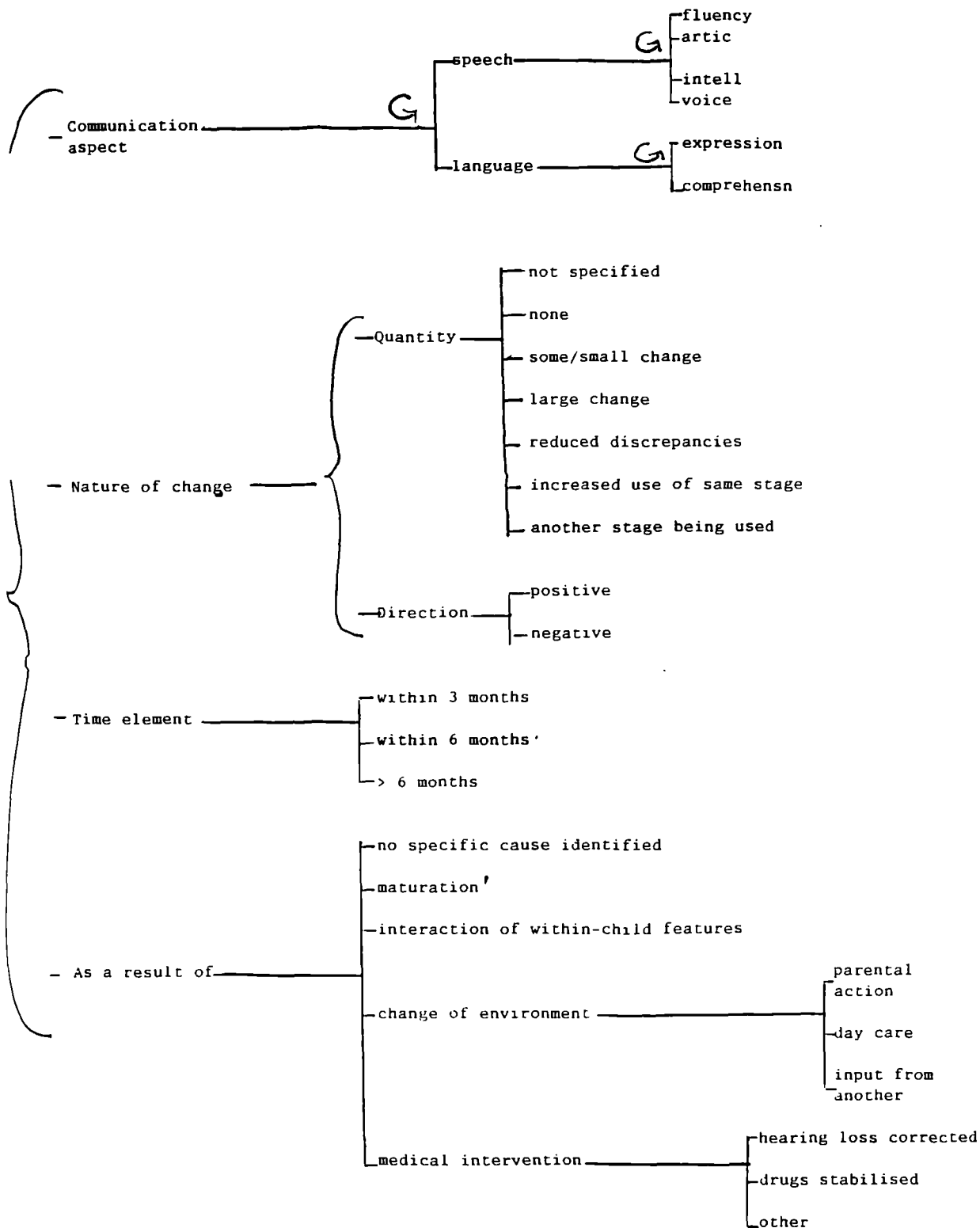
Please give any further information about the child's context which you feel influenced your decision not to prioritise.

*No able to report fairly accurately on child's output: suggests suitable awareness of development.*

*Home provides useful materials for stimulating language - eg puzzles and books.*

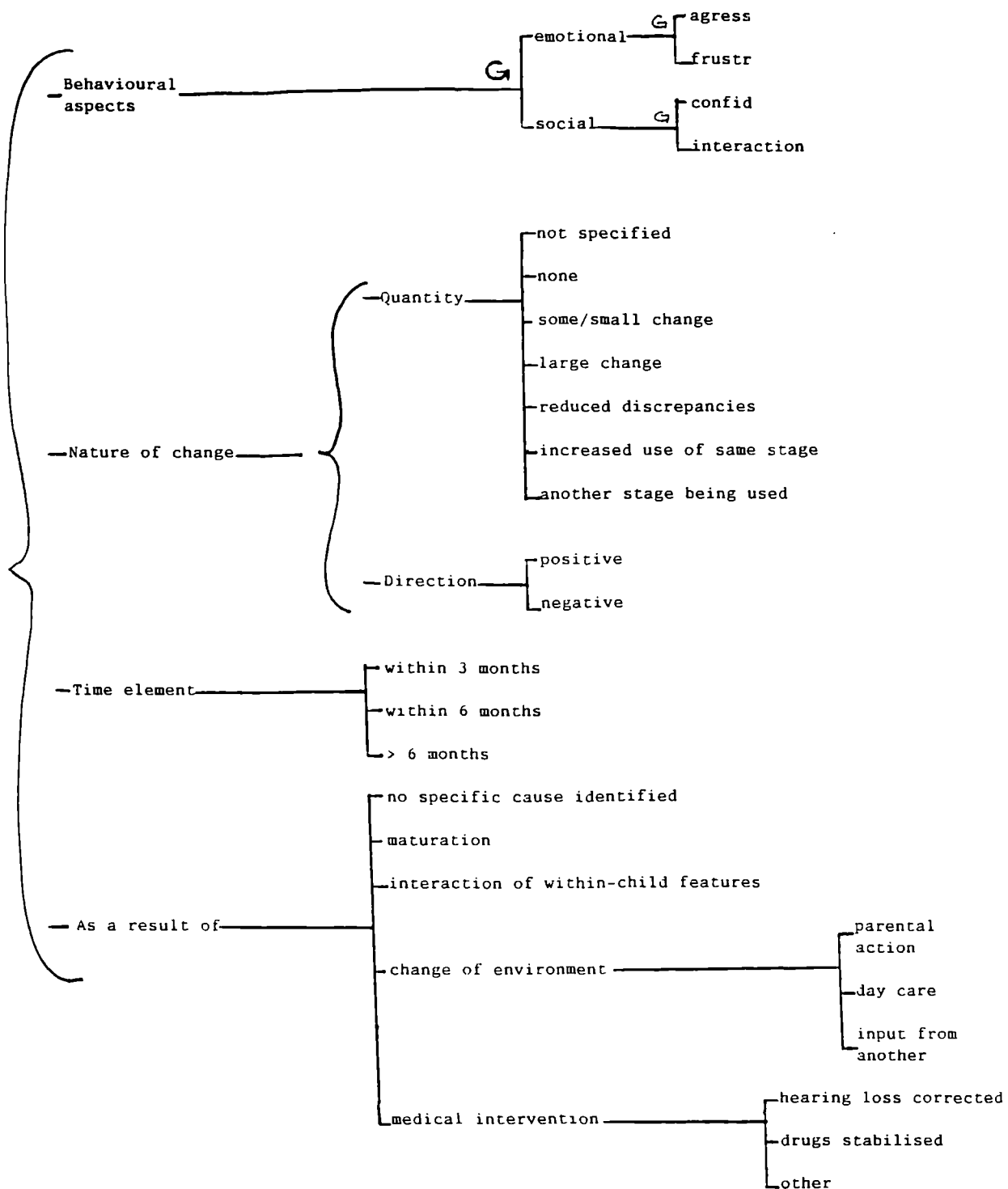


Signs of change (1) Communication aspects



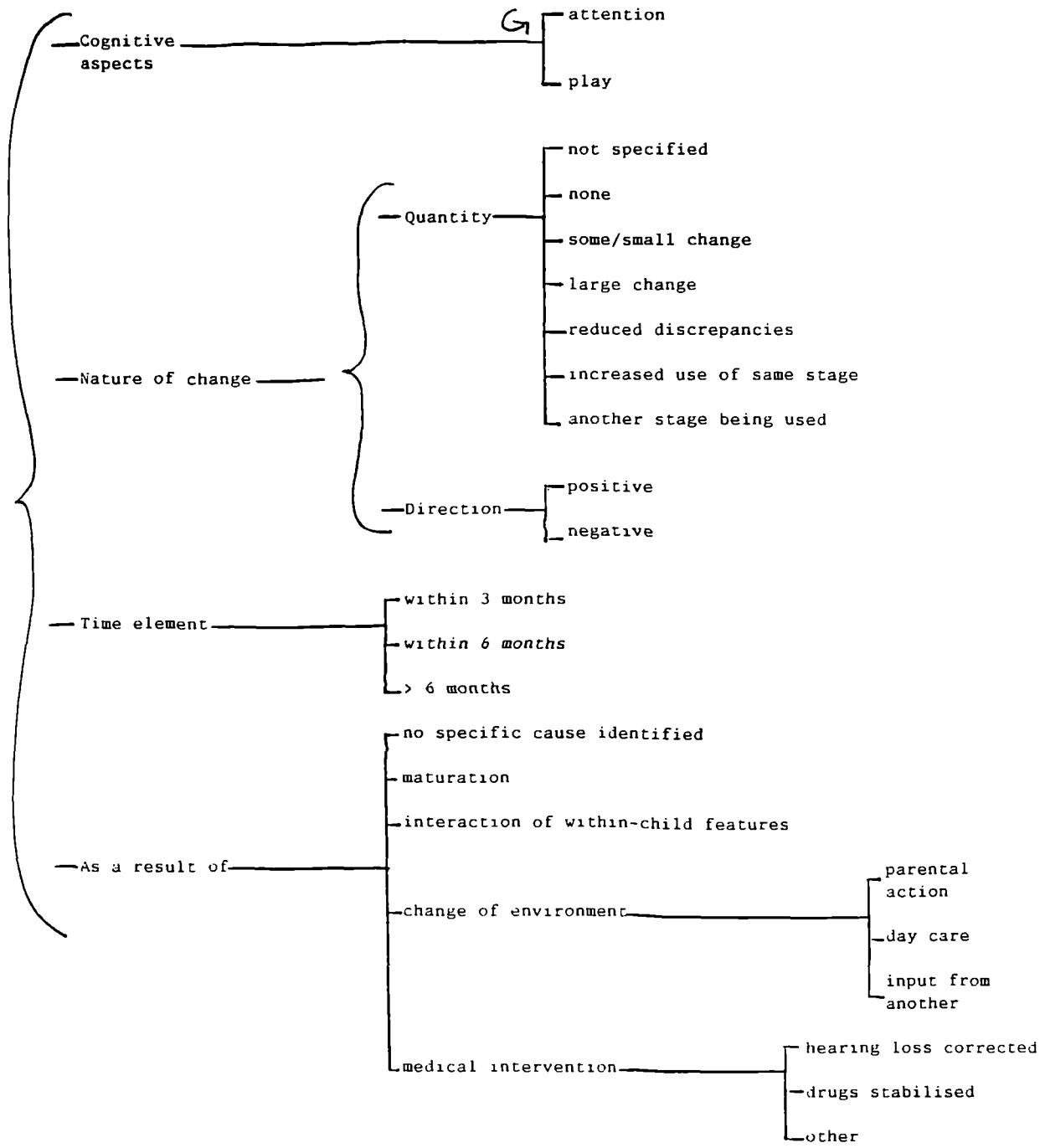
Please give any further information that affected your decision that you feel you were not able to reflect in the above network

## Signs of Change (2) Behavioural aspects



Please give any further information that affected your decision that you feel you were not able to reflect in the above network

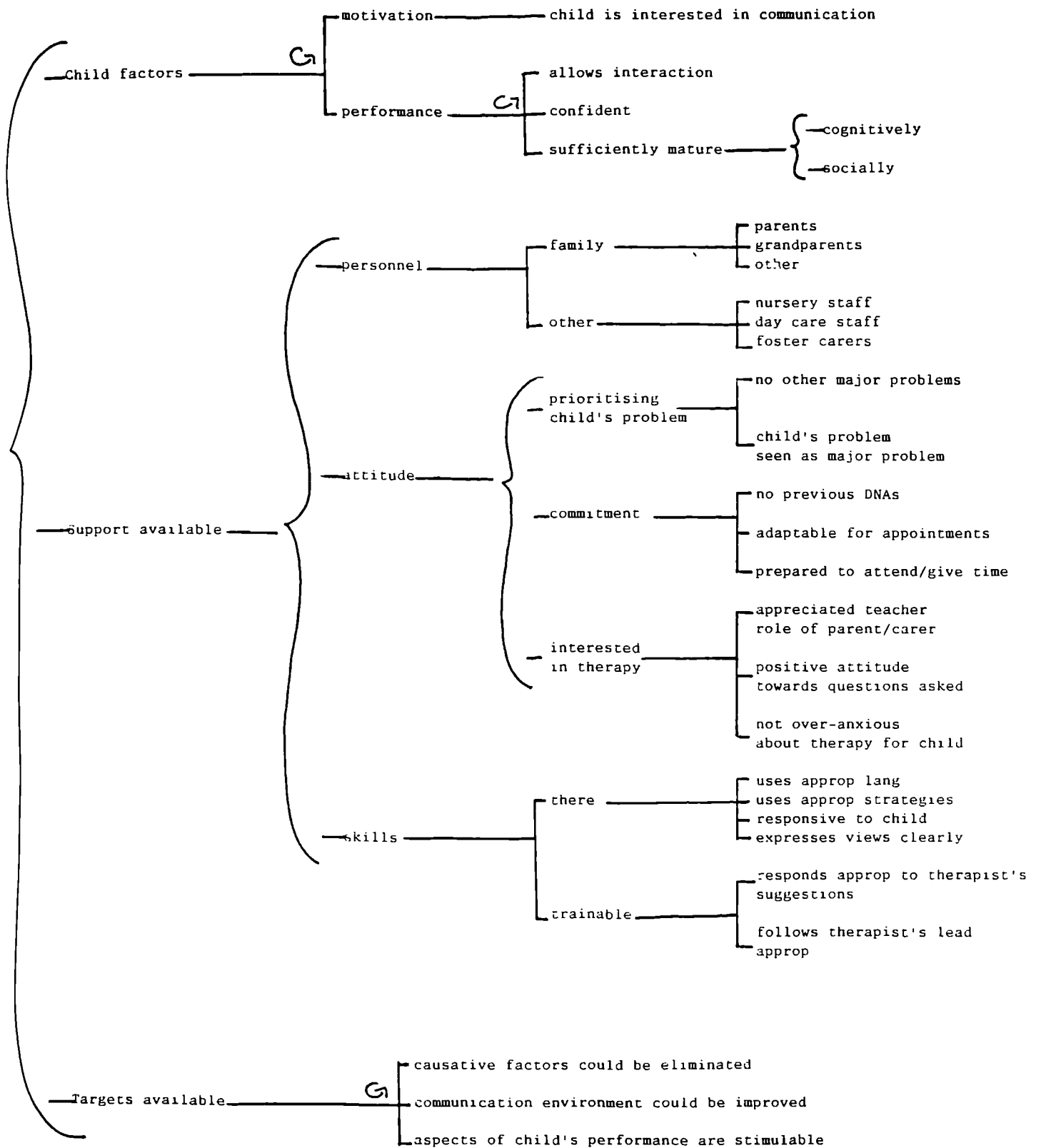
Signs of Change (3) Cognitive aspects



Please give any further information that affected your decision that you feel you were not able to reflect in the above network

