Boston University
School of Education

The Fifth Annual Boston University Conference on Language Development

Meeting Handbook
October 10, 11 and 12, 1980
George Sherman Union

Boston University
School of Education

The Fifth Annual Boston University Conference on Language Development

Meeting Handbook
October 10, 11 and 12, 1980
George Sherman Union

Organized by the students of The Program in Applied Psycholinguistics,
Boston University School of Education

Chaired by Blanche Korngold

George Sherman Union, 775 Commonwealth Avenue, Boston, Massachusetts 02215

FOREWORD

Welcome to the Fifth Annual Boston University Conference on Language Development. The passage of time always fills me with disbelief. Only five years ago the students in Applied Psycholinguistics sat around during one of our weekly seminars and decided to launch a fledgling conference on language development. The Conference has matured, and is now an annual celebration on the Fall Calendar at Boston University. We are all very proud of this achievement.

You may note some difference this year. Our registration fees have been raised for the first time in two years because of inflation. The date has been changed. Columbus Day weekend allows us to present three simultaneous sessions rather than four, and to add one extra session to the whole program. The Special Sessions, so successful in the past, have been retained as a regular feature. We fondly hope the October date will give our out-of-town guests an opportunity to savor the beautiful, albeit unpredictable, New England fall.

As in previous years, we have done a "blind review" of the abstracts submitted for presentation. Choosing the best among excellent papers is always a difficult and painful task. We would like to thank the selection committee members for the time and thoughtfulness that entered in their agonizing decisions. We are particularly pleased and honored that Dr. Norman Geschwind will give the keynote address this year. We are also grateful to Drs. Katherine Nelson, John Schumann and Richard Venezky for sharing their current research with us during the Special Sessions on Sunday afternoon. A special note of thanks to Dr. Paula Menyuk, teacher and mentor, who will give the welcoming address, thus punctuating the fifth anniversary of the Conference.

The faculty and administrative support this year again has been outstanding. I would like to thank our friend and faculty advisor, Dr. Bruce Fraser, for his continuous interest and support throughout the year. I would also like to thank Dean Warren and Margie Oliver for their faith and confidence in the organization and management of conference affairs.

The Conference is organized entirely by the students in the Applied Psycholinguistics Program. As chairman of this Conference, I would like to thank everyone who has unselfishly given time and effort toward its success: Wendy Goodhart and Barbara Gomes, co-chairs on the Program Committee, for the many late evenings spent organizing the program; Michele Banker, in charge of publishing the Handbook and Advertising, always on hand for nitty-gritty details; Judy Levin for Facilities; Meta Nisbitt and Irma Rosenfield for Registration; Michele Sola for Publicity; Chuck Schwartz for Exhibits and Rebecca Kantor for moral support. Finally, a note of thanks to Mary Fiorenza, 1979 Conference Secretary, who came to the rescue in August 1980 and typed it all up.

To everyone, welcome to the Fifth Annual Conference! We hope you will find it as interesting and enjoyable as we think it is.

Blanche Korngold
Chairman

The Conference wishes to thank the following members of the Review Committees for their aid in the selection of this year's papers:

Carmella Abbruzzesse (Boston University)
Anthony S. Bashir (Children's Hospital Medical Center)
Nan Bernstein (Boston University)
Frank Curcio (Boston University)
James Flood (Boston University)
Melanie Fried-Oken (Boston University)
Nancy Helm (Veteran's Administration Hospital, Boston)
Robert Hoffmeister (Boston University)
Mathilda Holtzman (Tufts University)
Blanche Korngold (Boston University)
Donaldo Macedo (Boston University)
Susan Magocci (Boston University)
Helen Popp (Harvard University)
Ellen Rintell (University Hospital)
Mary Salus (Boston University)
William Stokes (Lesley College)
Kristine Strand (Northeastern University)
Kay Tolbert (Children's Hospital Medical Center)

* * * * *

The Boston University Program in Applied Psycholinguistics is pleased to announce the receipt of a collection of papers on linguistics and developmental psycholinguistics, a gift from the estate of the late Dr. Margaret Bullowa. These papers have historical significance. They reflect the pioneering work done by authors in our field and provide a link between past and future research.

The papers will be housed in the Archives of the Boston University Mugar Library. They will be available to anyone engaged in research and study in language development.

Contents

Foreword 3

General Information 8

Conference Program ... 10

Abstracts 19

Directory of Conference Speakers 77

General Information and Conference Program

GENERAL INFORMATION

LOCATION

All sessions will be held in the Boston University George Sherman Union building at 775 Commonwealth Avenue. Registration will be held in the Stone Lobby.

KEYNOTE ADDRESS

Professor Norman Geschwind, James Jackson Putnam Professor of Neurology at Harvard University, will deliver the keynote address at 8:30 p.m. on Friday,October 10, in the Ballroom on the second floor.

RECEPTION

A wine and cheese reception will be held in the Ballroom following Dr. Geschwind's address.

NEW ENGLAND CHILD LANGUAGE ASSOCIATION (NECLA)

NECLA will hold its annual business meeting at 1:00 on Saturday in the Terrace Lounge. Please feel free to bring your lunch.

PUBLISHERS' EXHIBITS

There will be a publishers' exhibit of books and publications during Saturday and Sunday in the Ziskind Lounge of the George Sherman Union.

SIGN LANGUAGE INTERPRETERS

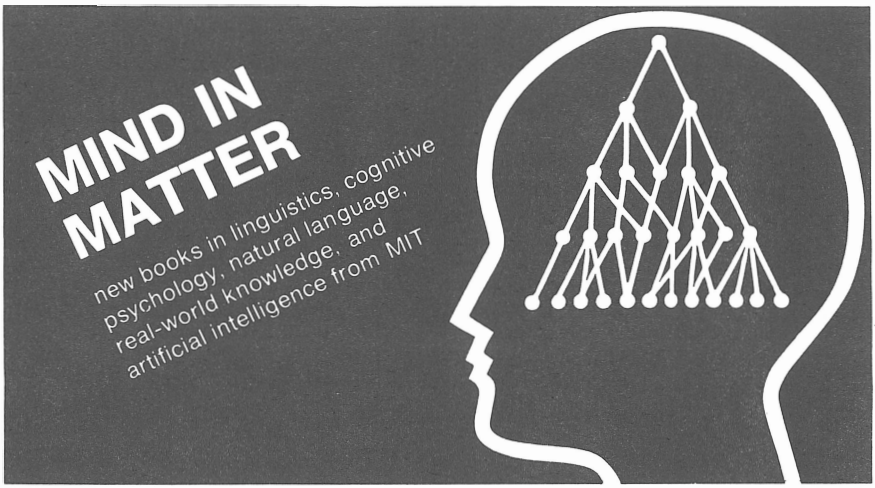
Sign language Interpreters will be available for all sessions. Please inquire at the Registration desk when you arrive.

ADDITIONAL HANDBOOKS

Additional handbooks may be purchased on Saturday morning for $2.00 each (checks only!!!) at the Registration desk. We are sorry, but we cannot replace lost handbooks free of charge. A limited number of copies of the 1977, 1978, and 1979 Handbooks are also available for purchase at $2.00 each.

CHECKROOM

Coats and luggage may be checked at the cloakroom in the Stone Lobby.



Formal Principles of Language Acquisition

by Kenneth Wexler and Peter W. Culicover

By focusing their inquiry on formal language learnability theory—the interface of formal mathematical linguistics, linguistic theory, and cognitive development—the authors of this book have developed a rigorous and unified theory that opens the study of language learnability to discoveries about the mechanisms of language acquisition in humans.
$35.00

Biological Studies of Mental Processes

edited by David Caplan

These contributions by linguists, psychologists, and neuroscientists explore the new concepts and topics that extend and revise our former ideas about the biology of cognition. They present outstanding and timely research on the biological mechanisms underlying and correlating with linguistic and developmental processes.
$24.95

The MIT Press

Massachusetts Institute of Technology
Cambridge, Massachusetts 02142

Other recent publications:

A Theory of Syntactic Recognition for Natural Languages
by Mitchell P. Marcus
$25.00

NETL:
A System for Representing and Using Real-World Knowledge
by Scott E. Fahlman
$17.50

Linguistic Theory and Psychological Reality
edited by Morris Halle, Joan Bresnan, and George A. Miller
$17.50

The Interpretation of Visual Motion
by Shimon Ullman
$17.50

The Eye-Voice Span
by Harry Levin with Ann Buckler Addis
$15.00

Dyslexia:
Theory and Research
by Frank R. Vellutino
$19.95

Boston University

Fifth Annual Conference on Language Development

George Sherman Union

CONFERENCE PROGRAM

Friday, October 10, 1980

4:00 - 7:30 p.m.	Registration	
7:30 p.m.	Welcoming Addresses	Ballroom
8:30 p.m.	Keynote Address:	Ballroom

Dr. Norman Geschwind
James Jackson Putnam Professor of Neurology
Harvard University

"Language and the Brain"

Reception: A wine and cheese reception will be held in the Ballroom following Dr. Geschwind's address.

Saturday, October 11, 1980

8:30 - 11:00 a.m.	Registration	
9:00 a.m. - 12:00 noon	Saturday Morning Sessions	
12:00 - 2:00 p.m.	Lunch	
1:00 - 2:00 p.m.	NECLA Annual Meeting	Terrace Lounge
2:00 - 5:30 p.m.	Saturday Afternoon Sessions	

LANGUAGE DEVELOPMENT IN YOUNG CHILDREN

Ballroom

Chair: Jacqueline Sachs (University of Connecticut-Storrs)

9:00 a.m.	Joanne Bitetti Capatides, Kathleen Fiess, and Lois Bloom (Teachers College, Columbia University). "The Contexts of Causality"
9:30	Carolyn Johnson (University of British Columbia). "The ontogenesis of question words in children's language"
10:00	Break
10:30	Judith A. Winzemer (City University of New York). "A lexical-expectation model for children's comprehension of wh-questions"

11:00 William T. Stokes and Susan Holden (Lesley College). "Individual Patterns in Early Language Development: Is there a one word period?"