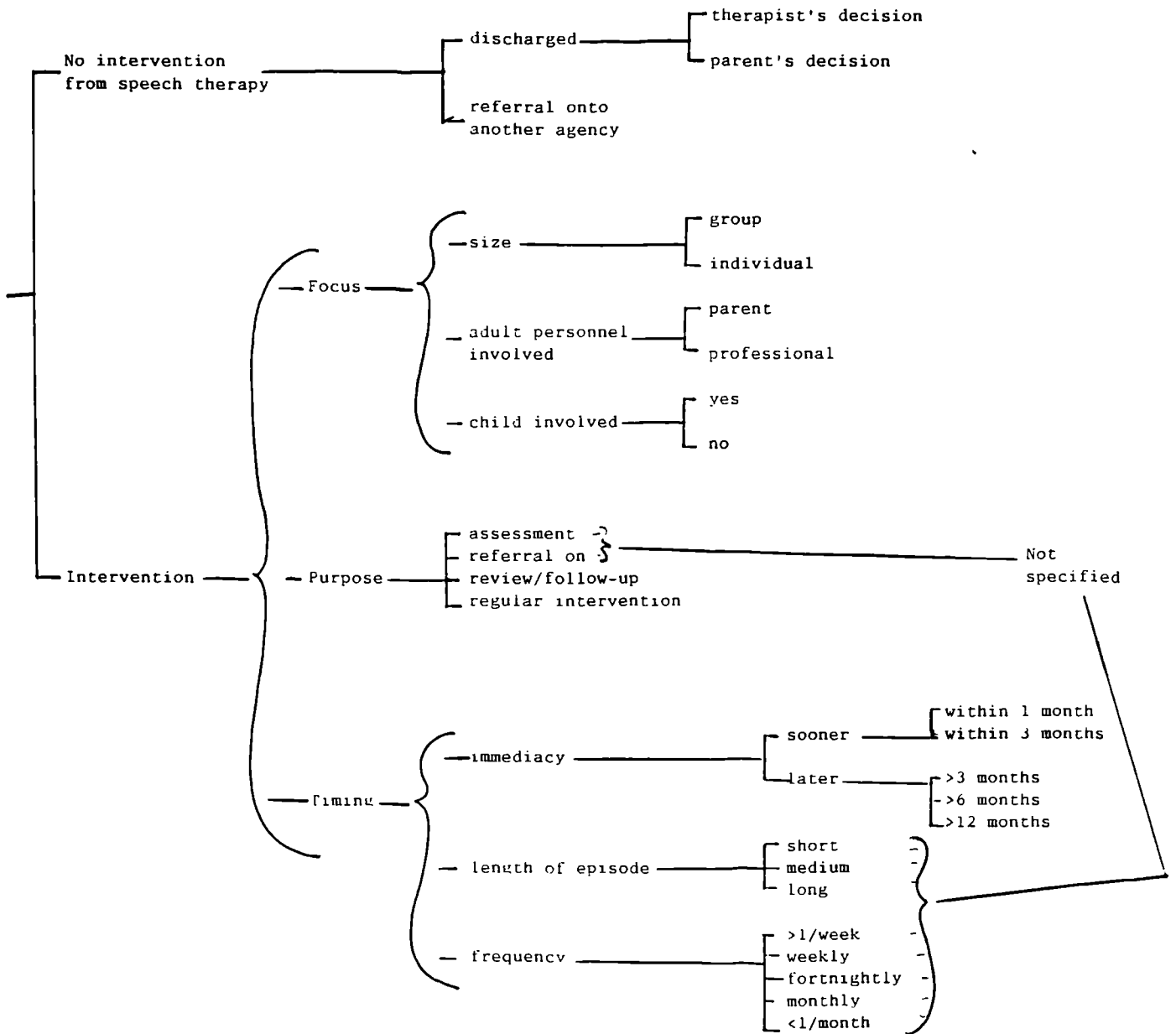
Do I code this if it has been decided next to interview?

Effectiveness of Intervention



Please give any further information which indicated to you that intervention would be successful

# Management Options



Please give any further information about your management decision for this child that you feel you were not able to reflect in the above network

## APPENDIX I TRANSCRIPT OF DEBRIEFING DISCUSSIONS

T2

### **General comments:**

Got on quite well. I was surprised that you gave the outcome - I thought you'd leave that out and let us make the decision. I did agree with you anyway. There was only one and I did agree, it was to do with - they weren't going to be included into a group for 3 months and I thought they needed something immediately. It was an interesting way of looking at things and as a result of doing this it was quite interesting for my future work. We think about these things automatically and it's only when someone draws attention to the specifics - I've seen loads of new cases recently and it makes you think about what makes you make the decisions and consequently, the two cases that I saw, I've since seen, and thought yes, I was right to make those decisions. It made me think a bit more.

### **It helped your reflection rather than changed what you did.**

Yes it certainly didn't change - I knew they both needed to be seen. I had a few difficulties with coloured pens and since I haven't done it for a while I can't remember what they are. Yes it was a very interesting way of doing it, certainly broke it down and I thought to myself, I don't know how you did this - a lot of work.

I did the summary first with three but not with one - case 4 - I don't know why. I knew the child had to be seen but I had problems with why I wanted to see them, probably because they needed further assessment - it wasn't clearcut priority - needed further assessment and then you might add some more to this summary. Sometimes you may not be able to say why you are prioritising until you've seen that child again. But with my own cases I did and I'm sure it has something to do with the fact that I'd seen those children - they were there in front of me. It's quite interesting trying to picture a child from your descriptions - they're good but it's nothing like seeing a child. Some of them, if they'd been a one off meeting, you got a lot from them. I sometimes don't get very much at all from the first meeting - don't spend enough time with the first one - so stretched - allow an hour. With the families that I'm worried about, I know that I'm going to see that family again and therefore I don't need to ask everything in this session 'cos it could be quite difficult for the family therefore I will ask it at the next or even the next session and then I get a much bigger picture of the child, whereas you've got quite a good picture of them from that first meeting.

### **Case 1**

**Priority rating:** 3.5

**Time taken to code:** ?

**Outcome:** Agreed.

### **If you were handing him on to another therapist what would be your advice?**

Your outcome was a follow-up session in two months which indicated not too much concern, and I did agree so one of the things - the mother will need quite a lot of training and that would be the main focus and you could possibly see the mother without the child for a while, and that you could involve the family in a mother's group even if you couldn't see the child for therapy.

### **What would happen to that child if you didn't make them a priority?**

I would probably say... how old was this child... 3,3.. I would say probably the child will be OK but likely to be delayed in school for a little while, with language. Yes the language is going to move, but it's going to take a little while. Probably without training the child will survive but maybe a little limited and gradually catch up. It wasn't one that I immediately thought 'panic' about. Yes he's delayed; he's got attention difficulties so that certainly might be something that might continue and affect school, depending on whether he goes to a nursery; that might iron itself out in nursery without our help.

### **What sort of things would have made him a higher priority?**

If the play had been more delayed. If there hadn't been interaction with mother, there was obviously quite good interaction with mother; if the comprehension was much more delayed. If interaction had been poor with the mum I would have seen the child much more quickly. Understanding sounded OK. He was talking in phrases, he was interacting with his mum, his play was developing - all of those are very positive signs and if a couple of those factors had been negative I would've prioritised more.

**What would have had to be different for you not to see him at all?**

More language, longer sentences, responding to therapist more than just to his mum; that may have been just because he's had more contact with mum than anyone else. If expressive language had been much more developed

**What is it about him being more interactive with his mum than with the therapist that makes you concerned?**

It could be isolation. he's got another sibling. I know what I would do at that point - I'd go and see that child at home with sibling and father, if there's a father and see if the child is interacting with other people than the mother; it does concern me if the child only interacts with the mother and can't relate to other people - it's almost as if the bond is too much and they haven't been able to move that step further and bring in outside influences into their lives. Presumably through questioning you find out whether the mother takes her son to see friends and interacts with other adults, whether she even leaves him with others; it might be that they've just got such a close relationship

The isolation comes up a lot with families round here, partly because of lack of facilities, toddler groups etc.

**Networks**

**Priority child: context:**

It's very difficult when you have not concerned and very concerned - I almost wanted a medium bit : she said she's not concerned, and it's probably appropriate that she's not concerned because it's not a completely dire case, but for her to respond to training, she needs to know that there is a problem. You don't want anxiety but you need her to understand that he is in fact delayed.

**Priority:communication**

comprehension needed further assessment - from what you said I thought that it was probably OK but I did think that we needed further assessment, but I like to back that up

What he's actually saying is delayed, moderately; the quality would be that there was quite a lot of jargon, so it's just the language bit that was a problem

**Priority: associated**

re perception - there was a problem but not qualified; As I was reading through them again and again, I suddenly realised that you didn't have to alert to lots of things, that wouldn't have made me make a decision (hearing) - this was the first one I did and I think I was alerting everything, but then I began to see, that this wasn't the most important thing etc.

**Others found it difficult to distinguish between what is actually there and what is significant**

That's exactly right

**Signs of change**

expression is all the same as intelligibility as far as change is concerned - same coding

**Effectiveness**

trainable - I questioned it because you'd obviously asked them to do something and then the mother then makes a request to the child so it could be that she was copying what you were doing, so she could've been following the therapist's lead or was it just that she was responding to your suggestions - those two are quite similar - need further differentiation?

**Case 2**

**Priority rating: 4.5**

**Time taken to code:**

**Outcome:** You would refer to a phonology group for twice a week which sounds quite high priority but waiting 3 months for a suitable group and I thought aah - I would've therefore said, no you can't wait, you have to be seen individually, group or no group. I was surprised you didn't say, individual until the group starts.

**If you were handing him on to someone else what would be your advice?**

see him as a priority; this is a severe phonological delay. I couldn't offer as much as you but I'd say try and see weekly or fortnightly, obviously including the parent - that's just a matter of course for me that the parent is included whatever. It sounded like the child was quite a chatty child and interacted well.

**What would happen if you didn't make them a priority?**

I would say that he would have continued problems for quite a long time, which will obviously affect him at school; if he's not going to be understood, that will affect his relationships possibly; it is quite amazing how peers do learn to understand children with the most severe difficulties, but I would say it would impair him and certainly impair his relationship with his teachers - he hasn't got long to go till school, when's his birthday - even affecting his relationships with nursery children. It's obvious that he's getting upset about it, that the behaviour difficulty could get much worse. There are already things that alerted me: child's got a problem, it needs to be dealt with and if it wasn't dealt with you'd have a behaviour difficulty on your hands which could cause anxiety to everyone around him and socially affect him.

**What sort of things might have made him less of a priority?**

if the behaviour aspects hadn't taken precedence - they'd started happening recently. Maybe if he was quite an easy going child whose phonological delay didn't affect him too much - I'd still see him; If his phonology wasn't so bad.

**What in particular about his phonology made you concerned?**

the feeding from birth, the sucking - in my mind I questioned dyspraxia - couldn't copy farmyard sounds. I wanted to see him.

his phonology was so restricted, such a restricted system

**Networks:**

**Priority:context**

I think the nursery were probably more concerned about the behaviour as a result of the problem

**Priority:secondary**

needed a moderate-severe category need to able to say the inbetween state

**Change**

there'd been some small change in that he could now suck, this was positive, it had happened in the last 3 months and probably the parents had tried to encourage that

**Case 3**

**Priority rating: 1**

**Time needed to code:**

**Outcome: Agreed**

**How sure are you that she's not a priority?**

Because of the nature of change that had occurred in the last few months. How old is she, 2year 1month. She's certainly got very good play skills,developing well, she was understanding well, she was interacting quite well and certainly the mother had a good relationship with the child and the mum seemed to be one who gave her good stimulation. You've stated that her comprehension and play skills are age appropriate at this time. The words are coming now. OK she 2year 1month so she's still delayed but in view of the changes I feel sure that she was going to be fine.

**What would have made you see her again?**

if the mother was really anxious ; if I hadn't seen quite a lot of what you'd seen in that session; you seemed to see quite a lot, a lot of play, a lot of interaction - if I hadn't seen that I would have done a home visit -I'm often doing home visits on two year olds 'cos I can't get that certainly not in here (particular clinic room) - they're too clingy. So although I probably wouldn't have made her high priority I might have thought hang on I need to be sure. Obviously if you saw that they weren't understanding - there's lots of things that could tip you.

**Networks:**

**Nonpriority: communication**



she is only using single words so that is delay

**Case 4**

**Priority rating: 4**

**Time taken to code:**

**Outcome:**

**What would have happened if you hadn't seen him again?**

I feel that possibly, behavioural aspects might have got quite a lot worse. He's quite an isolated, into himself child and I do wonder if whether that might've worsened without intervention. The parents, although they're not worried now, if the behaviour aspects take control, I think they're going to be very worried and if you didn't act upon it and give them guidance, their attitudes, his play, behaviour could probably worsen. It's a very difficult question to answer - you need a control group - what happens if? The bit that alerts me is 'appears to be in own little world' -I've got another one like this at the moment and my immediate concern is that this is going to be a long term problem. If you didn't intervene, someone is going to intervene later, because there's a possibility he will end up in a unit. Sometimes you don't pick up children at 2 with this problem, because they slip. So what would happen, well the child would still have these problems; if they hadn't worsened they'd have plateaued and wouldn't have improved and the parents would have become anxious or the parent would shut off to it - don't want to know that my child's got problems. Just because we don't intervene, doesn't mean that the worse thing in the world, but we could certainly get the family on the way to coping with the fact that there's a problem - we're often the first one to say that actually I'm worried, I'm very concerned. So from the family's point of view, intervene now, as early as possible- you're not going to prevent it but you can get them on the road to dealing with the fact that they've got a problem.

**What sort of things would have made him less of a priority?**

not a lot really - if he hadn't shown all these things

**Networks**

**Priority: concern**

If you have them very concerned, is it appropriate to be very concerned - I think that can really affect how the family interact with that child. The family are not so worried now - they've obviously been through masses of problems because of all the medical problems and that has alleviated. They've now got this problem which is obviously quite a big one, so they're not so concerned, and I think it's appropriate that they're not absolutely concerned - with a long term problem as long as someone is talking and advising them all the way through.

**Is it then still a factor for you prioritising them**

actually probably not.

when you say parents are not so worried now, did that have an affect on my prioritisation, no not really because I was going to do something whether they were concerned or not so you could almost forget that couldn't you

**And yet you have registered and taken account of it somehow**

I needed to say it all

**Priority: communication**

**If it didn't have the age bandings there would you have put severe?**

Yes it's a bit difficult when you say up to 18 months - 'cos he's not actually at a 6month level so it's a problem with a 2year old

It's not a priority but I was doing everything - the quality of his language - he's intelligible with his single words, but he's also doing quite a lot of noise so the quality is delayed too. So the words he's got are OK but he's got lots of babble

The interaction would be a severe delay as well, and the fact that he's made no changes and that he's in his own little world.

With this child I felt I needed more - you'd got quite a lot but I needed to see him again - it's quite difficult to judge - yes there's a problem. I'd got enough to say see him again but not enough to make a clearer decision.

**Priority:discrepancies**

I haven't got enough to go on to say that its severe. In my heart of hearts I'm thinking its severe but I'd like something more to go on, more assessment

**Because you cant say the degree of discrepancy - is it more in terms of how worried you are**

You could look at it like that

**So you could say 'I don't really know about this bit but I'm very worried or I'm very suspicious'**

Yes, that's an interesting point. I just felt I couldn't make those decisions

#### **Change: communication**

WCF - because he's become more sociable, I thought it might be because of that - he wanted to communicate

#### **Effectiveness**

stimulable - because he'd become more sociable; he did allow some interaction - not much, but some

#### **Case 5**

**Priority rating: 4**

**Time taken to code: 35 mins**

#### **Summary:**

Going to school this year, unfortunately. I've seen his brother who had a mild phonological problem which was sorting itself out by the time they got to see me and I discharged him and mum at that point didn't mention that her other child had problems and then he got referred by the HV. Comprehension seemed fine, carried out simple instructions. Responded to mum, bit clingy with mum, wasn't so happy to come to a table even though mum sat with us. Didn't interact very much with me but with mum was talking in little sentences quite well although I didn't understand a word he was saying mum obviously understood everything. I felt that she kept him as a younger child; he's the last one, he's one of four and the older ones are much older, she hasn't actually said whether they're her children and because I'm going to see them I'll gradually find out. Certainly got much older children, one's at university. And basically unintelligible, No initial sounds; vowel sounds are appropriate, some finals but not many, I just knew 'phonological problem, needs to be dealt with' - pretty quickly. Mum worried now. I think it's that school is looming and we haven't got long. I said I can't press any buttons and make him perfect for school. I think he's playgroup but not at a nursery. If he was at a nursery I could give some ideas - I could go to playgroup but its not the same and I needed to see him quite quickly.

#### **What would you say if you were handing him on?**

he might fit into a phonology group because I felt he was quite self-conscious and I felt that to isolate him on his own and work with mum would be the wrong thing so I thought to put him in a group with other children and be in a group with different mums coming in and out 'cos I felt he needed to be gently disassociated a little while from his mum, certainly 'cos mum understood everything he said. See him quickly.

I wouldn't wait for a group - I'd see him quickly

#### **What would happen if he didn't get seen?**

I don't think he'd change much because the people around him are understanding him and I wonder whether when he goes into school he'll turn into a bit of a behaviour difficulty. I've since seen that he's got the most incredible temper and he can cry for 3 hours nonstop and you can't console him at all. You can't talk to him

#### **Is there anything that would have made him less of a priority?**

If he was stimulable and had more speech sounds; being less dependent on his mother - he's only got 4 months before he'll be expected to break away from her completely - if that wasn't there maybe I could make him less of a priority and give mum all the ideas and see if she could go away

#### **Networks**

##### **Priority:communication**

I have heard 3-4 word sentences but it's not as good as it should be, so I do question the quantity but its not high priority I just want to keep abreast of it.

delay/deviant: I've seen this before and I've not thought of it as a real deviant but I would say he's got delayed aspects and the fact that hes got no initial sounds is deviance. (It depends on who you talk to and what you read at the time)

**Change: communication**

he'd suddenly started to talk quite a bit

At that point I didn't know about any change in intelligibility

**Effectiveness:**

she tries very hard to use appropriate strategies but it's not having any effect at all; she also expresses her views clearly. She's also quite angry with him at the moment

Stimulable - in the session we managed to get him to repeat lots of sounds

Sibling history wasn't significant not like this problem it helped me know what the family were like - that they would come and work.

**Case 6**

**Priority rating: 4.5 - 5**

**Time taken to code: 60 mins**

**Summary:**

he's one of triplets, he's 2 and a half; he could be going to nursery quite soon. his two little sisters were a little delayed in starting to speak but their language is coming on. Mum is saying 'the other little girls are so different, they've always played well, quite passive girls, interact well with each other, they try and interact with this little boy but haven't got anywhere'. Mum was very worried. This little boy suffers from epilepsy. he had problems at birth, he was hospitalised for breathing difficulties so had a bad start and she said he spent a bit of time in hospital; he was the last triplet out. She's been worried for a while; she seemed very switched on, very caring. Both parents came to the initial interview and I haven't had that for ages and it was interesting that they had different ways of dealing with the children, even if I wasn't worried I wanted to sort that out. dad lets little boy do whatever because he's the little boy and the only boy and mum is quite strict even to the point of child goes uh and raises arms or doesn't even go uh just raises arms and dad picks up and takes him anywhere, walks all round the shops with him in his arms, whereas mum wouldn't let that happen, nor would maternal grandparents - they get him to walk - we spent quite a lot of time talking about those sort of aspects. Throughout the whole initial assessment he climbed on every piece of furniture in the room, screamed and then when he was bored with throwing things around the room, he tried to escape. I was worried. No play skills whatsoever, apart from throwing. and at home she says he does look at some books, hes got one book he loves and he'll sit on mums knee - that was a positive.

I didn't think he would ever do body parts so Mum said suddenly 'Robert' and he stopped and responded to her and she got him to do 4 body parts and I was flabbergasted, still am; he would just do it and then he continued to run. So there's something positive there - there's potential, but what he does like to do is lie on the table and spin continuously. He'd only waited a month to be seen - he was high priority already. The only language was babababa and screaming, there's other people involved already - paediatrician.

**What will happen to him if he doesn't get seen?**

It's more what will happen to the rest of the family - it's a real family problem this one. He's already begun to self-mutilate. At least now the mum has got someone to come running to talk to. Whether we can do very much I don't know. If he doesn't have help the family will really go to pieces and I know that - the mum said to me (seen in town) 'I've escaped, my husband has just got home from work and I'm out - I'm going to kill him' - she knows she won't - she has an amazing attitude, she's a lovely lady. On my first visit, although she'd done these body parts, I just wondered what she did at home. I believed what she said but I needed to see what happened.

**Why were you suspicious?**

I just wondered whether it was all rather regimented at home for a child like this and whether he couldn't handle it, but I was completely wrong it was like a playgroup - an attempt at a happy family. It was having stress on the family

**What would have made him less of a priority?**

The bizarreness, the spinning, the throwing - all the things that make him a priority, if some of those weren't there

#### **Networks**

##### **Priority:context**

family don't so much need training as support

##### **Priority communication**

I can't assess his comprehension - the fact that he understood his body parts was a start; he'll apparently go and get things at home, when he's in the mood

##### **Change: cognitive**

##### **How did this affect your decision?**

I do think he's got severe problems but I think there's a glimmer of hope that he can interact with his mum - I think we're going to have to do everything through mum. Mum can obviously change/move him. Why he's at this screaming stage I just don't know

I quite like these sorts of families - a challenge - I quite like them. I wouldn't say I've got masses of expertise.. I've certainly had families like them before but I like dealing with them - they're interesting because I'm interested in a holistic approach and this is a classic; but I know other people will be involved.

I don't think he's severe learning difficulties - I think there's something there - I'm worried about the behaviour. I'm very worried about the spinning. I wonder if the spinning is something to do with the hearing -if he's got fluid in his ears, there may be a balance problem - I want to see what happens when that's alleviated \_ I don't think that's the answer to the problems and then if the clinical psychologist can be involved I just feel there's some positives. Mum needs some time out from him, he needs nursery to see at different set of rules.

**APPENDIX J**  
**TABLE OF RATINGS GIVEN BY SITS ON THE FOUR CASE HISTORIES**

| Therapist | Child | 1   | 2     | 3   | 4   |
|-----------|-------|-----|-------|-----|-----|
| 1         |       | 3   | 4     | 0   | 5   |
| 2         |       | 3.5 | 4.5   | 1   | 4   |
| 3         |       | 2-3 | 3     | 2   | 4   |
| 4         |       | 3   | 3     | 1   | 4   |
| 5         |       | 3   | 3-4   | 0   | 3-4 |
| 6         |       | 2   | 3.5-4 | 0   | 5   |
| 7         |       | 2-3 | 4     | 1   | 5   |
| 8         |       | 2   | 3-4   | 1   | 3.5 |
| 9         |       | 2-3 | 3-4   | 0-1 | 4-5 |
| 10        |       | 2   | 3     | 0   | 2   |

**APPENDIX K  
DETAILED ANALYSIS OF CHANGES MADE  
TO THE  
CONTENT & STRUCTURE OF INDIVIDUAL SGNs**

**K. INTRODUCTION**

For each network, the percentage of slts coding each node who subsequently followed the notational rule is shown in the figures. For recursive nodes, since it has been established that these were all supported, the percentage of codings where only one alternative was selected is given in order to check whether or not these nodes could bear either exclusive or co-occurring selections. That is, if at a recursive node, a high percentage of slts select only one, then it may be that a fuller examination of the data might yield an exclusive alternative. Comments and explanation made by slts during the debriefings have been used to illuminate the results.

**K.1. CHARACTERISTICS OF THE PRIORITY CHILD (figure K1.1)**

Elements of this network were used by all therapists at some time.

Figure K1.1 shows that, of the slts using elements from this SGN, 80% selected both child and context characteristics.

**Context**

Of those selecting context, 86% identified significant features in both elements, level of concern and environment. Within the category of concern, another feature was identified as significant - the focus of a parents' concern. So, parents might be concerned about an aspect of the child's development which is, in the slt's view irrelevant or unimportant or, on the other hand, not be concerned about an area of major concern to the slt. Figure K1.2 shows a reworking of this section to take account of this where the level of concern is defined in terms of who is concerned and what there is to be concerned about, how much and whether or not concern is appropriate in the slt's view.