11:30 Karen Hardy-Brown (University of Colorado). "Environmental and Genetic Influence on Individual Differences in the Communicative Development of One-year-old Adopted Children"

READING/WRITING

Terrace Lounge

Chair: Maurice Kaufman (Northeastern University)

9:00 Sandra Stotsky (Curry College). "Types of Lexical Cohesion in Expository Prose: Implications for Developing and Assessing Vocabulary in Reading/Writing."

9:30 Ann J. Pace (University of North Carolina - Greensboro). "Children's Knowledge and Text Comprehension"

10:00 Aviva Freedman (Carleton University). "Modal Differences in Student Writing: Rhetorical Control"

10:30 Break

11:00 Grant L. Cioffi (University of New Hampshire, Durham). "The Perception of Sentence Structure by Good and Poor Comprehenders"

11:30 Judith R. Birsh (Professional Children's School, NYC). "The Relationship of Specific Grammatical and Propositional Aspects of Language Development at 30 Months to Reading at Age 8: A Follow-up Study"

LANGUAGE DISORDERS

Conference Auditorium

Chair: Carol Levy (Kennedy Memorial Hospital for Children, Brighton)

9:00 Mary Louise Edwards (Syracuse University). "The Use of 'Favorite Sounds' by Children with Phonological Disorders"

9:30 Mavis Donahue, Tanis Bryan and Ruth Pearl (University of Illinois at Chicago). "Conversational Strategies of Learning Disabled Children"

10:00 Nancy J. Spekman (University of Maryland). "The Dyadic Verbal Communication Skills of Learning Disabled and Normally Achieving 4th and 5th Grade Boys"

10:30 Break

11:00 Elayne Gersten (Pre-Schooler's Workshop). The Acquisition of Language in Pre-School Autistic Children"

11:30 Rosa M. Needleman (UCLA) and Dale Elliott (California State University, Dominguez Hills). "Language, Pragmatics, Cognition: The view from developmental language disorders"

SOCIOLINGUISTIC INTERACTION

Ballroom

Chair: Esther Greif (Boston University)

2:00 p.m. Anna-Beth Doyle, Charo Sufrategui and Irene Borboudakis (Concordia University). "Preschoolers' Verbal and Non-Verbal Social Behavior to Native and Non-Native Listeners"

2:30 Jeremie Hafitz, Barbara Gartner and Lois Bloom (Teacher's College, Columbia University). "Giving Complements When You're Two: The Acquisition of Complementation in Complex Sentences"

3:00 Break

3:30 Zoe Graves (City University of New York). "The Effect of Context on Mother-Child Interaction"

4:00 David Paul Gordon, Amy Strage, and Nancy Budwig (University of California - Berkeley). "Children's Requests to Unfamiliar Adults: Form, Social Function, Age Variation."

4:30 K.P. Immler and Harry Levin (Cornell University), Catherine E. Snow (Harvard University). "Honey, You'll Feel Better Soon: The Sick-Room Social Speech Register"

5:00 Roy D. Pea and Robert Russell (Clark University). "Foundations for a Scientific Theory of Communicative Development"

BILINGUALISM/SECOND LANGUAGE ACQUISITION

Terrace Lounge

Chair: Maria Brisk (Boston University)

2:00 Fred Genesee (McGill University). "The Social Psychological Significance of Code Switching for Children"

2:30 Amy A. Strage (University of California - Berkeley). "Communicative and Analytic Strategies in Naturalistic Second Language Acquisition"

3:00 Kenji Hakuta (Yale University), Herlinda Cancino (The Huron Institute), Deborah Fish (Harvard University) and Maria Josefina Yanguas (Harvard University). "The Relationship Between Social, Linguistic and Cognitive Variables in Adult Second Language Learning"

3:30 Break

4:00 Rajendra Singh (University of Montreal). "Syllables in Interphonology"

4:30 Lloyd B. Anderson. "Different Paths of Language Development among Deaf Students"

5:00 Manuel Escamilla and Kathy Cogburn-Escamilla (California State University - Fullerton). "A Comparison of English and Spanish Syntactic Language Development in Young Spanish Speaking Mexican-Americans in Maintenance Bilingual-Bicultural and Pull-Out ESL Programs"

SYNTAX/SEMANTICS

Conference Auditorium

Chair: Peter Salus (University of North Florida)

2:00 Anne Cutler (University of Sussex) and David Swinney (Tufts University). "Development of the Comprehension of Semantic Focus in Young Children"

2:30 Celia Jakubowicz (Laboratoire de Psychologie Experimentale). "The development of the children's capacity to map surface form and meaning in 'if' sentences"

3:00 Barbara Lust, Joan Pinhas-Langweiler and Suzanne Flynn (Cornell University). "The Acquisition of Gapped Coordinate Structures"

3:30 Break

4:00 Anne Erreich (Children's Hospital Medical Center). "'Why you won't play with me?': Non-Inversion Errors in Wh-Questions"

4:30 Cathy H. Dent (University of North Carolina - Chapel Hill). "Children's use of anaphora in discourse: A progression from situational to textual reference"

5:00 Keith E. Nelson and Marilyn Denninger (The Pennsylvania State University). "Semantic Concept Acquisition and Generalization at Three Age Levels: Beyond Prototypes"

Sunday, October 12, 1980

9:00 a.m. - 12:00 noon — Sunday Morning Sessions

12:00 - 2:00 p.m. Lunch

2:00 - 4:00 p.m. Special Sessions

SELECTED PAPERS IN LANGUAGE ACQUISITION — Ballroom

Chair: Robert Hoffmeister (Boston University)

9:00 a.m. Madeline Boskey and Katherine Nelson (City University of New York). "Answering Unanswerable Questions: The Role of Imitation"

9:30 John L. Locke (University of Maryland) "Phonetic dispositions of the child and phonemic demands of the lexicon: Some developmental implications"

10:00 Break

10:30 Carol L. Smith and Helen Tager-Flusberg (University of Massachusetts - Boston). "The Relationship Between Language Comprehension and the Development of Meta-linguistic Awareness"

11:00 Catherine Garvey and Valerie Greaud (The Johns Hopkins University). "Factors Influencing the Form of Continued Reference in Children's Talk"

11:30 Tsvia Walden (Harvard University). "Strategies used by preschoolers in handling ungrammatical forms in Hebrew"

CROSS-LINGUISTIC STUDIES

Terrace Lounge

Chair: Bruce Fraser (Boston University)

9:00 Rebecca E. Eilers, William J. Gavin and D. Kimbrough Oller (University of Miami). "Cross-Linguistic Studies of Infant Speech Perception: The Role of Linguistic Experience"

9:30 Marilyn May Vihman (Stanford University). "The Acquisition of Morphology by a Bilingual Child: A Whole-Word Approach"

10:00 Michèle Kail (Laboratoire de Psychologie Expérimentale) and Jürgen Weissenborn (Max-Planck-Institut für Psycholinguistik). "A developmental cross-linguistic study of the processing of lexical presuppositions: French 'MAIS' and German 'ABER vs SONDERN'"

10:30 Break

11:00 Barbara Lust, Tatsuko Wakayama, Wendy Snyder and Margaret Bergmann (Cornell University). "The development of coordination in Japanese first language acquisition: a study of natural speech"

11:30 Elena Pizzuto (Istituto di Psicologia Sperimentale, University of Palermo and The Salk Institute for Biological Studies). "The Early Development of Pronouns in American Sign Language: from pointing gestures to pointing signs."

LANGUAGE DELAY/DISORDERS

Conference Auditorium

Chair: Lenore Daniels-Miller (New England Medical Center)

9:00 Anne E. Hogan and Jeffrey M. Seibert (University of Miami). "The Emergence of Object Labels in Developmentally Delayed Toddlers: Implications for Intervention and for a Theory of Early Reference"

9:30 A. Fowler, R. Gelman, and L. Gleitman (University of Pennsylvania). "A Comparison of Normal and Retarded Language Equated on MLU"

10:00 Carolyn M. Graybeal (Boston University). "Memory for Stories in Language-Impaired Children"

10:30 Break

11:00 Mavis Donahue (University of Illinois at Chicago). "Requesting Strategies of Learning Disabled Children"

11:30 Jacqueline Liederman (Boston University) and Harold Goodglass (Boston Veterans Administration Hospital). "Word retrieval failures in the course of narrative: Face-saving devices of children, adult aphasics and the elderly"

SPECIAL SESSIONS

Sunday 2:00-4:00

FIRST LANGUAGE ACQUISITION — Ballroom

Featured Speaker - Katherine Nelson (City University of New York)

"The Significance of Individual Differences in First Language Acquisition"

Discussants: Lise Menn (Boston University Medical Center)
Keith Nelson (Pennsylvania State University)

READING — Terrace Lounge

Featured Speaker - Richard Venezky (University of Delaware)

"Orthographic Structure and Letter Sound Relations in Word Recognition"

Discussants: John Frederickson (Bolt, Beranek and Newman, Inc.)
Marilyn Adams (Bolt, Beranek and Newman, Inc.)