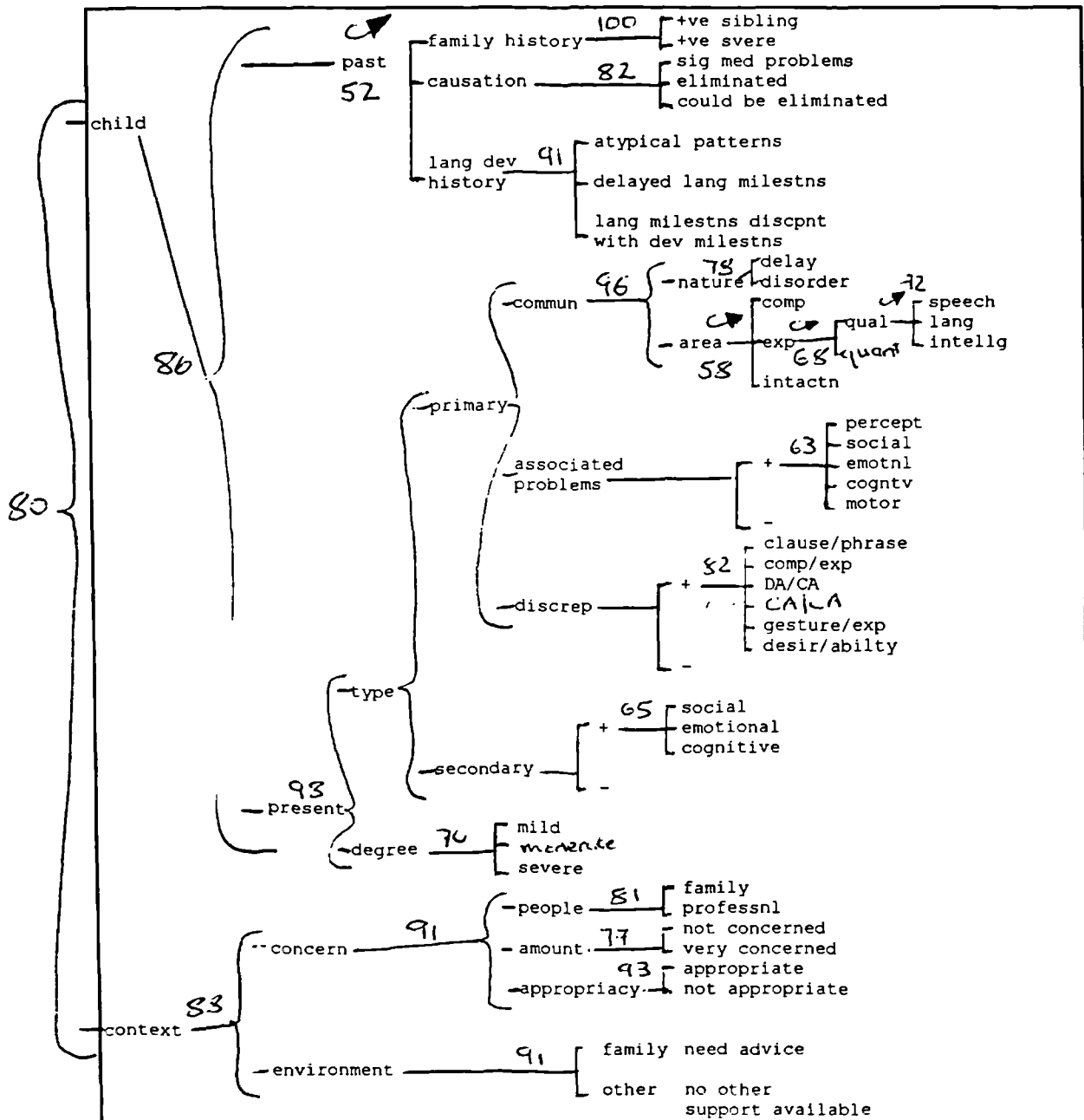


Figure K1.1 Characteristics of a priority child

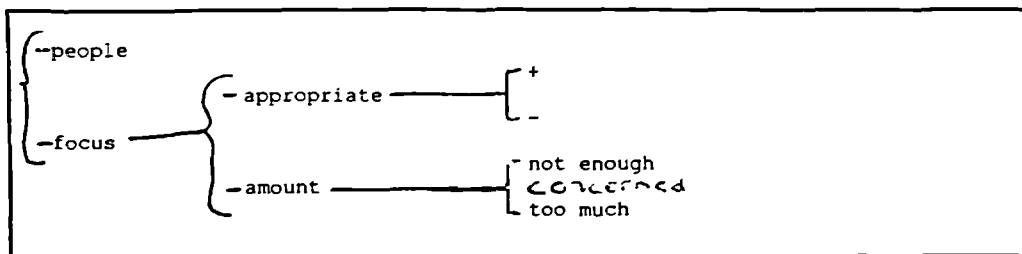


Figure K1.2 Level of concern re-expressed

Several slts deleted 'very' from the amount of concern, indicating that any amount of concern, particularly from a parent, is of significance and would make them more likely to see a child again.

With respect to the child's environment, it was pointed out that training and advice might be needed outside the family, for example, by a child's nursery; also it was considered that a broader level of 'support' was often required rather than specific training or advice.

## Past

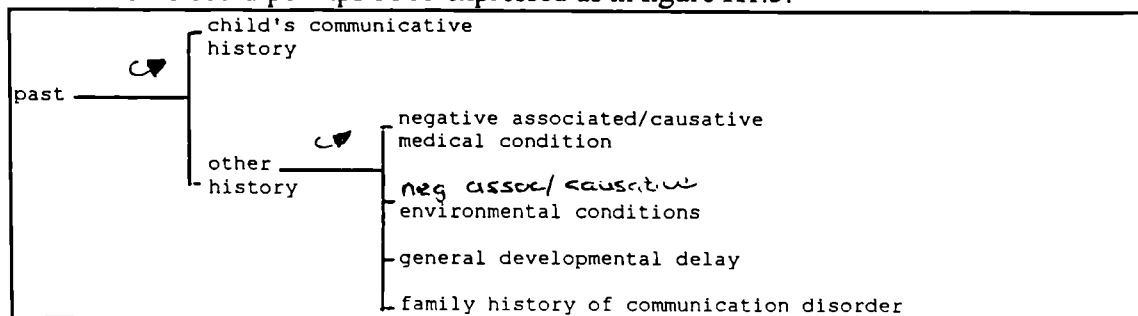
Of those slts selecting elements from the priority child's characteristics, 80% selected both past and present aspects. At each node, the numbers of slts still selecting drops with each level of delicacy. For example, at the first family history node, only six slts selected this node in child one and only one slts selected it in child four. The percentages must therefore be interpreted with increasing caution the further to the right of the networks, since the numbers involved are progressively smaller, so that although 100% of slts selecting priority family history followed the notational rule, the numbers have dropped from the 52 original examples to only 15.

It was often aspects of the child's past history, which focuses on case history information that prompted therapists to remark on the difficulties of distinguishing between information that was present versus information that was significant. That is, they were aware of certain information in a child's history but were not sure of its significance with respect to the case in question. So for example, any family history of communication disorders, except where that difficulty has resolved spontaneously, would be regarded as significant and adding to the view of a child as a potential priority; however, slts cannot make explicit the exact weighting that they would assign to that finding; it seems to act on a sliding scale, where the more severe the family history, the more significant an indicator of potential problems the finding becomes.

Slts identified other historical features that either were not represented in the network or were not given sufficient salience in their view. These included:

- findings associated with communication difficulties but not necessarily causative, such as a history of feeding and swallowing problems;
- aspects such as hearing loss or specific diagnoses such as autism;
- the child's general developmental history.

Bearing in mind that communication history was more frequently recorded as influential, the networks could perhaps be re-expressed as in figure K1.3.



**Figure K1.3 Reworked network for child's past**

Expressing it in this way broadens the language development category to communication (further levels of delicacy could then be added). It also reflects the increased salience of the child's communication history relative to other case history features.

## Present

### Degree

Of those slts who selected a present priority feature, 98% highlighted the degree of problem, although slts often used a combination such as mild-moderate, moderate-severe, rather than a single alternative. The ages associated with these severity bands caused some difficulties, particularly with a younger child: a smaller delay in terms of months would be regarded as a more severe problem. So for example one slt suggested that whilst a nine month delay might be relatively mild in a four year old, this might seem more significant in a two year old child.

Slts reported that some problems were more difficult to qualify by degree (see below, secondary problems, interaction).



### **Secondary Problems**

Slts reported that they had found it difficult to distinguish between associated and secondary networks; this sometimes led to conflicting results, for example, selecting severe social problems in the secondary network and mild social problems in the associated network. Slts felt that the terminals were not sufficiently differentiated, for example, difficult behaviour and temper tantrums were felt to be overlapping categories. Although slts did mostly qualify the secondary behaviour with a degree marker, (ie, mild moderate or severe), they reported that this was difficult and not necessarily how they would usually categorise such behaviour. For example, lack of confidence would not necessarily be qualified as severe or moderate but be noted merely as 'lack of confidence'. There was still no clue from the data as to the combinations which constitute a priority. For example, a mild communication problem on its own is not regarded as a priority (see below), but might be so in the context of a severe secondary problem.

### **Communication**

Of those selecting priority communication, 96% described both the area of difficulty and whether or not it was delayed or disordered. The area of difficulty was always specified. Slts' main comment about this category was the lack of detail; they would usually attend to and record more delicate features of a child's current communication and as indicated above, they frequently jumped from quantity to quality categories to attempt to represent more detailed findings. They also added that any difficulties they had in collecting data about a particular category would indicate a problem, for example, if they had been unable to assess a child's comprehension skills reliably due to lack of attention or co-operation.

Some slts expressed difficulties in the interpretation of the delay/deviance alternative. One slt remarked that delay/deviance would not be a category that she considered with respect to a child's interaction:

"I wouldn't say whether it was deviant or delayed - I don't think about it in those terms. I think about it as problem/not a problem rather than deviant or delayed because I think very often with interaction its mostly always deviant - different "

Another reflected wryly on the state of the literature in this debate:

" It depends on who you talk to and what you read .."

### **Associated problem**

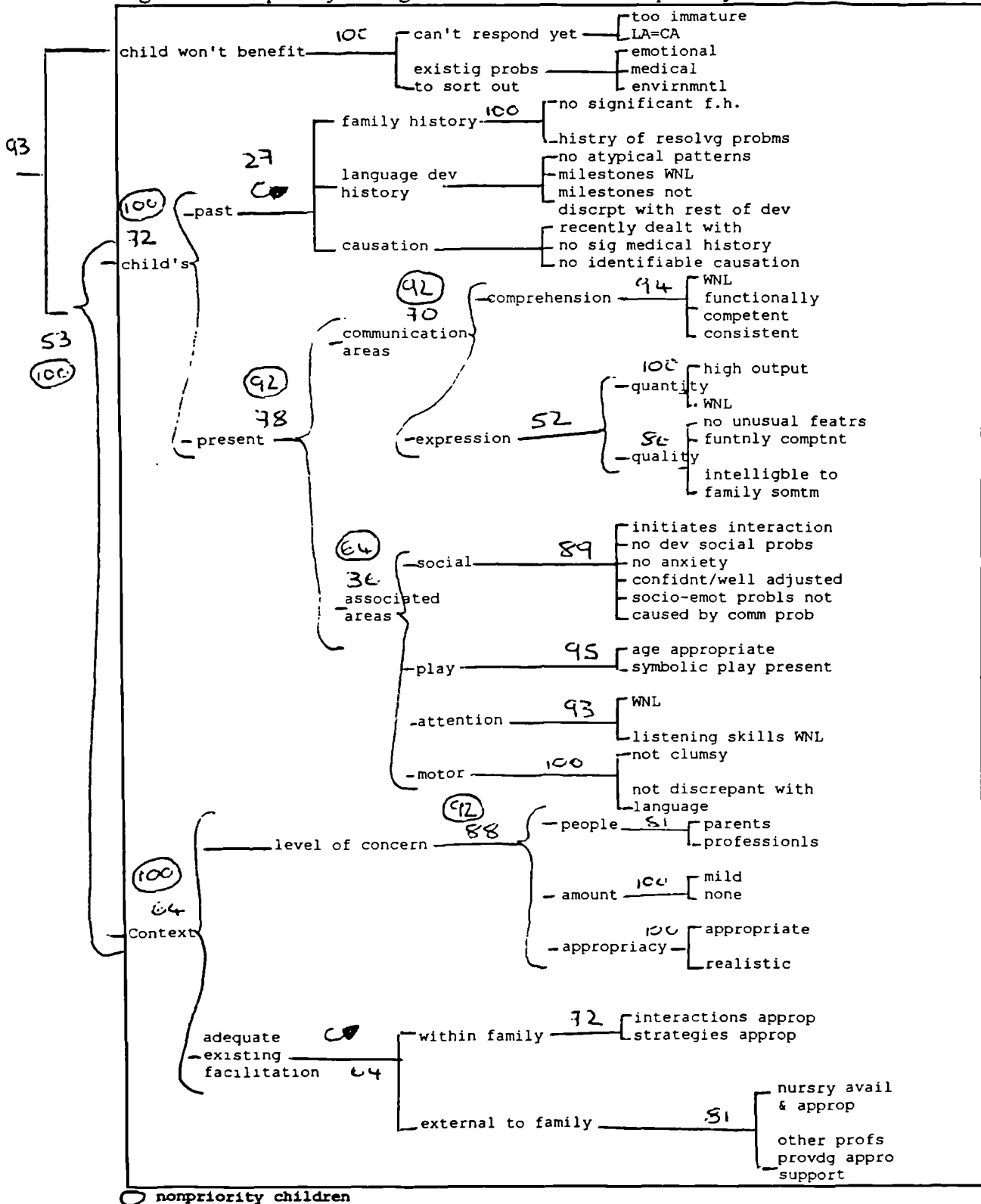
As indicated above, slts expressed difficulty distinguishing between this network and the secondary problems network and also in distinguishing between terminals such as social and emotional. Only 63% of those highlighting priority associated problems selected only one terminal with a further 29% selecting two terminals; no slt selected all terminals

### **Discrepancies**

Of those selecting this category, 82% selected only one. Additional categories were added by two therapists, these covered similar categories "language and intelligibility" and "language and phonology"

## K.2. CHARACTERISTICS OF THE NONPRIORITY CHILD (figure K2.1)

Significant nonpriority findings were identified at some point by all slts.



**Figure K2.1 Characteristics of a nonpriority child**

There is a correspondence between the balance of priority and nonpriority networks used and the overall priority ranking assigned to the four children by the slts. That is, children receiving the highest priority rankings had features identified on a higher proportion of the priority networks and a lower number on the nonpriority networks. Similarly, fewer

priority and more nonpriority networks were used for children who were discharged or who had lower ratings. Furthermore, the structures of this network are upheld more often if only nonpriority cases are considered. Figure 17 shows the differences. For example, if only nonpriority cases were considered, the percentage of times that both past and present were co-considered increased from 72% to 100%. Generally there were fewer content changes to the nonpriority network than to the priority equivalent.

### **Child won't benefit**

This category was used only six times, mostly with respect to children who were deemed 'too immature' for intervention. No comments were made about this aspect of the network per se, but as slts attempted to evaluate the effectiveness of intervention network, various additional features emerged which might have been coded here. They will be discussed below.

### **Context**

The alternatives within appropriacy of concern were felt to be synonyms rather than alternatives. This became particularly evident with child three: all slts agreed that mild concern was present, but further coding was split fairly evenly so that five slts thought the mild concern was appropriate and four thought it realistic; one slt did not code and commented on the lack of difference between the two categories.

Additional facilitating features of a child's family situation were identified, for example, 'parent showed insight', 'home provides suitable material for language stimulation', 'parents know what to do but can't afford the toys'. It was reported that some parents interactions are not strictly appropriate but they are positive and make therapists feel there is less cause for concern.

### **Past**

The structures of this category were upheld a high proportion of the time and very few content changes were made. These were concerned with the terminals in the language development history which slts felt to <sup>be</sup> overlapping.

### **Communication**

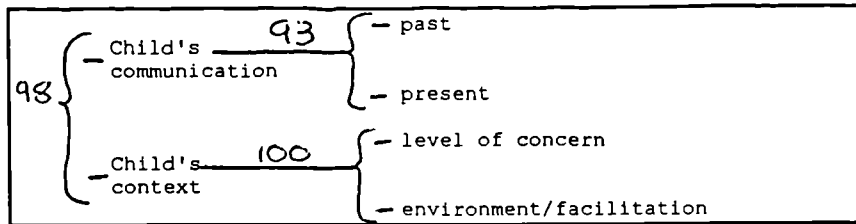
Of slts selecting nonpriority communication, 92% selected both comprehension and expression for nonpriority children. Only about 50% of slts selecting expression subsequently selected both quality and quantity. The terminal 'consistent comprehension' was never selected and an extra terminal was added to the expression category by slts who wished to indicate that a mild expressive problem would be regarded as nonpriority.