SECOND LANGUAGE ACQUISITION — Conference Auditorium

Featured Speaker - John Schumann (University of California, Los Angeles)

"Acquiring English as a Second Language and the Pidginization Hypothesis"

Discussants: Kenji Hakuta (Yale University)
Donaldo Macedo (Boston University)

ABSTRACTS

ANDERSON, Lloyd B.

Different Paths of Language Development among Deaf Students

Deaf children grow up in a special type of communication situation. In their development we can see separately the effects of two factors which are hard to separate in most children: (a) exposure to a particular target language, and (b) development of social communicative competence along with the ability to think in abstract symbols.

This paper reports some results from a study involving English and ASL (American Sign Language). One conclusion is that of the two factors mentioned, (b) is the more important, as it is essentially involved in cognitive development, and a particular target language can be built upon it. By contrast, (a) alone is inadequate as a basis for development: explicit teaching of a first language without communicative use is not a solid foundation for further development.

An experimental part of the study involved 26 secondary-school deaf students ages 14-19, who saw six skits on a videotape and were asked to retell each one to another student who had not seen it. They could use English in signs, or ASL, or any of many mixtures and varieties which are found in the complex bilingual diglossic situation of deaf culture within the United States. The retellings were videotaped, and analyzed in detail for components of each standard language (English and ASL).

Results of this part show that students who had a native-language competence in ASL from family or residential school (ASL group) were more precise in vocabulary choice and used normal discourse (same subject linking sentences into a paragraph, etc.). They also showed better command of English grammar as well as of ASL, for example the English verb-particle construction. Students without such a background (non-ASL group) tended to match English surface forms without as clear an understanding of grammatical structure, less vocabulary precision, and so on.

A second part of the study used longitudinal data from the Stanford Achievement Test, scores generally available at least from ages 13-18. This data shows that the two groups of students have quite different profiles and presumably were learning in different modes. For the non-ASL group, subtest scores "Vocabulary" and "Reading Comprehension" tended to advance together in the same years. For the ASL group these two scores tended to advance in different years. For the ASL group the Reading Comprehension score was more strongly connected with Mathematics Concepts and Communication Comprehension scores, indications that Reading Comprehension for the ASL group is closely tied to general cognitive development and communication.

Two students who achieved generally higher scores on most subtests were early bilinguals.

The talk will display examples of grammatical reanalysis by the different groups of students (for the verb-particle construction, the non-ASL group treats the particle as if it were a main verb, by a direct match of surface forms). The second part of the talk is illustrated by longitudinal graphs (an early advantage in Vocabulary and Reading Comprehension and Spelling scores by the non-ASL group is not maintained while early advantages in cognitive development and communication areas by the ASL group are translated into later general advantages).

The conclusion states implications for bilingual education for deaf students.

* * * * *

BIRSH, Judith R. (Professional Children's School, New York City)

THE RELATIONSHIP OF SPECIFIC GRAMMATICAL AND PROPOSITIONAL ASPECTS OF LANGUAGE DEVELOPMENT AT 30 MONTHS TO READING ABILITY AT AGE 8: A FOLLOW-UP STUDY

This follow-up study investigated the relationship between language acquisition and learning to read by examining specific aspects of early language development in relation to later reading ability in the same children. The children's intelligence, and their mothers' educational level and verbal ability were also considered. It was anticipated that children who had difficulty in acquiring spoken language would have difficulty in learning to decode and comprehend written language.

The principal research problems were: (1) relationship of specific syntactic and propositional aspects of language and Mean Length of Utterance at 30 months of age to reading at age 8; (2) relationship of intelligence to reading; (3) relationship of mothers' educational level and verbal ability to children's reading.

The 31 subjects, white boys with mean age 8, attending different elementary schools in the New York area, were the only subjects available from a group of 60 boys, the original participants in a longitudinal study in 1972 at Albert Einstein College of Medicine focusing on emergence of differences in intelligence at 24 and 30 months of age. Subjects were 16 boys with college-educated mothers and 15 with high school-educated mothers.

Subjects were given The Woodcock Reading Mastery Tests and The Gray Oral Reading Test. Parents filled out a questionnaire on home, school and health factors. Data available from the original longitudinal study were: Stanford-Binet scores at 30 months; mothers' WAIS Vocabulary raw scores; and Mothers' Educational Level. A psycholinguistic analysis of

the boys' spontaneous language at 30 months was performed based on propositional content and syntactic function and form construction using sector analysis, a tagmemic grammar, as the theoretical foundation. The analysis provided the following data: Syntactic Complexity Scores; Percentage of Predicative Utterances; and Mean Length of Utterance. Correlational matrices were used for statistical analysis.

Results were the following: (1) Subjects with Syntactic Complexity Scores and Percentage of Predicative Utterances at 30 months more than one standard deviation below the mean for the group were the poorer readers. (2) The Syntactic Complexity Scores and Percentage of Predicative Utterances at 30 months showed significant positive correlations with the reading "comprehension" factor and oral reading but not with the "decoding" factor. (3) Mean Length of Utterance at 30 months showed nonsignificant correlations with reading. (4) Intelligence at 30 months was positively correlated with the reading "comprehension" factor and oral reading. (5) Mothers' Educational Level and WAIS Vocabulary raw scores correlated strongly with all reading subtests. Subjects with high school-educated mothers performed less well as a group on the 30-month language and intelligence measures, and on the follow-up reading tests. (6) Subjects with college-educated mothers used a range of different linguistic cues and higher level reading strategies than subjects of high school-educated mothers who used decoding skills almost exclusively.

In sum, low levels of syntactic complexity and less mature communicative use of language at 30 months were antecedents of low levels of functioning in reading five years later. At 30 months, subjects with college-educated mothers used more complex syntactical functions and forms and expressed a greater frequency of the more mature predicative propositional constructs. At age 8, they had made better progress in all levels of reading skills. Across the two groups, deficiencies in early language acquisition were developmental precursors to reading difficulties. Differences seen in the two educational groups may have been, in part, a reflection of the varied linguistic and experiential backgrounds of the children. Further longitudinal research needs to be done to observe and record the language acquisition process and the early steps of learning to read in the same children.

* * * * *

BOSKEY, Madeline,and NELSON, Katherine (City University of New York)

Answering Unanswerable Questions: The Role of Imitation

The study investigated the hypothesis that imitation serves a pragmatic function in language acquisition. The specific hypothesis tested was that children imitate adults' utterances in order to hold their place in

a conversation when they lack other appropriate means of participation. To test this, an experiment presented children with a series of questions that were either answerable or unanswerable and their imitative responses were observed. Eighteen children, ages 22 to 33 months, who were characterized as imitators or non-imitators on the basis of naturalistic conversational data collected in their homes, served as subjects. The children's verbal and nonverbal responses to the questions were scored as relevant verbal, irrelevant verbal, nonverbal, verbal plus nonverbal, imitation, or no response. The results showed that differences exist between imitators and non-imitators in their strategies for answering questions. Non-imitators are more likely to give relevant verbal responses to all questions. Imitators, who were significantly younger than non-imitators, tended to imitate unanswerable questions. The data suggest further exploration of the imitability of different grammatical categories of questions.

* * * * *

CAPATIDES, Joanne Bitetti, FIESS, Kathleen, and BLOOM, Lois (Teachers College, Columbia University)

The Contexts of Causality

The results of the present study highlight the fact that development continues to occur in syntactic structures well beyond the time when they are initially acquired. The present study examined the sample case of complex sentences with causal connectives that express a causal meaning in seven children who were studied longitudinally from 2 to 3 years of age. Although the basic syntactic form of their sentences remained constant throughout this period there was considerable change in (1) discourse cohesion, that is, the way the clauses were connected in the spoken text, (2) the meaning relations that they expressed, and (3) the social contexts in which they occurred.

When the causal utterances first emerged, the two clauses that were connected were both produced by the child as a causal statement. These generally coded an essential relationship between events, that is, either a means-end relationship or an action and its resultant state. Further, these were used primarily in discourse situations where the children provided a descriptive commentary on their own activity or some action or event that they observed in the environment.

With development, there was an expansion in the types of cohesive links, meanings and social contexts for the use of causal expressions. In addition to causal statements with two conjoined clauses, the children now produced causal clauses in response to adult why questions and, less often, in reaction to an adult statement. Thus, these new cohesive formations of response and reaction were directly dependent upon or

prompted by an adult utterance. This development in cohesion occurred at the same time as the use of a second causal meaning, that of a sufficient relationship between events. Sufficient utterances provided reasons that appealed to social, cultural or emotional judgements. There was further development in the kinds of situations that initiated the use of a causal expression, as the children came to use causal expressions with increasing frequency to attempt to influence the behavior of others by directing, prohibiting or negotiating a joint activity.

The results of this study provide evidence that the syntactic structures for expressing causality were acquired initially in limited discourse contexts with limited meanings and social uses. Once the structures were acquired, subsequent development consisted of the children learning to use the structures with different meanings, in more varied discourse contexts and for increasingly complex interpersonal negotiations.

* * * * *

CIOFFI (Late addition. Follows Winzemer).