### **Associated areas**

Only 36% of slts selecting significant nonpriority associated areas subsequently selected all four categories and although the percentage did increase with nonpriority children, the figure is still not particularly high, although no comments were made about this category.

### **Priority and nonpriority (figure K2.2)**

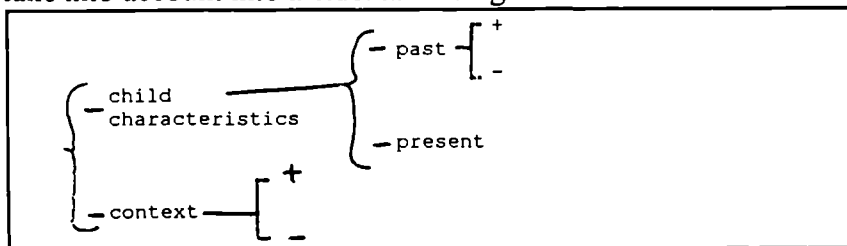
It was noted in section 3.5.4 that the least delicate nodes of the priority and nonpriority networks were similar. They could therefore be used together to examine the way slts used terms across the two networks. As can be seen from figure K2.2, if the two networks were combined in this way, the percentage of slts selecting both categories at the BRA brackets for these early nodes increased.



**Figure K2.2 Percentage of codings following notation on combined priority and nonpriority categories**

However, there were still a number of children where context and/or past was not selected. Figure K2.3 shows a reworked version of the network to reflect this. It expresses the view that, if past features become apparent, they will always be considered alongside present aspects. So whilst the child's current characteristics might be considered in isolation, past features would not.

The preceding summary of the network has been phrased carefully to allow for two interpretations: firstly for those slts who always look at the child's context and past but who might not find anything significant and secondly for those slts who do not necessarily look for past features unless and until communication is problematic, but who would take into account into incidental findings.



**Figure K2.3 A new emphasis for 'context' and 'past'**

### K.3. SIGNS OF CHANGE

In the full network, signs of change were described in terms of four co-occurring variables: the developmental aspect, the nature of the change occurring, the time element involved and the considered cause of the change (or lack of it). All four were selected 78% of the time (figure K3.1) with the cause of the change being selected least frequently (table K3.1).

|                      |     |
|----------------------|-----|
| Developmental aspect | 100 |
| Nature               | 99  |
| Time                 | 91  |
| Cause                | 82  |

**Table K3.1 Percentage selections for signs of change variables**

For ease of coding, in the assessment booklet, the three developmental aspects (communication, behaviour and cognition) were presented as separate networks. In this evaluation, the three developmental aspects are considered together, but the paradigms for the three are shown separately in the figures so that the percentage use of the notation can be seen for each one (figures 21-23).

Differences between slts were apparent in how overtly they investigated signs of change in a child at the initial assessment, with some slts giving this category little consideration until a second session.

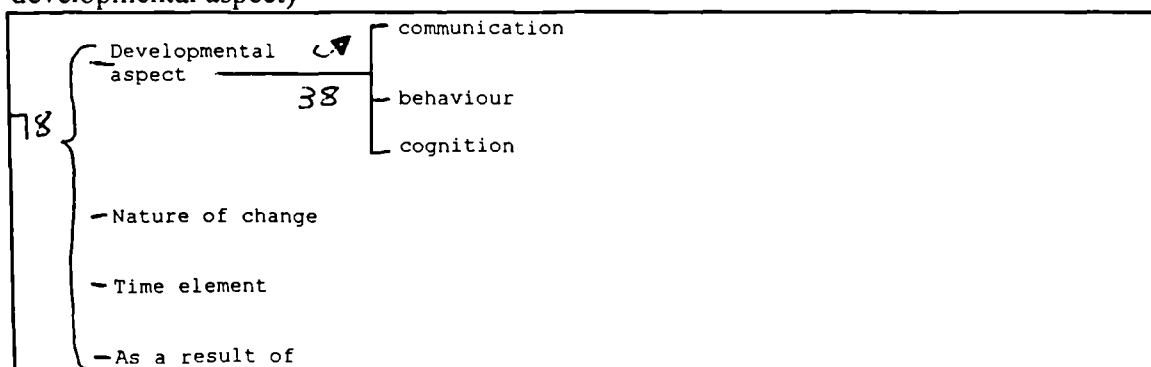
"I felt I probably didn't gather enough information on recent change. Normally I would monitor for the first two months myself."

This slt preferred to monitor the child herself rather than relying on parental reporting of change, or taking into account, for example, the discrepancies between referral information and presentation at assessment.

As with other areas previously discussed, slts reported difficulty in distinguishing between information about change that is significant and information that is just available; they also reported difficulty in deciding the significance of small amounts of improvement. So for example, very small improvements over relatively long time scale will act as a negative influence rather than a positive one even though the direction of the change is actually positive (ie, improvement rather than no change or deterioration).

### Developmental aspects

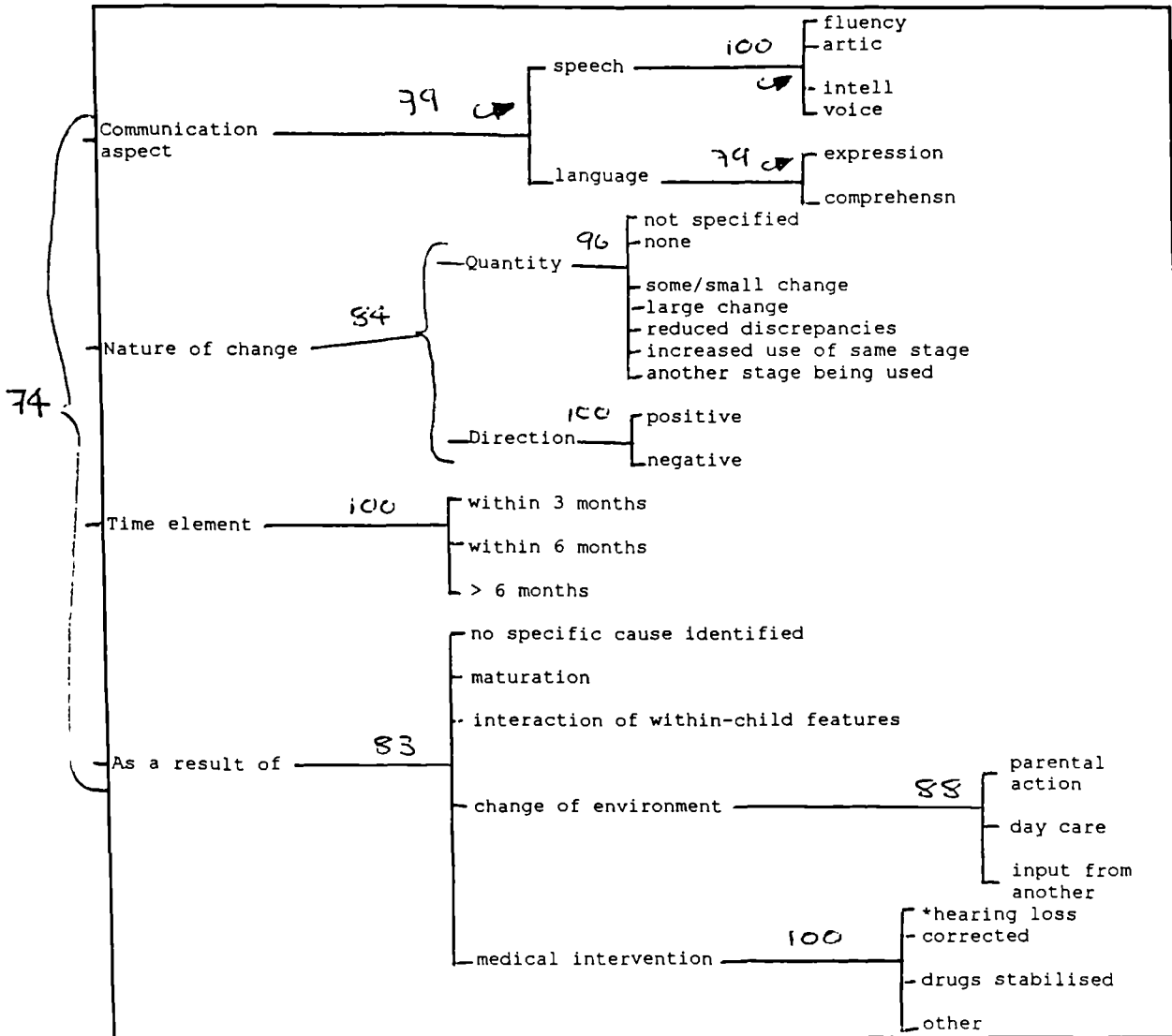
Figure K3.1 shows that in many examples, significant change was identified in more than one developmental aspect. (ie, only 38% of examples had highlighted only one developmental aspect)



**Figure K3.1 Percentage selections for signs of change**

**Communication:**

The main comments indicated the need for more detail in terms of the communication skills being considered and also the addition of preverbal skills such as vocalisation or those skills considered prerequisite for speech such as sucking. Percentage codings for this paradigm are shown in figure K3.2.



\*only 1 case coded

**Figure K3.2 Codings for the communication paradigm**

**Behaviour:**

It was noted that the terminals for emotional and social behaviour were arranged differently to the arrangement in the networks for secondary and associated problems. Aggression and frustration were regarded as overlapping rather than as alternatives.

Figure K3.3 shows the paradigm for behavioural change.