CUTLER, Anne (University of Sussex), and SWINNEY, David (Tufts University)

Development of the Comprehension of Semantic Focus in Young Children

Acquiring the ability to comprehend utterances involves more than simply learning the meaning of individual words and the structural relations between them. A number of other types of information, such as semantic intentions and logical inferences, are integral aspects of adult comprehension and thus the child must learn to recover these also. Semantic focus is one such type of information that plays an important role in adult comprehension. Among other things, semantic focus indicates that information in a sentence which is new and, thus, indicates how that sentence relates to the preceding discourse. Semantic focus is commonly (but not solely) cued by primary sentence accent (stress). In the sentence "The MAN sat on the chair", for example, the focused information indicates that it is a man, and not a boy, girl, or anything else, that sat in the chair. Further, it is that piece of information that is of critical importance in that sentence. It is only from a recent series of studies by Cutler and her associates (Cutler & Foss; Cutler & Fodor) that details of how adults identify and use semantic focus during sentence comprehension have become known. Of considerable interest, however, is how the ability to recover semantic focus develops in the young listener. Not only would this information tell us something of the nature of semantic/inferential development in general, but it would also help determine the degree to which claims of perceptual 'primacy' and automaticity for such semantic/inferential information are supportable.

Two studies were undertaken to examine the development of semantic focus. Both utilized an experimental technique which examines comprehension

'on-line', while it is occurring. In this 'word-monitoring' task, children age 3.1 to 7.11 and adults (controls, age 18.1 to 22.2) were given a target word to listen for in auditorily presented sentences or paragraphs. Reaction time to detect the target word has been shown to be a sensitive measure of sentence processing complexity in both young children and adults (Foss et al., 1977, Swinney & Cutler, 1979). It is typically shown that the longer the detection time, the greater the comprehension difficulty/processing load at the point at which the target occurred in the sentence.

The first experiment examined the effects of primary sentence accent and word class (open vs. closed class) upon sentence processing difficulty in 30 subjects (20 children, 10 adults). Because accented open class words in sentences are processed most rapidly during comprehension by adults, and because intonation appears to be under control (in both comprehension and production) in even very young children, it was expected that accented open class words would also be processed most easily/rapidly by the youngest of children tested. Surprisingly, it was found that at the earliest ages (3-6) primary sentence accent does not affect (facilitate) sentence processing (although word class does have an effect). By age 6 it was found that sentence accent begins to have an effect upon sentence comprehension/processing complexity.

In order to discover whether the lack of use of accent/intonation information by the youngest children in the first study was due to an inability on their part to properly use the suprasegmental cues to semantic focus or whether it was due to lack of development of the concepts underlying semantic focus, a second study was undertaken. Twenty-four children (see ages, above) participated in this study in which semantic focus was indicated by use of a question preceding the sentence containing the critical focal information, rather than by sentence accent. The results, again, suggest that the concept of semantic focus is simply not functional at the youngest ages tested. In addition, it appears that different cues to semantic focus (syntactic, suprasegmental) have different developmental histories. A model of the development of the concept underlying semantic focus and of the various reflections of that concept is presented.

* * * * *

DENT, Cathy H. (University of North Carolina, Chapel Hill)

Children's Use of Anaphora in Discourse: A progression from situational to textual reference.

Halliday and Hasan (1976) distinguish situational anaphoric reference, wherein anaphors refer to some aspect of the present environment, from

textual anaphoric reference, wherein anaphors refer to other words. The purpose of the present study is to apply these linguistic definitions to actual discourse data from children and adults in order to search for developmental patterns in the use of anaphoric reference. Anaphoric items, such as pronouns, have minimal semantic content in their own right. Their specific meaning derives from reference to something else.

If anaphoric reference follows the same developmental course as lexical reference (i.e., from particulars to concrete objects to abstract objects or ideas) then situational anaphora should precede textual anaphora. That is, using anaphors to refer to something present in the environment should precede using anaphors that refer to other words that have been spoken. The words are more abstract than the objects in the environment in the sense that they themselves refer to, or stand for, objects or events.

The discourse data of the present study consists of children's and adults' descriptions of their own actions to an adult who could not see the action. Thirty-six people, 12 adults, 12 age 10, and 12 age 6, performed three simple construction tasks and described their actions. In all of the tasks the objects and locations can be specified by naming the colors of the objects involved in the action (e.g., "put the red, the blue, the green in"). The present analysis pertains to the use of nouns and proforms in the descriptions. I scored the transcriptions for the use of nouns and anaphors (proforms or Ø element) in talking about the Objects and Locations. An example of a description using situational anaphoric reference is "put the red one in". There is no noun antecedent of the proform 'one'. An example of textual reference is "take the red bead and put it in". The proform - 'it' - has a lexical antecedent, the noun 'bead'.

Situational anaphoric reference was much more frequent than textual anaphoric reference at all ages. This is not surprising given the here-and-now nature of the experimental situation. However, there was a progressive increase in textual anaphora with age. The older the subject, the more they tended to use nouns in their discourse.

Anaphoric reference is a mechanism for avoiding redundancy, and all age groups are proficient at using anaphora to streamline their communicative messages. Only the older children, and even more so the adults, tended to use anaphors with lexical antecedents. I conclude that there is evidence for a progression in anaphoric reference from concrete (situational) to abstract (textual), as there is in lexical development earlier in the acquisition of language. This progression occurred even though the use of nouns was not required by the communication demands of the experimental situation. The progression in anaphoric reference points to the fact that the earliest devices for discourse cohesion are based on context rather than text.

* * * * *

DONAHUE, Mavis (University of Illinois at Chicago)

Requesting Strategies of Learning Disabled Children

Recent studies have suggested that the ability to appropriately vary request forms as a function of listener status depends on considerable social as well as linguistic ability (Ervin-Tripp, 1977). This pragmatic skill requires the ability to perceive critical listener differences and understand their implications as well as a repertoire of semantic and syntactic strategies for appropriately varying request forms. However, there have been few attempts to examine the relative contributions of linguistic ability and social knowledge to various pragmatic skills. In light of increasing evidence that learning disabled children experience difficulty in both language development (Wiig & Semel, 1976) and social adjustment (Bryan & Bryan, 1978), an examination of the requesting strategies of these children affords the opportunity to explore the relations between linguistic ability, social knowledge, and pragmatic development. It was hypothesized in this study that, compared to normally achieving children, LD children are less able to take listener characteristics into account and make appropriate speech adjustments.

Subjects were 33 LD children in grades 2, 4 and 6 and an equal number of non-disabled children matched for sex and grade. Each child was asked to pretend that he/she needed 4 newspapers for a school project and to convince each of 4 imaginary listeners to donate their newspapers. The listeners varied on the dimensions of power and intimacy, i.e., the child's father (+ power, + intimacy), a priest (+ power, - intimacy), a same-sex best friend (- power, + intimacy) and a same-sex "new kid" (- power, - intimacy). The semantic-syntactic form of the actual request was assigned a score representing degree of politeness, using a scale derived from adults' paired-comparison judgments of 18 request forms. Remarks offering support for the requests were assigned to 1 of 5 appeal types which varied along a dimension of listener perspective-taking.

Surprisingly, results indicate that LD children's requests exhibited more variation as a function of listener, but in apparently inappropriate ways. Compared to control children, LD boys produced less polite requests to powerful listeners; conversely, LD girls produced more polite requests to peers. These findings suggest that LD children differ from normal children in the understanding of the implications of varying social features. LD children did not differ from normal children in the variety of request forms produced, or in the total number of persuasive appeals used. However, LD boys produced a smaller range of appeal types than non-disabled boys, as well as fewer appeals to the self-interest of the listener, fewer appeals to the relationship between speaker and listener, and fewer appeals which were tailored to a specific listener.

These findings suggest that LD children's requesting strategies more clearly reflect their deficits in social knowledge than their impairments in linguistic structure.

* * * * *

"At last! SPEAK ENGLISH! *is what our ESL teachers have been waiting for. It presents lifeskills information in a logical sequence of English language skills. It combines practice in listening, talking, reading and writing. My teachers like it and my students love it. Send us more."*

Sherry Royce
Director, Adult Education
Lancaster-Lebanon I.U. 13

UNIQUE CONTENT AND APPROACH

- Eclectic combination of situational, notional/functional, and grammatical approaches
- Realistic identification of structural and functional objectives for each lesson
- Competency-based "survival" ESL topics, relevant to adult students
- Necessary stress on oral communication, related to each student's own life
- Essential emphasis on content, not form; on communication, not drills

SPEAK ENGLISH! Text One - Students learn to: use the telephone and public transportation, read traffic signs and newspaper ads, shop for food and housing, function in social situations. Offers cultural insights into name systems, TV advertising, U.S. customs. An impressive beginning for all ESL students.
Now Available! **650-6 (1811)** **$3.95**

SPEAK ENGLISH! Workbook One—Reinforcement and extension of functions and structures introduced in text, plus phonological practice. Students *practice* skills and structures, applying what's been learned to develop *new* language competencies. Crossword/number puzzles. "find the word" games...
Just Published! **651-4 (1812)** **$3.95**

SPEAK ENGLISH! Basic Beginner Book - Especially for the nonliterate adult. Students learn practical language functions and structures in everyday contexts. Includes prereading, reading, and basic writing skills. A *vital* preparation for beginning English instruction.
Just Published! **652-2 (1801)** **$3.95**

Forthcoming Complements . . .

Read English! Book One—reading skills development to complement level one of *Speak English!* or any other ESL series—including *Orientation in American English.* Short topical passages emphasize both reading for pleasure and functional reading such as schedules, forms, directions, etc.
Just Published! **675-1 (1818)** **$4.95**

WRITE ENGLISH! Book One—composition skills development to complement *Speak English!* and *OAE.* Varied exercises such as "Number the Pictures" stress both organization and sentence/paragraph construction. Learning experiences outside the classroom are included.
October 1980 **684-0 (1819)** **$4.95**

Please send me a free "preview sample" of SPEAK ENGLISH! Text One.

NAME

SCHOOL

ADDRESS

CITY STATE ZIP

IML SR PUBLISHERS
The Language People
Institute of Modern Languages, Inc.
2622 Pittman Drive · Silver Spring, Md. 20910 · (301) 565-2580

DONAHUE, Mavis, BRYAN, Tanis, and PEARL, Ruth (University of Illinois at Chicago)

Conversational Strategies of Learning Disabled Children

Recent studies have suggested that language-impaired children have less opportunity for language development because they may be less conversationally assertive than normal children (Watson, 1977; Fey et al., 1978). A series of studies by the authors has found that learning disabled children's conversational strategies depend on how much conversational support is provided in the social context. In conversations where clear turn-yielding signals or "first pair-parts" (Sacks, Schegloff & Jefferson, 1974) are present, learning disabled children appear to be equally or even more responsive than normal children. However, in situations which call for the child to initiate an exchange or to actively participate, LD children are more likely to minimally fulfill or even evade their conversational responsibilities. However, it is not clear whether LD children play this unassertive role because of their awareness of their lower social status (Bryan & Bryan, 1978) or because of their deficits in linguistic structure (Wiig & Semel, 1976). The purpose of this study was to examine LD children's ability to initiate and maintain a conversation with a peer when placed in a socially dominant position, i.e., when playing the role of a "talk-show host."

Subjects were 24 school-identified LD children in grades 2, 3 and 4 and an equal number of normally achieving children matched for grade and sex. Each subject was asked to play the role of a talk-show host and to interview his/her guest, a same-sex classmate, about favorite movies and television shows. The children's communicative intentions were coded according to a system similar to Dore (1977). In addition, the contingency of each conversational turn to the preceding turn was coded.

Preliminary results indicate that LD children differed from normal children in their strategies for requesting information from their guests, i.e., LD children asked fewer open-ended questions (e.g., "Why did you like Star Wars so much?"), and fewer WH-questions soliciting specific information (e.g., "Who's your favorite movie star?"). Thus, their attempts to initiate and maintain a conversational topic appeared to rely on yes-no questions (e.g., "Do you like Mork & Mindy?") In addition, LD girls were less likely than non-disabled girls to "rescue" a guest who was unable to think of a response by paraphrasing the question.

These results suggest that LD children are less skilled at initiating and maintaining a conversation with a peer even when playing the dominant role in the interaction. Results will be discussed in terms of the impact of deficits in linguistic structure and social adjustment on successful conversational interaction.

* * * * *

DOYLE, Anna-Beth, SUFRATEGUI, Charo, and BORBOUDAKIS, Irene (Concordia University)

Preschoolers' Verbal and Non-Verbal Social Behavior to Native and Non-Native Listeners.

Several studies have investigated children's linguistic adjustments to the age (Shatz & Gelman, 1973), language proficiency (Pinard & Genessee, 1978; Garvey & Bendebba, 1974) and other characteristics of their interlocuters (Martsos, 1973). However, existent research does not elucidate the broader issue of whether preschoolers adapt other aspects of their social behavior, both verbal and nonverbal, to the linguistic features of their listeners. This study was designed to explore differences in verbal and non-verbal social behavior of children when interacting with a peer speaking their own language vs. with a speaker of another language. An attempt was also made in this study to establish whether there was a relationship between change in verbal and non-verbal social behavior and the listener's linguistic fluency in the language of interaction.

Thirty preschool children, native speakers of French or English, attending daycare centres where their native language was spoken were the speakers. Listeners were also preschool-age native-speakers of French or English attending the same daycare centres, but in their second-language. The language of the teachers and of the majority of the children was not the same as the listeners' native language.

Speakers were videotaped twice for twenty minutes while in a dyadic free play situation, once with a peer of his home language and once with a peer of the other language group. Speakers and listeners were equated on age, sex, IQ, and length of attendance at the centre.

Results indicated that both verbal and non-verbal interaction decreased with non-native listeners. Fluency of the listener in the language of interaction accounted for a small part of the variance in degree of adaptation. Factors other than language fluency which influence social interaction and language adaptation between different linguistic groups are discussed.

* * * * *

EDWARDS, Mary Louise (Syracuse University)

The Use of "Favorite Sounds" by Children with Phonological Disorders

In the past ten years, several researchers, such as Leonard (1973) and Lorentz (1974), have argued that we need many explicit accounts of deviant phonologies in order to increase our understanding of the nature of disordered phonological systems and to construct a theory of abnormal

phonology. A number of hypotheses have been put forward (e.g., by Oller 1973, Compton 1975, and Ingram 1976) regarding the nature of deviant phonology. Most of these hypotheses concern the use of phonological processes. For instance, it has been claimed that phonological processes in phonologically deviant children are generally regular and systematic and similar to those found in normal phonological development, although some may be uncommon. However, Ingram (1976) also notes that one pattern which appears in "isolated cases" is a tendency to overuse some articulation that has been developed. According to Ingram, this suggests that the child is trying to compensate for his or her difficulties by using a familiar sound. This type of sound preference, which has also been observed in normal phonological development, has been discussed by Farwell (1977) as a "favorite sounds" strategy.

The purpose of the present paper is to provide evidence which illustrates the use of favorite sounds or the overuse of an articulation by children with phonological disorders. Data are presented from 10 phonologically disordered children between the ages of 3;10 and 5;3. These children have multiple articulation errors and low intelligibility but are otherwise developing normally. The data consist of phonetic transcriptions of isolated words and short phrases, elicited primarily by means of a picture-naming task, although some delayed imitation was also used. Three of the children in this study used velars as favorite sounds, substituting them for numerous other sounds in various word positions. For example, one child had [ˈfɛgɹ̩] for feather and [æɹ̝ k] for at, and another child had [ˈkʌkon] for telephone. Similarly, two children overused laterals. Other favorite sounds were /n/, /h/, /j/, /w/, and /d/, each overused by one child.

This study contributes significantly to our growing body of knowledge regarding deviant phonology and should therefore be of value as we attempt to construct a theory of abnormal child phonology. It also has several implications for future research. First, research concerning deviant phonology should not focus entirely on the use of phonological processes but should also look for evidence of strategies, such as the use of favorite sounds. Second, future research should attempt to discover how patterns like the one discussed here develop. For example, does the use of a favorite sound develop through the overgeneralization of a phonetically motivated 'natural' phonological process? Finally, research should begin to investigate the question of how such patterns can best be eliminated in therapy.

* * * * *

EILERS, Rebecca E., GAVIN, William J.,and OLLER, D. Kimbrough (University of Miami)

Cross-Linguistic Studies of Infant Speech Perception: The Role of Linguistic Experience

Over the past two years we have been following the productive and perceptual phonological development of a group of infants from English- and Spanish-speaking homes. The perceptual data to be reported here were collected in a group of studies conducted when the infants were 6-9 months old. One purpose of these studies is to begin a concrete assessment of the effects of language listening experience on infant abilities to discriminate among speech sounds. The studies indicate that while all normal infants have remarkable (and presumably innate) speech discrimination skills, the effects of specific language experience on level of discriminatory performance are far from negligible.

All infants were tested on a variety of minimally paired English and Spanish speech contrasts using the VRISD (Visually Reinforced Infant Speech Discrimination) paradigm. In this paradigm infants are taught to turn their heads in order to view an animated toy when a change in a repeating background syllable is detected. Each infant was tested with 30 to 40 trials (depending on the particular study) half of which were control trials. By comparing head turn performance on any contrast to a statistical model of random performance, evidence of discrimination was evaluated. In addition, for all contrasts performance of Spanish-learning infants was compared to performance of English-learning infants. It was hypothesized that for a given contrast, performance would be better for the infant group whose language contained the contrast. No difference in performance was expected for neutral contrasts or contrasts which did not occur in either language.

Results indicate that both Spanish and English-learning infants did provide evidence of discrimination of most contrasts. Both groups failed on the English [æ̃n] - [æ̃ m] contrast. In addition, English learning infants failed to provide evidence of discrimination of the Spanish-tap-trill distinction. More importantly, however, for several of the contrasts, English and Spanish-learning babies differed in the extent of their discriminatory performance. Spanish-learning infants discriminated [a ɾ a] - [ará] and the Czech contrast significantly better than the English-learning babies. Vowel contrasts, though neutral (present in both languages) or native to English did not yield language experience effects.

Discussion will present a pragmatic-interactive model of infant speech perception which includes a language listening experience factor. Evidence concerning the role of bilingualism will also be discussed.

* * * * *

ERREICH, Anne (The Children's Hospital Medical Center)

"Why you won't play with me?" : Non-Inversion Errors in Wh-Questions

It has been observed (Brown, Cazden & Bellugi, 1969; Klima & Bellugi, 1966; Labov & Labov, 1976; Kuczaj & Brannick, 1976) that in acquiring wh-questions, children produce non-inversion errors such as when daddy will come home?, where you are going?, etc. This failure to invert subject NP and auxiliary verb in wh-questions is claimed to occur at the same time that children are using inversion correctly in yes-no questions. Therefore, it has been concluded that, having acquired a subject-auxiliary inversion rule in yes-no questions, children do not for some time extend that rule to wh-questions. In contrast, Ingram & Tyack (1979) found that non-inversion errors occur only infrequently in children's speech, and thus they conclude that there is no evidence for an acquisition stage characterized by inversion in yes-no questions, but not in wh-questions.

The present study analyzes the yes-no and wh-questions of 18 children, aged 2;5 to 3;0, whose parents all speak Standard English. The purpose is to establish the frequency of non-inversion errors among children, and to determine the acquisition sequence for inversion in yes-no and wh-questions. The experiment consists of an elicitation task which is designed to collect data on the inversion patterns in children's questions. Two findings are as follows:

First, contrary to Ingram & Tyack's (1979) findings, non-inversion errors do appear to be characteristic in the acquisition of wh-questions. Sixteen out of eighteen children showed productive use of the non-inversion pattern in wh-questions. It is argued that these data more accurately reflect children's productions than Ingram & Tyack's findings.