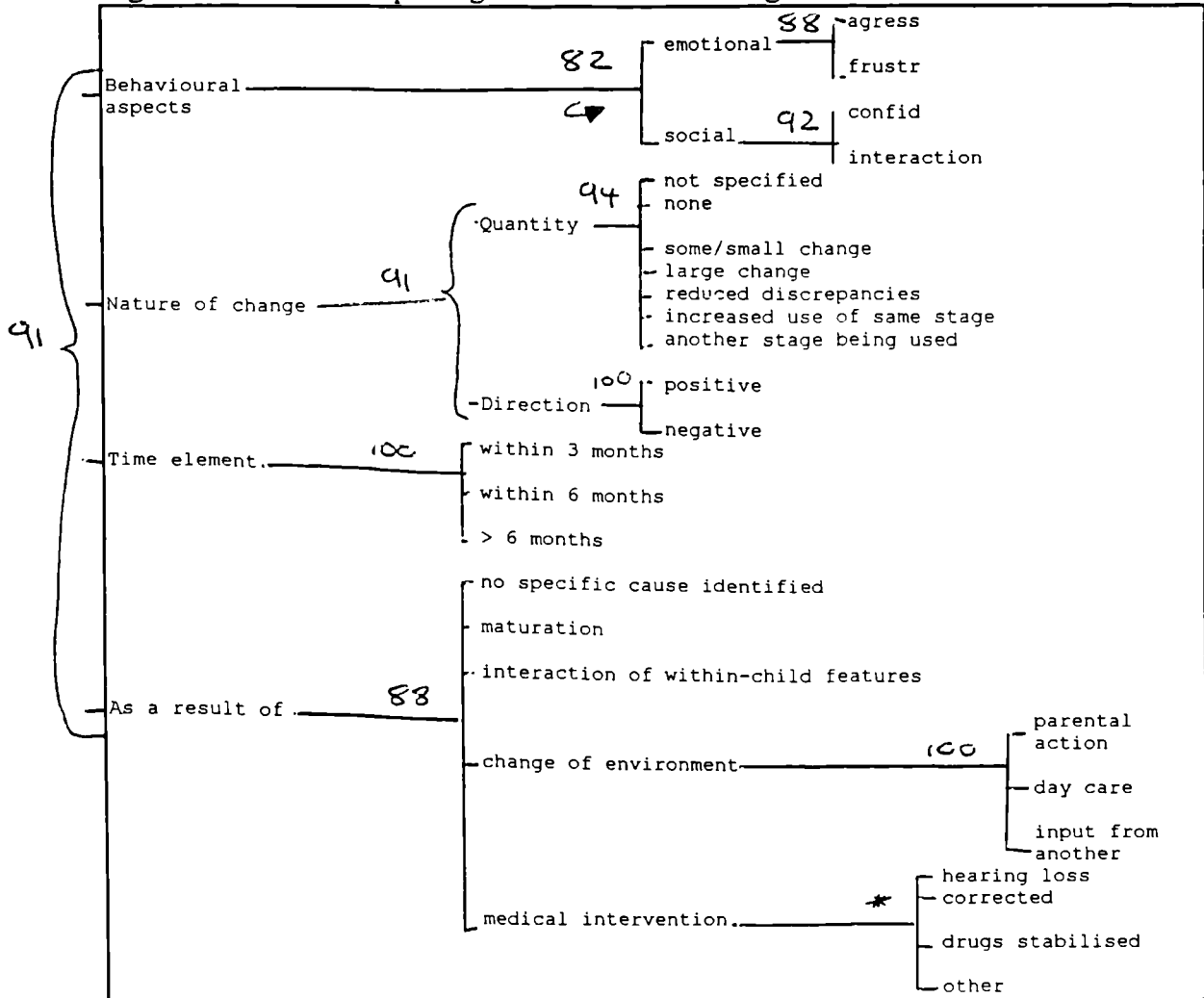


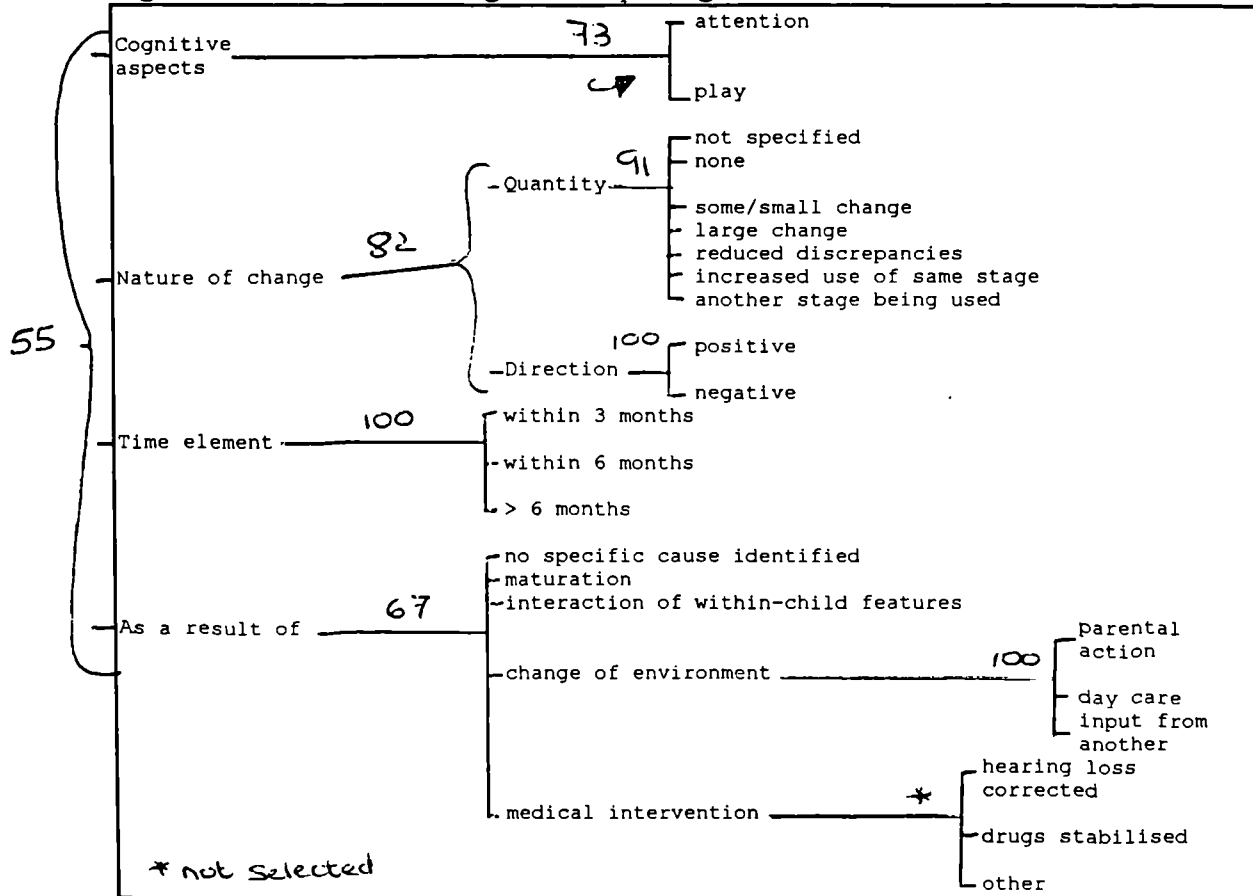
Figure K3.3 Codings for the behaviour paradigm

\* not selected.

**Cognition:**

One therapist commented that she felt that these areas would be more appropriately labelled as prelinguistic skills, since their significance was in terms of their prognostic value regarding the acquisition of language.

Figure K3.4 shows the codings for this paradigm



**Figure K3.4 Coding for the cognitive paradigm**

**Nature of change:**

Generally the quantification of change caused little comment except for one slt who reported difficulty in quantifying behavioural change. However, the direction of change caused confusion: some slts used it to show the influence on their decision, - did the change make them feel positive or negative about the child's prognosis; others used it to signal improvement or regression. Since slts were unable to show whether or not the change was a positive or negative indicator, this was an obvious gap in the network. Where there had been no change, slts often wrote in a neutral position. However, this then led to duplication of meaning in terms of the amount of change, since 'no change' is represented under quantity. This section along with the causation category has been reworked and is presented in figure K3.5.

**Time**

This category was apparently uncontroversial and the structure was supported 100%.

**Causation**

Slts found it difficult to differentiate between some of the reasons for change, particularly between 'no specific cause', 'maturation' and 'within child features'. They commented that they often had no data on which to make this judgement and they seemed to indicate that such a distinction would be of little significance.



Slts also felt that, where there had been no change, this category did not give them relevant alternatives. Extra categories which represent the *context* of the change, rather than necessarily the cause, might be more helpful. For example, lack of change in the context of positive environmental input would be seen as a negative indicator but lack of change in the context of hospitalisation would function as an explanation and therefore as a positive indicator. Figure K3.5 presents a reworking of this aspect of the network in order to represent this.

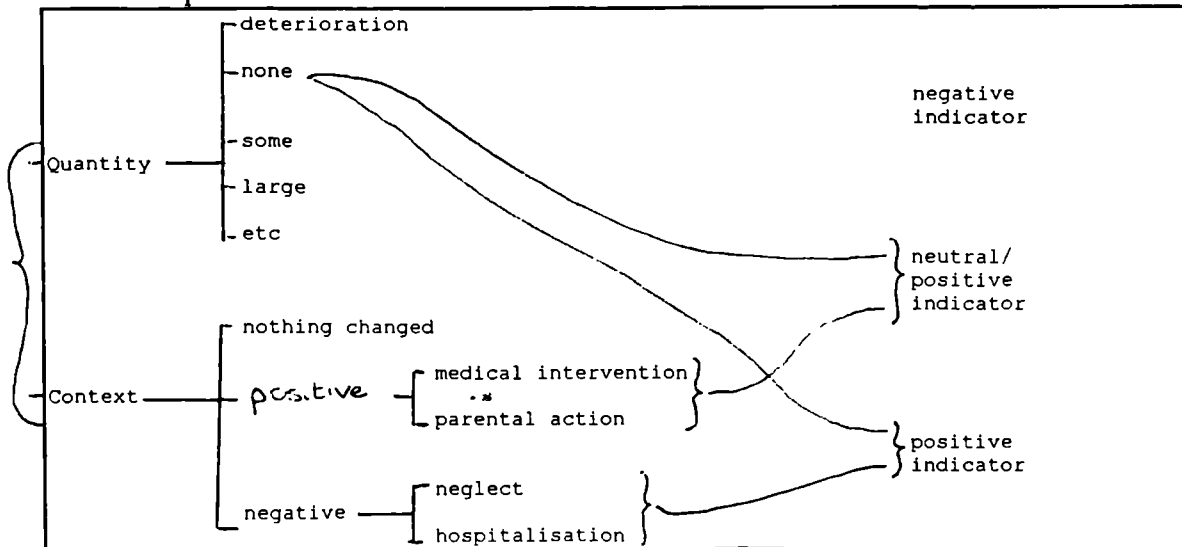


Figure K3.5 Quantity and context of change

#### K.4. EFFECTIVENESS OF INTERVENTION (figure K5.1)

Of those slts who selected this network, 61% highlighted all three options at the first BRA. Table K5.1 shows that the support available to the slt was highlighted most frequently.

|                   |     |
|-------------------|-----|
| Child factors     | 71% |
| Support available | 94% |
| Targets available | 82% |

Table K5.1 Use of co-selections

Some slts expressed difficulty in establishing evidence of this category at the first assessment, particularly from written notes and commented that their decision would not be affected in a major way at this stage by such factors. Indeed increasing effectiveness was seen as a potential goal and outcome of intervention. For example, as relationships with the child and family are established it is expected that a child's motivation or a family's commitment and interest will increase.

Various slts commented on how interesting they found this network and were surprised at how well it showed their views or highlighted the potential difficulties of intervention.

"This works well - you've got all the factors there. It would be interesting to study if the proportion highlighted correlated with therapy outcomes".

Very few specific content changes were made but, as indicated earlier, slts were looking for somewhere to code negative indicators such as antiprofessional attitudes. It was also suggested that negative factors accumulated over time might become more influential in terms of possible termination of treatment rather than being influential at the first session. Particular comments focussed on the skills category. It was suggested that 'skills there' would be better expressed in terms of appropriate interaction and insight. The alternatives at the 'skills trainable' node were felt to be synonymous.

|                   |                                 |   |
|-------------------|---------------------------------|---|
| Child factors     | motivation                      | allows interactn  |
|                   | performance                     | confident   |
|                   |                                 | sufficiently mature<br>cognitively<br>socially  |
| personnel         | family                          | parents<br>grandparents<br>other  |
|                   | other                           | nursy stf<br>day care stf<br>foster care  |
|                   | prioritising<br>child's problem | no other major probs  |
| attitude          |                                 | child's problem<br>seen as major problem  |
| Support available | commitment                      | no previous DNAs<br>adaptable for apptmts<br>prepared to attend   |
|                   | interested<br>in therapy        | appreciated teacher<br>role of parent/carer<br>positive attitude<br>towards questions   |
|                   | there                           | not over-anxious<br>about therapy<br>uses approp lang<br>uses approp strategies<br>responsive to child<br>expresses views<br>clearly  |
| skills            | trainable                       | responds approp to<br>therapist's suggstns<br>follows therapist's<br>lead approp  |
| Targets available |                                 | causative factors could be eliminated<br>communication environment could be improved<br>aspects of child's performance are stimulable |

**Figure K5.1. Paradigms for effectiveness of intervention**

## **K.5. MANAGEMENT OPTIONS**

This section focuses on the changes made by slts as they represented their decisions for their own caseload children.

Firstly slts felt that they could not adequately represent the involvement of multiple personnel.

Secondly there was some lack of clarity about when an episode of care actually began - after the assessment, or at the beginning of actual intervention sessions. Given that some children are placed on waiting lists after assessment, this time lag could be considerable and might be determined by departmental policy rather than any client focused rationale.

Slts desire to express continuing assessment as well as regular intervention has already been mentioned. This accounted for those occasions when this decision node was not supported: if more than one terminal was coded within the 'purpose' category, it was always assessment.

Finally, the mutuality of discharge decisions was noted. Slts indicated that whilst a discharge decision might be primarily that of the slt or of the parent, good practice should result in a mutually acceptable decision.

## APPENDIX L TRANSCRIPT OF FOCUS-GROUP DISCUSSION

### SER: RESEARCHER

SER: What are your immediate reactions

DJ: Clearly the mother's concerned, she's very anxious

?: she wasn't concerned until she thought he might have had a hearing loss

?: she thought he was very quiet and then when she was told that he possibly had a hearing loss, she then decided that that might be the cause of it

?: she was very aware that he was different from his friends

BG: I thought she had quite reasonable insight and appropriate level of concern.

SER: when you're saying she's very anxious, are you saying inappropriately

DJ: no, no, that was my impression of concern and I don't say it was inappropriate at all

SER: how does all that make you feel about this child

?: concerned

SER: does it make you want to do anything in particular or follow that through in any particular way

FP: more questions

?: a detailed case history

SER: anything else at this stage

DJ: well even at this stage I would say that I want to do a full assessment of his abilities

NJ: can I ask if we've actually heard him say anything

SER: no not yet

MC: about his play - just one or two impressions - his play seemed to be quite exploratory, looking at things, no evidence of any meaning

SER: so you haven't seen any symbolic play or anything like that yet

MC: no

SER: so that's an observation of something you're keeping your eye on

.....

FP: I didn't feel his play was developing from the first section, he's still throwing things about, exploring, not symbolic. He tried to vocalise with Gran and show her things which I thought was a plus point at least for him, that he did try to show her things. I felt that mum as well from her account seemed to be doing the right sorts of things - she'd obviously tried to give him choices at home, she was trying to model things for him and he was obviously still having problems. I think I'd probably want to know a bit more about the feeding just from the point of view that he'd had problems and given that dyspraxia might be as problem even though she said oh yes he's eating much better now, he obviously wasn't eating a great deal if they're worried about his weight so I think I'd want to know a bit more of that side

?: I'm questioning his comprehension at this stage - I'd want to assess that quite soon

SR: I must admit, looking at that repetitive play, taking things in and out of boxes, it's not very meaningful - what does he actually understand. She did say he understands but I'd like to see that and question that a bit more with mum perhaps as well.

SL: I think the history's a little bit worrying, high temperatures, convulsions, jaundice, there may be possibilities of hearing loss or damage, general delay

SER: can you just expand on that a little

SL: I knew you'd ask me that - back it up with evidence and I can't

SER: is it something in your experience that there's a pattern to

SL: I think a lot of the evidence says that it doesn't have any significance but we tend to think that it does, that there's a risk of the child having some damage from say having convulsions or high temperatures or hearing loss from the jaundice, but I may be wrong.

DJ: There seem to be a whole lot of factors that might be significant or have no significance at all. the convulsions, the jaundice at birth, the feeding problems in the first six weeks, then the fact that he didn't babble, he was very quiet, his poor imitating ability - there are a whole lot of things that may mean something and may mean nothing, so I think one needs to follow them through

BM: just being a poorly baby also could have made him very passive and would have held back his development even if the individual illnesses were not significant, m the whole thing together would

SER: when you say you want to follow them up, how would you do that?

DJ: I only mean in terms of observing and assessing him further to see if perhaps one can see more evidence of difficulties, perhaps nonverbal difficulties as well as verbal ones

BM: It would be nice to have something like a Ruth Griffiths assessment

SER: just to follow through a bit further D, based on that history would you be looking for anything in particular

DJ: well there could be general delay, he hasn't improved for quite a long period of time, even though it seems as though he may be getting the right kind of stimulation at home and his mother also described what might be some significant feature that she thought he was acquiring some words which he then stopped using

SER: in what way is that significant

DJ: well I think all of it may perhaps point to some kind of condition that is degenerative, though that's pretty way-out, but it does happen

NJ: How would you exclude that

DJ: well I think you would want to look at all his abilities and make sure that nothing was too far behind and then perhaps follow up with the health visitor or the CMO or somebody like that that they were satisfied with how he is - to have someone who knew his physical development better than you do

BM: you'd have to be part of a team to do that

MC: but there were things that suggested that he was progressing for instance the fact that he said 'zat' for what's that, that there was some communication intent, there was the beginnings of some representational play, he did turn the tap on and he fed himself

DJ: yes, as I said, those things may mean nothing but I would just want to keep an eye out for that

.....

CM: mother describes some representational play but its not extended into symbolisation

SER: can you expand on that for me

CM: when he talked about the spider, he could imitate something he'd seen but he can't actually symbolise. I'm also a bit worried about his voice quality.

(explanation of frog in his throat and not able to copy clearing it)

DJ: I think he seemed quite delayed for two and a half but I thought that there were some positive features as well

SER: all round are you saying or just his play

DJ: well maybe all round. He just didn't seem like a two and a half year old, the way he played the way he interacted, things that he liked.

SER: why not:

DJ: I think he seemed like a much younger child

SER: what would you be expecting to be different

DJ: it seemed to me that his interactions were at an 18 month-2 year, the sort of things he was doing with the toys, making scratchy noises over and over again. But his mother did seem to indicate that there were some positive things as well, that he was beginning, he was developing things but perhaps more slowly than he should've

SER: which things are those?