Second, as to the order of acquisition of inversion in yes-no and wh-questions, data from only one child support the generally held view that children use inversion productively in yes-no questions before wh-questions. On the contrary, six children produced inverted wh-questions at a time when they were producing only uninverted yes-no questions. Of the remaining children, ten showed evidence of an optional inversion rule in both yes-no and wh-questions, and one child appeared to already have the correct form of the rule in both question types. Therefore, previous claims that inversion is acquired in yes-no questions first, and only later extended to wh-questions are not borne out by these findings.

The findings raise two questions. First, what accounts for the characteristic non-inversion errors in wh-questions? It is proposed that the errors are due to the overextension of the non-inversion pattern from yes-no questions to wh-questions; non-inversion is correct in yes-no questions but results in incorrectly uninverted wh-questions. Second, why should inversion be productive in wh-questions before yes-no questions? These data as well as others (Labov & Labov, 1976) indicate that at a very early stage, before children use inversion productively in

either yes-no or wh-questions, they do produce correctly inverted wh-question routines such as what's NP? or where's NP? If such inverted wh-question routines are part of children's repertoires before they have a productive inversion rule, it seems reasonable to suggest that children would acquire inversion first in wh-questions because they are exemplars of a sentence type already known to them.

* * * * *

ESCAMILLA, Manuel, and COGBURN-ESCAMILLA, Kathy (California State University, Fullerton)

A Comparison of English and Spanish Syntactic Language Development in Young Spanish Speaking Mexican-Americans in Maintenance Bilingual-Bicultural and Pull-Out ESL Programs

The study posed the following research questions: 1. At what rate is English acquired in a maintenance bilingual-bicultural program, as compared to a pull-out ESL program? 2. Do syntactic skills in Spanish facilitate the acquisition of English language skills? 3. Does the development of skills in two languages simultaneously, as in a maintenance bilingual program, affect the English language development of the Spanish speaking Mexican-American child? 4. Does the development of skills in two languages simultaneously, as in a maintenance bilingual-bicultural program, affect the Spanish language development of the Spanish speaking Mexican-American child? 5. Does a pull-out program affect the Spanish language development of the Spanish speaking Mexican American child? 6. Does a pull-out ESL program affect the English language development of the Spanish speaking Mexican-American child?

To collect data the BSM (Bilingual Syntax Measure), Spanish and English versions was given to 100 first grade Mexican-American children in four elementary schools in West Los Angeles County. 50 of these children were involved in pull-out ESL programs, and 50 were involved in maintenance bilingual programs. All students were pre-tested with the BSM in the fall of 1977, and post-tested in the spring of 1978. A Home Survey Questionnaire was developed to obtain demographic information about home language use. T tests were applied to the data to discover statistically significant differences.

The results and major conclusions were as follows: 1. Learning two languages simultaneously as in a maintenance bilingual-bicultural program does not retard the development of language skills in English. 2. Exposure to one type of program (i.e. pull-out ESL) does not facilitate English language development more than another program. 3. Exposure to one type of program (i.e. Maintenance bilingual) does not facilitate Spanish language development more than another program. 4. Proficiency in one language facilitates the acquisition of a second language.

The most significant finding in the study was that the students in both programs who were the most proficient in Spanish made the greatest English language gains, regardless of their school program. This would imply a positive relation between first language proficiency and second language acquisition, and therefore make a strong case for school programs that develop mother tongue proficiency before introducing second language instruction. The size and scope of the study, however, make these conclusions tentative at best. Therefore, the strongest implication is that more research should be conducted to further study the influence of first language proficiency on second language acquisition.

* * * * *

FOWLER, A., GELMAN, R., and GLEITMAN, L. (University of Pennsylvania)

A Comparison of Normal and Retardate Language Equated on MLU

In an ongoing study of the nature of the language of mental retardates, the language of four moderately retarded Downs Syndrome adolescents, aged 11 to 13 with a mental age of 6 years, was compared to that of four normal children aged 30 to 32 months. The populations were equated on the basis of Mean Length of Utterance allowing a closer analysis than a comparison based upon mental age. In this study the average MLU (in words) for the retardates was 3.10; for the normals it was 3.26. The comparison focused upon the question of differential delay. That is, it was of interest to determine whether retardates make advances in some linguistic domains independent of their competence in others, e.g., whether their acquisition of vocabulary items is affected differently than their acquisition of grammatical inflections.

Syntactic measures included the number of noun phrases and verb phrases per utterance as well as the internal structures of those noun and verb phrases. In addition to determining phrase structure rules, evidence for transformational complexity was sought in the structure of negatives and interrogatives, usage of possessives and adjectives, as well as by the number and kind of complex sentences used. Particular attention was paid to the closed class system as indexed by the word:morpheme ratio, usage in obligatory context of Brown's 14 grammatical morphemes, and acquisition of items in closed class categories such as pronouns, prepositions and modals. Vocabulary measures included the ratio of vocabulary types to the total number of words used, as well as the comprehension of relational terms. As a measure of semantic complexity, a Bloom-type analysis was performed to determine the semantic relations expressed as well as the specific means of expression. All of the above analyses were based primarily upon spontaneous speech samples gathered from structured play situations and supported with data from comprehension and imitation tasks.

For all of the analyses performed, the MLU turned out to be a remarkably informative measure of linguistic competence -- it predicted virtually identical levels in the domains investigated for both the normals and the retardates. That is, the semantic relations produced by the retardates were relatively no more complex than the grammatical inflections used to express them. Furthermore, there was no evidence of structural "anomalies" in the language of either populations. We are left then with two curiosities to explain: 1) the gross discrepancy between language level and mental age, and 2) the consistent lack of effect of such an extreme stretching-out of the acquisition process. Research is continuing on a larger and more diverse sample of retardates to investigate the language over a broader span of IQ and chronological age. Other linguistic domains such as pragmatics and discourse are under investigation, and more refined vocabulary and semantic measures are being developed. In addition, growth measures are being taken on the retardates over a period of several years.

* * * * *

FREEDMAN, Aviva (Carleton University)

Modal Differences in Student Writing: Rhetorical Control

This paper is based on two separate studies: one analysing differences in performance of grade 7 and 8 students writing in two different modes (narrative and argumentative) and one analysing the development in the writing of argumentation between grade 8 and grade 12.

In the first experiment, five hundred grade 7 and 8 students (representing the complete classes of those teachers participating in a holistic scoring experiment) were asked to write two essays each: one narrative and one argumentative. In the second experiment, a 10% random sample of the entire grade 8 and grade 12 student population of a local board (representing some 5,000 students) were asked to write an argumentative piece on the same topic.

A 10% subsample of the students participating in the first experiment was randomly selected, and their papers in each mode were analysed according to their realization of the rhetorical structure of that mode; the narrative according to a scheme based on the analysis of the grammar of story structure described by Stein and Gless (An Analysis of Story Comprehension in Elementary School Children, in R.O. Freedle (Ed.), New Directions in Discourse Processing, Vol. 2, Norwood, N.J.: Ablex, 1979), and the argumentative according to a scheme, like that used by Bereiter and Scardamalia (From Conversation to Composition, in R. Glaser (Ed.) Advances in Instructional Psychology, Vol. 2, Hillsdale, N.J.: Erlbaum, in press) and drawn from classical descriptions of argumentative form (from Aristotle, to Corbett, to Baker) and inductive analyses of

contemporary argumentation (in editorials, etc.)

Students in grade 7 and 8 showed themselves to have assimilated the grammar of story structure; however, they showed no such control of the rhetorical argumentative pattern. The grade 12 pieces approximated more nearly the classic form, but still not to the degree that the grade 7 and 8 students had mastered story structure.

Possible reasons for the disparity in achievement between narrative and argumentation are that, culturally, children are far more exposed to narratives than arguments; story structure in the written mode is essentially the same as that in the oral, while argumentative structure in writing is radically different from informal oral argumentation; argumentation involves the use of cognitive processes that mature later.

* * * * *

GARVEY, Catherine, and GREAUD, Valerie (Johns Hopkins University)

Factors Influencing the Form of Continued Reference in Children's Talk

Interest in the operation of anaphoric processes has recently been expanded from sentential to discourse relations, though there has been little work on these processes in children's conversations. The task for young conversationalists is not only to identify uniquely a discourse referent (as Keenan and Schieffelin, 1976, have shown), but also to maintain reference to an event or entity as long as it participates in the discourse. For children, and perhaps for adults as well, a tendency toward reduction of redundancy by such means as substitution or ellipsis may come into conflict with requirements for unambiguous, continued mention of a referent. This study examined the linguistic forms of reference items in spontaneous conversational episodes produced by 12 pairs of three and 12 pairs of five year old, middle class children in a laboratory playroom. Following reliable identification of topical episode boundaries, the initial and subsequent forms of nominal reference for each referent (r_1, r_2..r_n) were coded. Situational information (e.g., physical presence/absence of referent object; partner attention/acknowledgement of reference act) was taken from the videotaped records.