DJ: well things like beginning to have () play, interacting with people, enjoying play and perhaps taking on board events like the spider on his arm, things like that

SER: so these are all signs to you of appropriateness

DJ: positive signs in his environment

SER: how would you follow that up, what would you be looking to do to confirm that one way or the other

DJ: I think I would want to go further and I would want to observe him more with play with various tasks

SER: what sort of tasks

DJ building bricks and asking his mother his mother how he manages at home, does he understand things at home, can he switch on the television, video, things that two and a half year olds do quite easily now.

SER: what would you be expecting from him with the bricks  
 DJ: I would be expecting to see that he could stack bricks, that he could play some simple games with them, interactive games, building and knocking them down.  
 SER: any other thoughts or observations at this stage  
 BM: I'd like a physio or OT assessment or some idea of his other abilities or skills  
 SER: what's triggered that  
 BM: well I just wonder about his motor skills because at the back of my mind theres a possibility of a dyspraxia and my gut feeling about him is that he's a low average child rather than severely delayed with a possibility of a specific speech & Language problem. I'm not sure about it being specific, it could be a delay. But I need a lot more evidence from other people before I can start putting the jigsaw together. You could go on doing assessments and a lot of observation and some checklists.  
 SER: what sort of things would you be looking for, anything that hasn't been raised already  
 BM: I'd like some specific things from mum like what does he eat, what foods does he eat, how does he eat, I'd like to see him eating, see him chew an apple, see his movements  
 SER: is it something she has said or is it his movements that are making you say that  
 BM: its what one would look for, its what one would check off, you have a whole list of things in your mind, have a look at this this this and this and its a possibility  
 SER: but it didn't come up with the other one so why is it coming up with this one  
 BM: he's so much more limited isn't he, he hasn't moved that much and also his case history, there is a possibility in his history. It could be a red herring but I still want to see.  
 NJ: Does anyone see that kid in a case that they've had  
 General agreement that they have  
 NJ: do you want to describe one  
 SL: well I see lots of children like him. I don't think he's uncommon at all  
 SER: can you think of a particular one  
 NJ: that might have a surprising outcome  
 SL: oh I think it would be too difficult to do that  
 DJ: I think he rings bells for me as the sort of child who I think will actually continue to develop and probably be alright but kind of on the lower side of average but might need a bit of help to start him, to help mother, some very specific thing, to teach him things that he's not picking up for himself, that's really how I see him  
 MC: but there are a number of more serious conditions that we haven't ruled out yet  
 DJ: yes I think that's possible. Oh I think it could be any number of things. Its hard to tell with as little evidence as we have now.

.....  
 SL: I feel quite positive about the mother and child interaction so in my mind I've eliminated that whereas the other child I was concerned about that so a positive aspect.  
 SER: why  
 SL: 'cos I think she's very good with him  
 SER: in what way  
 SL: the way she interacts and tries to play with him and tries to encourage him  
 SER: I'm still not sure what's good about it, can you specify  
 SL: she responds to him when he vocalises or when he comes to show her something and she tries to extend his play a little bit. I think she's a bit shy in front of the video, but I think she's being very honest, I don't think she's tried to hide anything, she's made quite a lot of observations of her child so I think she knows her child pretty well  
 MC I wasn't quite that confident. I think that sometimes she didn't read him very well and she didn't always pick up on his communicative intent so she wasn't reinforcing  
 ?: I wonder if that's why he stopped saying words  
 DJ: I agree with you(SL). I thought she was very good. I thought she was very child-centred and she picked up your model and used that very readily, so shes obviously constantly looking for new things to try to help him  
 BM: I thought she was asking him questions rather than giving him information, but that in fact changed. I felt he interacted quite well, not necessarily verbally, he interacted - socially, he was interacting with you, with mother, with grandmother so that's fine as far as I'm concerned. I felt his play

was delayed but he was capable of learning, he made progress with you and I heard more expressive sounds towards the end but I felt that there was a big phonology delay and I wondered whether we should look at his listening and attention

SER: could you clarify what you mean about the phonology delay

BM: well I didn't hear any sounds much evidence of a range of sounds. I'm sure there's a language delay as well but I wonder whether it's a more specific phonology problem I don't know, it's causing him not to use.. I think.. on the other hand, from my experience little boys where everything else is functioning quite normally with specific phonology problems, get so angry with you at that stage, that they can't express themselves and he's not like that, so there's more of an element of language about it and he is having problems. I think it's expressive language and phonology and comprehension and the other things are progressing quite well. Looking at his language support skills

SER: were you also saying that if there had been a phonology problem you'd expect his behaviour to be poorer

BM: yes, if it was simply a phonology problem, which was frustrating his ability to express his needs and to interact, his play skills would have been spot on, if it was an isolated phonology problem and he would have been getting his ideas over more dynamically and he would have showed a much higher element of frustration which he doesn't appear to have which makes me feel that there's a knock-on all-round delay there

DJ: he wasn't very quick to learn games, he did eventually but it took him quite a long time

MC: in fact it took him quite some time to realise that there was some game going on, that there was some structure to what you were doing

SER: why is that significant

MC: well just general delay, he was not picking up on what was happening around

DJ: very focused on his own choice of activity

SL: I put there are motor problems, he's unstable, the way he sat down, I think that's immature - 18 month - 2 year level

SER: are there any other comments you want to make about him.

?: when his interest was obtained it was quite well sustained - he actually stayed with that for quite a long time, so it seems that once he's channelled in he can stay there, but it's actually getting that initial

SR: but it was very much a repetitive thing, it wasn't developing on from there, it was just doing the same thing over and over again. lining up the cars, which his mum said he does all the time

DJ: not usually a good sign when they say they line up the cars, your heart sinks

SER: why:

DJ: there's some phrases and sayings that parents use and when they say one of those you think oh dear there's trouble here. One is 'lining up the cars', one is 'watching the adverts on television'

BM: and he has his favourite video which goes on at breakfast

SL: in a world of their own

DJ: no sense of danger, no reaction to people or stimuli

BM: erratic feeding problems, behaviour problems

SER: how worried are you about this one, is he going to get better on his own

DJ: I think he's going to get better with some help. I think it's hard to say now. I think you would want to try and give some input and then look at him again in six months and then I think you'd be able to say which direction

SER: but your feeling at the moment is that he would respond

DJ: yes

SER: long faces from rest of the group

FP: I() once you had found his level he was able to respond and I think that was the crux is that everybody around him hadn't realised how low I think in fact he is and given the right sort of things to do with him I felt.. I felt mum in the third clip didn't intervene particularly to introduce more meaning to his games, I mean she still let him line up the cars and even when you demonstrated she didn't actually pick up on that so I feel she perhaps needs guidance especially if he's at a lower level than she thinks he is and in the last clip at least she did take something on and started to interact more relevantly. But I felt she would need some guidance and perhaps being shown things to do with him. I didn't feel I could give her something and then say off you go for six months I felt she needed something more with

him being such a low level, 'cos he's two and a half. I felt he was lower than the figures given here (18 months)

SER: below 18 months

FP: yeh

NJ: are you saying he's dim

FP: - with the skills he needs to acquire language - a lot of those I feel are delayed and I don't think at that stage you can say particularly how dim he is because I felt he hadn't had the experience he needed and, given that prelinguistic experience may then develop to such a degree that he would be OK

NJ: he seemed quite happy and untroubled. Does that matter  
general agreement

FP: I think that's because he doesn't understand. I didn't feel we saw any evidence of comprehension there which to me meant he was quite delayed

DJ: I think I would be quite encouraged if he was troublesome or showed some frustration

General agreement

MC: he was very very quiet. no exploration of sound

(My summary of what I did with him)

NJ: did you look to exclude anything else

SL: was he globally delayed or what

SR: I didn't feel so at that stage and I didn't look to exclude the motor side. I hadn't actually picked up on the motor because she'd talked about this business of his toes and said that he was clumsy because of his toes I'd left that side alone and his fine motor was quite reasonable

BM: but she did say he was constipated, which can be significant, poor muscle tone

SER: she said his eating had improved recently, that he was eating more

NJ: could a two and a half year old not clear his throat

SER: it should be automatic really

?: he seemed so unaware

DJ: I still feel that if he were severely delayed he would be a lot worse than that

SER: and he wouldn't have been as responsive when he given. I felt that his response to me when I got the right level was very positive and that if we could show her the right level to interact with him that he would make quite rapid progress

BM: but he may well turn out to have reading problems



**APPENDIX M  
ITEMS AND RESULTS OF CARD SORT**

Items giving rise to consensus:

\* concern

# no concern

|  | 2;0 | 2;06 | 3;0 |
|--|-----|------|-----|
| <b>Interaction</b>   |     |      |     |
| in his own little world  | *   | *    | *   |
| isolated   | *   | *    | *   |
| autistic features  | *   | *    | *   |
| actively discourages interaction                                   | *   | *    | *   |
| actively rejects interaction from mother                           | *   | *    | *   |
| oblivious to speech as a means of communicating                    | *   | *    | *   |
| doesn't know how to achieve communication                          | *   | *    | *   |
| immense problems communicating                                     | *   | *    | *   |
| doesn't relate in the usual way                                    | *   | *    | *   |
| obvious interaction problems                                       | *   | *    | *   |
| abnormal interaction   | *   | *    | *   |
| unable to interact   | *   | *    | *   |
| not responding in interaction                                      | *   | *    | *   |
| ignores mother's attempts at interaction                           | *   | *    | *   |
| doesn't take any notice of other                                   |     |      |     |
| people's speech or language  | *   | *    | *   |
| makes no attempt to communicate with parent                        | *   | *    | *   |
| doesn't participate in joint action routines                       | *   |      | *   |
| no eye contact when turn taking                                    | *   |      |     |
| communication is not an enjoyable activity                         |     | *    | *   |
| not willingly interacting  |     | *    |     |
| can't relate to people other than mother                           |     |      | *   |
| didn't interact with therapist                                     |     |      | *   |
| points and vocalises to obtain objects,<br>wants and needs         | #   |      | *   |
| not apparently bothered by the fact<br>that no-one understands him |     |      | *   |
| elective mute  |     |      | *   |
| unsociable   | #   |      |     |
| talks as though it were just something<br>else to do               | #   |      |     |
| allowed some interaction   |     | #    | #   |
| takes turns in a posting box activity                              | #   | #    | #   |
| responds to efforts to communicate with him                        | #   | #    | #   |
| showing a desire to communicate                                    | #   | #    | #   |
| attempts to communicate by approaching adult                       | #   | #    | #   |
| raises arms to be lifted up  | #   | #    | #   |
| interacts verbally with mother                                     | #   | #    | #   |
| <b>Expression</b>  |     |      |     |
| expressive language delay of 12 months(+)                          | *   | *    | *   |
| expressive language delay of 18-24 months                          | *   | *    | *   |

|  |   |   |   |
|--|---|---|---|
| specific language disorder                     | * | * | * |
| language patterns are abnormal                 | * | * | * |
| no vocalisation                                | * | * | * |
| vocalisation was bababa & screaming            | * | * | * |
| no language                                    | * | * | * |
| no words                                       | * | * | * |
| has 3-5 single words                           | * | * | * |
| doesn't know how to use language               | * | * | * |
| is not developing any usable language          | * | * | * |
| very little useful/functional language         | * | * | * |
| lack of appropriately used language            | * | * | * |
| echoing without meaning                        | * | * | * |
| silent at home                                 | * | * |   |
| doesn't make lots of noises                    | * | * |   |
| no babble present                              | * |   |   |
| expressive language delay of 6-12 months       | * |   | * |
| screaming                                      | * |   | * |
| jargoning not directed at anyone               |   | * | * |
| uses strings of jargon                         |   | * | * |
| lots of jargon with the occasional word        |   | * | * |
| using single words                             | # | * | * |
| no evidence of joining words                   |   | * | * |
| unable to communicate ideas                    |   | * | * |
| irrelevant responses                           |   | * | * |
| says very little                               |   | * | * |
| poor vocabulary size                           |   | * | * |
| effortful output                               |   | * | * |
| limited range of two word utterances           | # |   | * |
| can't answer a question                        | # |   | * |
| imitating single words                         | # |   |   |
| using two word utterances                      | # |   |   |
| child comes out with things out of the blue    | # |   |   |
| 20-30 utterances heard during session          | # |   |   |
| has particular difficulties with               |   |   |   |
| grammar and syntax                             | # | # |   |
| talking in phrases                             | # | # | # |
| talking in little sentences with mum           | # | # | # |
| using three word sentences                     | # | # | # |
| using 3-4 word sentences                       | # | # | # |
| using four word sentences                      | # | # | # |
| occasional omission of determiners or pronouns | # | # | # |
| has particular difficulties                    |   |   |   |
| with question 'wh' forms                       | # | # | # |
| using a mixture of two language                |   |   |   |
| (eg English and Italian)                       | # | # | # |
| <b>Comprehension</b>                           |   |   |   |
| not reliable at identifying objects by name    | * | * | * |
| comprehension delay of 12 months (+)           | * | * | * |
| finds it difficult to locate sound             | * | * | * |

|  |   |   |   |
|--|---|---|---|
| not understanding words  | * | * | * |
| able to select objects at a<br>single word level in context only                   |   | * | * |
| able to select objects if signs<br>accompanied word                                |   | * | * |
| responds quicker to signing  |   | * | * |
| comprehension is inconsistent  |   |   | * |
| could not cope with complex commands in<br>play situation                          |   |   | * |
| able to select objects at a single word level                                      | # |   |   |
| repeated utterances to self as if to<br>give himself time to process what was said | # | # |   |
| comprehension is at a two word level   | # | # |   |
| identifies body parts  | # | # | # |
| comprehension within 2-3 months of norm  | # | # | # |
| enjoys following instructions  | # | # | # |
| <b>Intelligibility</b>   |   |   |   |
| Mother can't understand  | * | * | * |
| family don't understand the child  | * | * | * |
| Therapist could not understand the child   | # | # | * |
| child is unintelligible  |   |   | * |
| other children can't understand the child  | # |   |   |
| child will not be understood at nursery  | # |   |   |
| couldn't make himself understood<br>in connected speech                            | # |   |   |
| child will stand out at playgroup<br>as unintelligible                             |   | # |   |
| mother interprets his speech to others   | # | # |   |
| slt could usually understand the first<br>word and then get the gist of the rest   | # | # |   |
| intelligibility deteriorates in<br>sentences or connected speech                   | # | # |   |
| child is 50% intelligible  | # | # |   |
| people around him understand him   | # | # | # |
| child became more intelligible to slt<br>as the session progressed                 | # | # | # |
| slt couldn't understand the child sometimes  | # | # | # |
| child is 75% intelligible  | # | # | # |
| can understand 80% of what child says  | # | # | # |
| <b>Phonology/articulation/speech</b>   |   |   |   |
| odd resonance, rhythm, stress, vocal quality                                       | * | * | * |
| hypernasal resonance   | * | * | * |
| aphonic  | * | * | * |
| poor motor production  | * | * | * |
| dyspraxic features   | * | * | * |
| using nasal for bilabials  | * |   | * |
| poor imitation of gross sounds   |   | * | * |
| poor sequencing of sounds  | # | * | * |