Topic initial referent form was most frequently specific (rather than unique or generic) and of these, 74% were definite. Subsequent mention of the referent was generally reduced, and the preferred linguistic forms of continued reference were pronominal (56%) and demonstrative (21%). There were no significant age differences on these measures. Failure to reduce referent form from an initial full form or restoration of a reduced form to a full form were found to be associated with six discoursal and situational factors. These factors differentially influenced reference form in the two age groups. Factors influencing

nonreduction or restoration of full referent form were of two types. The first reflected difficulty in achieving consensus on referent identity and included lack of partner acknowledgement or failure to agree on the referring term. The second type reflected the status of the referent field, and included four factors: physical absence of referent object; addition of a second or third referent to the discourse, addition of new information to the referent, and the pretend status of the referent. The number of clauses in the episode, however, did not influence referent form. The results suggest the importance of extra-linguistic determinants of reference form in connected discourse.

* * * * *

GENESEE, Fred (McGill University)

The Social Psychological Significance of Code Switching for Children

A growing number of theories and experimental studies have asserted the social psychological significance of code switching among adults, for example, as a marker of ethnic identity or interpersonal attraction. Although a number of ethnographic studies have described the code switching abilities and strategies of bilingual children, experimental investigations of the social developmental aspects of this linguistic behavior are lacking. The present paper will report on the results of a series of experiments undertaken with 11 year old children to investigate their perceptions and causal attributions of code switching by adult interlocutors as a function of 1) the role status of each interlocutor (dominant/non-dominant), 2) the sociocultural status of the subjects and of the languages spoken by the interlocutors (high/low prestige), and 3) when the switch occurs in the conversation. The children listened to simulated, tape-recorded conversations depicting 4 different patterns of code switching by a salesman and/or customer in a bilingual setting. The subjects indicated their perceptions of the interlocutors after each of the 4 speech acts constituting each conversation using a series of rating scales and open-ended questions presented in an accompanying questionnaire. Preliminary results indicate that while role-related social norms have a significant influence on the children's reactions, this is most evident and unequivocal when the role and sociocultural status of the speaker are correlated. The results also indicate that the basis of interpretation of code switching in this situation does not change as the discourse develops, in contrast with some findings using the same methodology with adolescents. Results of the children's responses will be examined and discussed in terms of social attribution research which indicates that there is a tendency among adults to make causal attributions that reflect group-serving biases; this tendency will be contrasted with the expression of attributions based on interpersonal accommodation which considers individual motivations and outcomes. Finally, suggestions for modifying the procedure to be useful with even younger children will be made.

* * * * *

GERSTEN, Elayne (Pre-Schooler's Workshop)

The Acquisition of Language in Pre-School Autistic Children

While there is evidence that the level of language functioning in the young autistic child may be the most reliable indicator of severity and a valid prognosticator of future gains, most research has dealt only with observed language behavior and gives little consideration to the process of its development. This study focuses on the differentiation of language skills and the ways in which they are acquired in a group of preschool-age autistic children, examining such issues as (a) delay, deviance and variation; (b) differing rates and styles of learning; (c) developmental indices; (d) implications for prognosis and treatment.

Data was collected over a period of two years from 18 children (mean age 3 years 8 months) who were enrolled in a community-based therapeutic nursery. All of the children had a diagnosis of infantile autism, and regardless of their level of language development, showed almost continuous psychotic interruption and impaired communication.

A rating scale was developed and was administered to each child over a period of 4 thirty-minute sessions. The degree of language impairment was determined based upon each child's responses. It was from this initial evaluation period that a prescriptive plan for each child was designed and implemented in individual sessions in the classroom and at home.

From the results of the rating scale, a 10-point continuum emerged. Each point on the continuum is defined in behavioral terms (i.e., communicative intent, deviant behaviors, imitative ability, and complexity of language usage) and is hypothesized to represent varying degrees of developmental impairment. Re-evaluation of each child and subsequent reclassification on the continuum took place at 4 month intervals during each child's initial 2 years in the program.

This research appears to have clinical validity and demonstrates a variety of rate and degree of progress as defined operationally. Included in the findings are:

1. Autistic children acquire language in the same presumed sequential order as do normals. However, regardless of degree of impairment, psychotic interruptions prevail to set them apart at any age.
2. Autistic children acquire language skills in different degrees and at different rates from one another.
3. The different profiles of disordered development suggest the possibility of from 2 to 6 subgroups.
4. There are nonlinguistic and linguistic behaviors that may be correlated to the success of outcome.
5. A definite relationship was noted between the level of performance at onset of treatment and the level at the end of 2 years.

6. There was no evidence to indicate a common specific level of language acquisition for autistic children.
7. There was no evidence of correlation between the severity of language deficit and responsiveness to language therapy.
8. The gains subjects made as compared with that in the literature suggest that early intervention does indeed foster and enhance language development skills.

* * * * *

GORDON, David Paul, STRAGE, Amy, and BUDWIG, Nancy (University of California, Berkeley)

Children's Requests to Unfamiliar Adults: Form, Social Function, Age Variation

81 elementary students, grades K-5, at middle to upper-middle class public schools, participated in an art project supervised by E_1. During the project subjects were sent to obtain 1) new marking pens to replace broken ones, and, 2) at the conclusions of the project, a letter to parents, from two unfamiliar adults, E_2 and E_3, engaged in conversation at a table across the room. The situation required the child to interrupt E_2 and E_3 or wait until acknowledged, and then convey a request for a marking pen or a letter. During the project each subject made from one to three such requests, which were classified as Statement Requests (SR) and Interrogative Requests (IR). There were no Imperative Requests. SR's fell into four subcategories which accounted for 88% of all SR's: Need ("I need..."); Cause ("...is broken/doesn't work."); Elliptical Goal ("The letter." ; "A blue marking pen."); External Motivation ("She sent me to..."; "I'm supposed to..."); Over 90% of the IR's were accounted for by four categories: Possession ("Do you have...?"); Existence ("Are there any?"; "Is there...?"); Permission ("Can/May I have...?"); Location ("Where is the...?"). The distribution of request forms over these categories showed a significant change taking place between the 2nd and 3rd grades in the types of forms used. For K-2 children (N=40):

1) There were almost three times as many SR's as IR's.
2) Almost 50% of all requests were Need statements.
3) Only a single statement of External Motivation occurred.
4) Possession and Existence questions were rare.
5) Almost all requests were carried out in a one sentence, single clause utterance that clearly fell into a single category.

In marked contrast, for children in grades 3-5 (N=41):

6) There were approximately equal numbers of SR's and IR's.
7) Fewer than 15% of requests were Need statements.
8) External Motivation statements were frequent.

9) Many complex requests of two or more sentences or clauses were produced. Multiple clauses tied together SR and IR subcategories, and provided elaborated explanations.
10) 50% of IR's were Possession or Existence questions.

The differences in 1-10 do not arise because of constraints on grammatical or semantic abilities. They reflect the child's social knowledge and sense of contextual appropriateness. The dimension of change is not simply marked politeness. Younger children produce a high number of Need statements. The reduction of these forms in older children is matched by an increase in Possession and Existence questions, which are conventional forms (and are used as such, since our subjects know the answer in advance), but not marked for politeness (as "May I...?" or requests with "please" are). Similarly, our younger subjects were capable of producing utterances of two or more sentences or clauses, but rarely did in this context. Our older subjects who did were being more polite, but not through the use of marked politeness conventions. They were displaying a different level of social understanding. We discuss this change in social understanding through applying the differences in 1-10 to notions of speech act felicity conditions, speech conventions, social concepts of behavioral justification, and the child's view of his/her relation to adults.

* * * * *

GRAVES, Zoe (City University of New York)

The Effect of Context on Mother-Child Interaction

Much of the literature on mother-child interaction has been based on the observation of so-called "naturalistic" behaviors. Samples of behavior used for these studies are usually collected by an observer with a video or tape recorder and/or checklist for later analysis, and it is generally assumed that what is being captured is a sample of "typical" interactions. The observer and his equipment are considered a neutral third eye in the interactive setting.

The possible structuring effect of the observer's presence on the nature of mother-child interaction has been the focus of the present study. It was hypothesized that the presence of the investigator defined a special context in which particular behaviors might be displayed for the benefit of the observer. Interactions of ten white middle-class and ten white lower class mothers with their two-year old children were videotaped under two conditions: 1) when subjects were aware of the observation, and 2) when they were not aware of being observed. Two-by-two analyses of variance were conducted comparing dyads across socioeconomic group and across condition. Data were analyzed hierarchically at three different levels: 1) speech form; 2) speech function; and 3) speech within interactional context.

Striking differences were found for the middle class mothers and children across the observed/unobserved condition. When these mothers were aware of being observed, there were significant increases in behaviors such as speech production, gesturing, initiation of and response to interactional game sequences, and production of certain functional forms like indirect directives, test questions and repetitions. The MLU of the middle class mothers was also found to decrease in the observed condition, as did the production of negative feedback. Thus these mothers displayed for the investigators behaviors showing them to be good teachers and active participants in interactions with alert, skilled children.

The lower class mothers, on the other hand showed fewer changes in their behaviors across the observed/unobserved condition than did the middle class mothers. It was of interest to note that in the unobserved condition the middle and lower class mothers were very similar in interactions with their children. Often both sets of mothers were inattentive and distracted, and engaged in minimal verbal and non-verbal interaction with their children. However, in the observed condition, the behavior of the middle class mothers changed dramatically, so that the picture presented to the observer was quite different from what it might be in other contexts.

Researchers in child language acquisition and socialization need to consider the possibility that some of the findings thought to be generalizable across contexts are, in fact representative of a specialized performance in a context, geared for the investigative audience.