|  |   |   |   |
|--|---|---|---|
| no labial consonants                         |   | * | * |
| using only velar sounds                      |   | * | * |
| atypical sound pattern                       |   | * | * |
| very restricted sound system                 |   | * | * |
| words have little similarity to adult target |   | * | * |
| vowel distortions                            |   |   | * |
| use of glottals or /h/                       |   |   | * |
| no initial consonants                        |   |   | * |
| everything is /d/                            |   |   | * |
| open syllables                               | # | # | * |
| backing                                      | # |   | * |
| use of non-English sounds                    |   |   | * |
| severe phonological delay                    |   | ? | * |
| slt can't work out the processes             |   |   |   |
| as she listens to the child                  |   |   | * |
| can't copy farmyard sounds                   |   |   | * |
| stammers                                     |   |   | * |
| nonfluent/dysfluent                          |   |   | * |
| limited range of consonants                  | # |   |   |
| system is stable but variable                | # |   |   |
| nasalised /s/                                |   | # |   |
| final consonant deletion                     | # | # |   |
| stopping of fricatives                       | # | # |   |
| intrusive schwa                              | # | # |   |
| not saying his sounds clearly                | # | # |   |
| sound system is variable                     | # | # |   |
| speaks quickly                               | # | # |   |
| has an appalling lateral /s/                 | # | # |   |
| context sensitive voicing                    | # | # | # |
| fronting                                     | # | # | # |
| not using any clusters                       | # | # | # |
| lisp   | # | # | # |
| /f/ for /th/; /w/ for /r/                    | # | # | # |
| ingressive fricative for /s/                 | # | # | # |
| velar sounds, some fricative and             |   |   |   |
| clusters are immature                        | # | # | # |
| child self corrects                          | # | # | # |
| very quiet voice                             | # | # | # |

? Missing item could affect consensus

### Items not achieving consensus

#### **Interaction**

passive

wandering about a lot on his own

ignores mothers questions

doesn't need to be understood

not waiting to see the effect of his communication

#### **Expression**

long pause between event and verbalisation

#### **Comprehension**

responded to intonation (eg mother's 'no' voice)

selects objects with a visual clue

comprehension delay of 6 months

comprehension is less reliable without situational or contextual clues

mother reported that child does not always fetch what she wants him to

#### **Phonology etc**

massive inconsistencies

phonetic component

## **APPENDIX N SGNs IN USE**

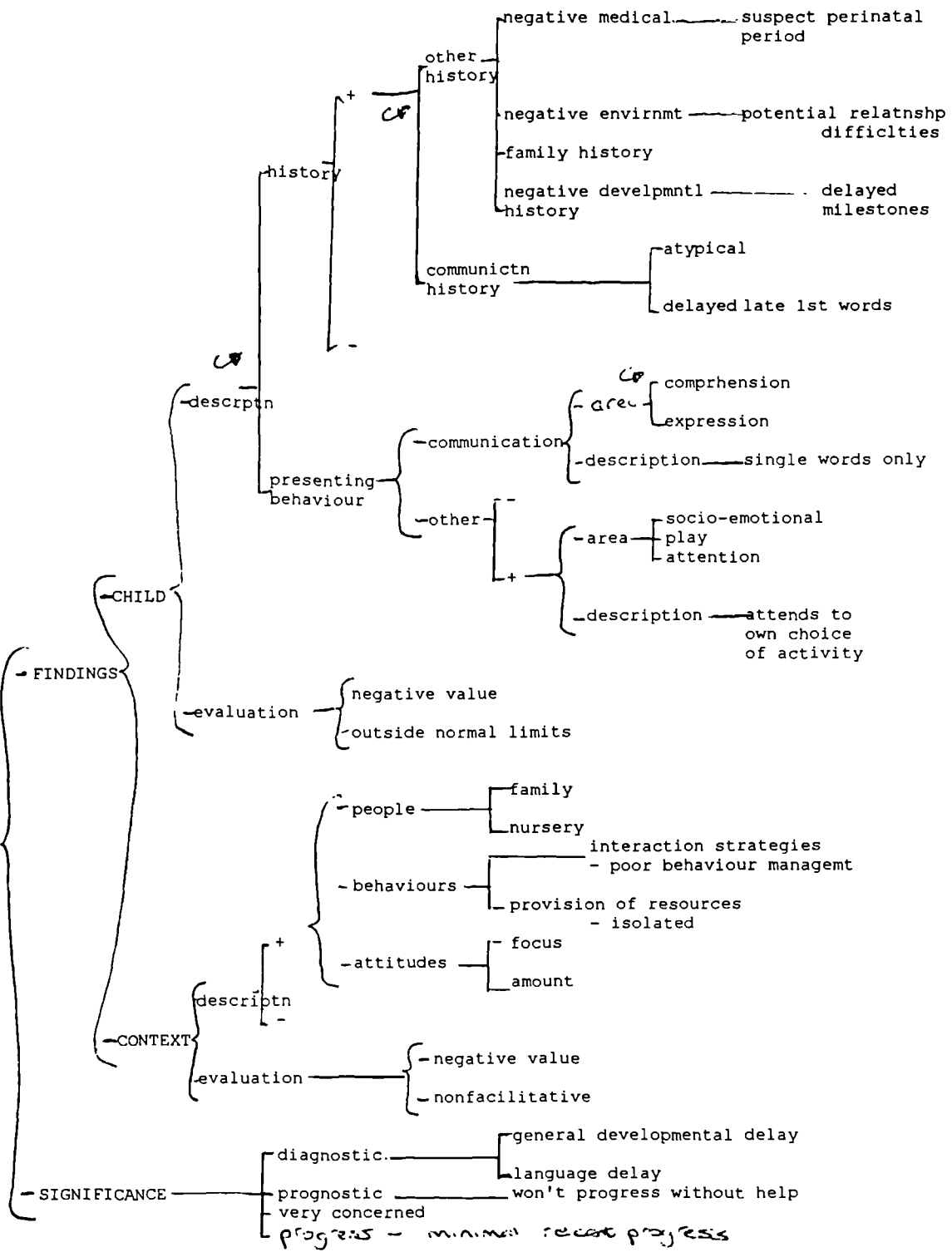
The SGNs below are a reconstruction of the priority and nonpriority networks using the results of the SGN evaluation and the problem formulations SGN. It shows findings which are associated with a prioritisation and nonprioritisation decisions. As such they provide example paradigms. Individual children may present with more or fewer features or with a combination of priority and nonpriority features.

### **N.1. CHARACTERISTICS OF THE PRIORITY CHILD**

The example given here is the same as that given in the worked example of the SGN evaluation.

The child described in the paradigm has a series of negative case history findings, both medical and environmental: in particular, this child had a high temperature at birth, meconium was present and the child was placed on antibiotics for ten days; in other words a suspect perinatal history which is potentially associated with communication disorder; the family were living abroad until the parents separated recently; the mother reported feeling unable to cope with her daughter since the separation and their return to the UK. Although not perceived as causative, such a history is seen as negative because it may indicate potential problems in the relationship between parent and child. In this case there was no family history of communication disorder. The child's general development has been slow with crawling and walking milestones adjudged late by the mother and first words have only recently appeared. It has taken the child approximately six months since then to achieve a fifty word vocabulary.

This information would be evaluated as negative and indicative of development outside the normal range.



**Figure N1 A prioritisation paradigm**

The child's presenting communication is described as follows:

Area: Comprehension

Description: Identified objects from a single word in context only \*

Following simple commands only with visual and contextual clues

Area: Expression

Description: No intelligible words heard in session \*

Mother interpreted some utterances only as single words, ie no phrases used \*

Vocalising with communicative intent

Starred descriptions achieved consensus concern for a three year old child in the card sort exercise.

Other presenting behaviours are described as follows:

Play: Spontaneous play is exploratory. Imitated relational and simple pretend actions

Attention: Flits from one activity to another; returns to an activity if the adult stays but no consistent response to attention gaining strategies from adult (eg physical, verbal prompts)

These presenting behaviours are *evaluated negatively and as outside the 'normal'* developmental range for the child's age.

The child's context is also viewed as negative and non-facilitative. For example, in terms of the mother's behaviours: interaction strategies for management of the child's behaviour were verbal only with no follow-up. (eg says 'no' but doesn't move in to distract or redirect); the social environment for the family was unsupported and isolated.

The significance of these evaluated findings was a diagnosis of severe language delay with possible general developmental delay. Given the amount of support the child required and what the context was able to provide currently, the child was unlikely to make remarkable spontaneous recovery. The slt was very concerned.

#### CHARACTERISTICS OF THE NONPRIORITY CHILD

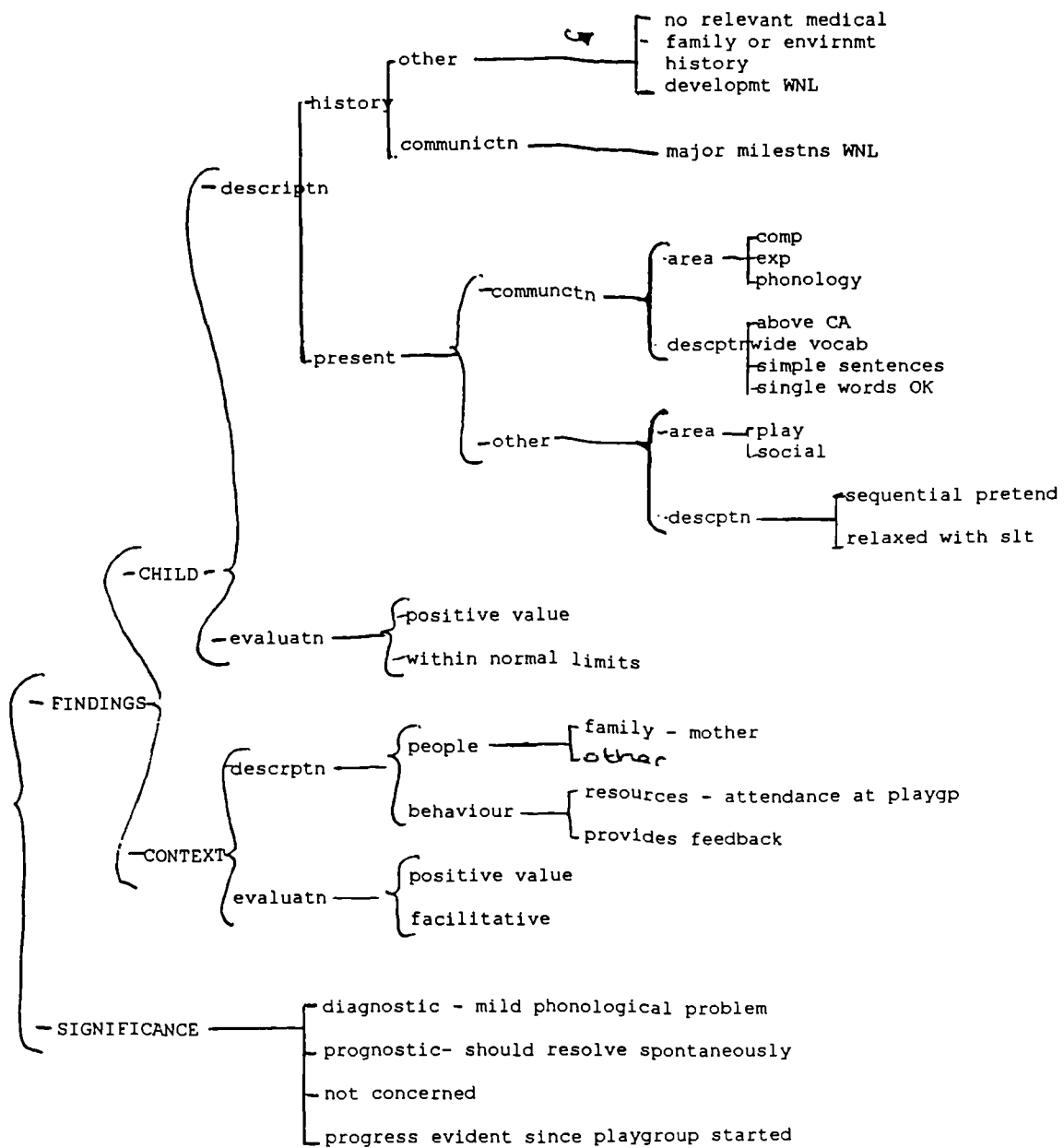
This child was assessed recently by the author and discharged. Aged 3 years 2 months, he had no negative case history features. Communication milestones such as first word vocabulary and use of simple sentences appeared at appropriate time and were evaluated as being within normal limits.

His presenting communication skills were also evaluated as within normal limits. His comprehension was in advance of his chronological age as assessed by a standardised assessment. Expressively, he used a wide vocabulary and a range of simple sentences, with two instances of co-ordinated clauses. Although difficult to understand at times, the author could always tune in given the context and the child used effective repair strategies to help intelligibility. Assessment of his phonology at a single word level showed a normal range of sounds and no atypical simplification processes.

The mother's behaviour and attitudes during the session were evaluated as positive and facilitative. Playgroup sessions had been organised and speech had improved since then. Although mildly concerned, this was occasioned more by the health visitor's referral than any real concern. When dealing with unintelligible utterances, she repeated words back to the child or asked for clarification and did not correct pronunciation per se.

The findings were judged to signify a mild phonological problem in continuous speech which was responding to changes made to the child's context, namely attendance at playgroup. It was felt that the difficulty would resolve spontaneously





**Figure N2 A nonprioritisation paradigm**