* * * * *

GRAYBEAL, Carolyn M. (Boston University)

Memory for Stories in Language-Impaired Children

Memory deficits in language-impaired children, though long recognized, have been studied almost entirely in short-term memory tasks requiring verbatim recall. However, verbatim recall is required relatively infrequently in daily situations; more often the child must demonstrate "memory for the gist", i.e., recall the content of what he hears. Memory for content has been studied in normal children in the context of story recall (see Stein & Glenn, 1979; Mandler & Johnson, 1977). Accuracy of recall has been found to increase with age. Further, not all parts of the story are equally well recalled. On the basis of their story grammar, Mandler & Johnson have shown that elementary age children focus their recall on settings, beginnings, and outcomes, while exhibiting poor recall of internal reactions. Finally, children also add information during recall not present in the original stories. Story recall has not been studied in children identified as language-impaired. The

present study addresses this need by exploring the following questions: 1. Do language-impaired children exhibit deficits in "memory for the gist" of material which is within their lexical and syntactic grasp?, 2. Does their focus of recall differ from that of normal children? 3. Do they have difficulty recalling story information in the proper order?

Two groups of twelve children, 7 to 9 years, served as subjects. The language-impaired children exhibited specific language difficulties not due to other disabilities. They were matched on age and sex with children performing satisfactorily in school. All subjects demonstrated average nonverbal IQ. Four stories (two practice, two test) were constructed according to the Mandler & Johnson grammar. Lexical items were all found in the speaking vocabularies of kindergarten children according to norms established by Murphy (1957). Each child was pretested for comprehension of the grammatical structures used, and on his ability to recall the longest sentences in the stories. This insured that individual sentences were within the short-term memory limitations of the impaired subjects. Following a practice session, the two test stories were read, and recall was requested immediately after each story. The content of the recall protocols was analyzed into propositions and scored in two ways. Each proposition was first classified as essentially accurate, partially correct, or as consisting of added information. Then the accurate propositions were rescored in terms of the plot elements they represented.

The results showed that the groups differed primarily in terms of the amount of accurate recall, with the language-impaired group recalling considerably less about the stories. A follow-up study comparing three language-impaired children with three normal children matched on short-term memory for sentences again revealed poorer recall by the impaired children. The groups did not differ in their recall of the various plot elements nor in the ordering of story information.

These findings indicate that language-impaired children do exhibit deficits in "memory for the gist" related to the amount of accurate recall, which cannot be attributed to lexical or syntactic deficits. Likewise, their difficulty appears not to be due to short-term memory limitations affecting individual sentences. Other possible sources of these memory deficits are discussed.

* * * * *

HAFITZ, Jeremie, GARTNER, Barbara, and BLOOM, Lois (Teacher's College, Columbia University)

Giving Complements When You're Two: The Acquisition of Complementation in Complex Sentences

This study reports the results of a longitudinal investigation of the acquisition of complementation in four children's development of complex sentences over the period 24 to 36 months of age. The results consist of an account of the developmental interaction between the occurrence of a constituent verb phrase with or without an expressed complementizer, and four semantic categories of complement-taking matrix verbs: Notice, Epistemic, Volition and Communication.

The most frequent semantic categories were Volition and Notice; Epistemic and Communication verbs increased developmentally but remained proportionately less frequent. However, there was a different distribution in the use of these categories of verbs as matrix verbs in complement constructions. Initially, matrix verbs with constituent verb phrases were almost entirely Volitional. Over time, there was an increase in the use of other verbs, particularly Notice and Epistemic verbs, with complement constructions, so that by three years of age Volition remained the most frequent matrix verb category in complement constructions for only one child.

Volition verbs were used most frequently with complementizers; the developmental sequence in the use of complement constructions with expressed complementizers was Volition < Epistemic < Notice < Communication. Volition verbs occurred exclusively with the complementizer to; the other categories occurred principally with wh- complementizers and, in later samples, Notice and Communication verbs with the complementizer if.

The difference between the occurrence and non-occurrence of a complementizer was analyzed for those utterances with a constituent verb phrase in each category. For Notice verbs there was a developmental reversal in the direction of difference: Notice verbs occurred more often without a complementizer in the early samples and more often with a complementizer in the later samples. This reversal was also noted for two of the four children in the category of Volition; the other two children used constituent verb phrases predominantly with complementizers across all samples. There was not a linear progression for Epistemic and Communication verbs, for which there were differences in both directions. However, when the utterances were analyzed at the level of the individual verbs, these differences were seen to be verb specific and related to the sequence in which the individual children learned to use the particular verbs in these categories. While there were several verbs in each category, there were only a few verbs that accounted for a major proportion of usage: see and look in Notice; think and know in Epistemic; tell and say in Communication; and want in Volition. Although these verbs did not emerge in the same sequence, the four children showed striking consistencies in the choice of complementizers and the constituent constructions with which they used the individual verbs.

The results of this study provide evidence that the acquisition of complex sentences with complement structures is verb specific, depending upon the semantics of matrix verbs, rather than the result of a generalized rule of grammar.

* * * * *

HAKUTA, Kenji (Yale University)

The Relationship Between Social, Linguistic and Cognitive Variables in Adult Second Language Learning

Adult working class immigrants constitute a largely neglected population in the study of second language acquisition. Although there are scattered instances of case studies involving adults (e.g., Schumann), and there are several studies utilizing larger samples in other countries (e.g., Dittmar & Klein in Germany; Kline in Australia), there are no studies of $n > 1$ that investigate adult learners in the United States. Aside from theoretical interests, understanding the social and linguistic characteristics of this significant population is essential for various pedagogical goals, such as the formulation of new instruments for the measurement of language proficiency as well as assessment of the ecological validity of existing ones.

The present paper is an interim report on a cross-sectional, longitudinal study of the acquisition of English by adult working class immigrants from Puerto Rico. From each of our current sample of 25 subjects, we have data from two interviews conducted at the first time period, one interview in Spanish and the other in English. During the Spanish interview, the subjects were asked a variety of questions concerning their patterns of language use and their attitudes towards American culture. Such social and attitudinal measures have been hypothesized to correlate with differential ability in English (Schumann). In the English interview, the subjects' ability in the language are assessed through spontaneous speech, elicited stories, and various psycholinguistic tasks. In addition, we have from each subject a measure of their knowledge about American culture (in particular, about Boston), a measure of their vocabulary in Spanish and in English (modified versions of the Peabody Picture Vocabulary Test) and a measure of non-verbal intelligence (Ravens Standard Progressive Matrices).

This paper will report the quantitative relationships between these various social, linguistic and cognitive measures. The primary questions addressed are: (1) How well do the different linguistic measures relate to each other, i.e., is there a single "language factor" that is tapped by all measures? (2) Can interpersonal communication skills be measured independently from language proficiency, as hypothesized by Cummins? (3) How do the social/attitudinal measures and the cognitive measure relate to ability in English?

* * * * *

American Annals of the Deaf

As deaf and hearing-impaired students are being served in a wider range of educational settings, more professional personnel are in need of information published in the *American Annals of the Deaf.*

For more than 125 years the *Annals* has been a basic medium for communicating information related to deafness and the education of deaf persons.

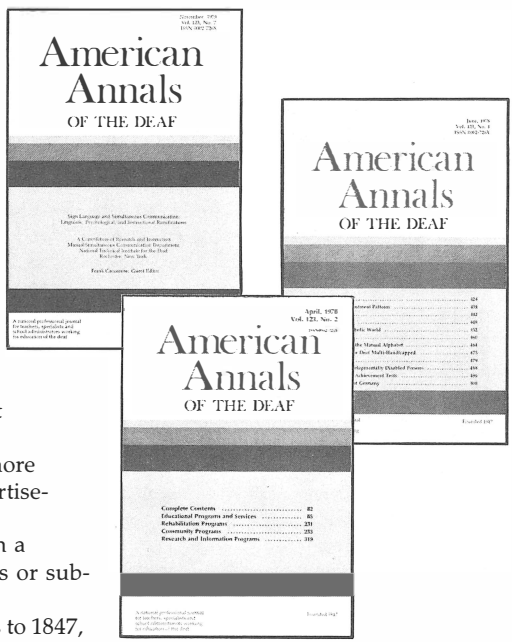
The *Annals* reflects the concerns and issues of the time and publishes relevant articles of merit, regardless of their philosophical orientation.

Subscriptions are offered on a calendar-year (volume) basis only. Regardless of the order date, the subscription is made retroactive to the first issue for that year, and all back issues are supplied.

Current volumes have eight issues, with more than 800 pages of content, exclusive of advertisements.

The April (Reference Issue) is available on a single-copy basis for $6.50 to nonsubscribers or subscribers wishing additional copies.

Persons interested in obtaining back issues to 1847, microfilm or microfiche copy, or reprints in quantity should request information from the *American Annals of the Deaf* at the address listed below.



Subscription rates for the United States and Canada (beginning with the 1979 volume), post-paid, are: 1 year—$17.50; 2 years—$33.00; 3 years—$47.50. Rates for all other countries, post-paid, are: 1 year—$18.50; 2 years—$35.00; 3 years—$50.50. Checks and money orders from all countries other than the United States should be noted as payable in U.S. currency. Checks should be made payable to the *American Annals of the Deaf.*

— —

SUBSCRIPTION ORDER FORM

American Annals of the Deaf

5034 Wisconsin Ave., N.W., Washington, D.C. 20016

Please send _____ (number) subscription(s) to *American Annals of the Deaf* for _____ (years) to begin the calendar year of 19 ____.

_____

(NAME: last, first)

_____

(STREET ADDRESS OR P.O. BOX)

_____

(CITY) (STATE) (ZIP)

Enclosed is: $_____ (Make check or money order payable to *American Annals of the Deaf.* **U.S. dollars only** will be accepted.)

HARDY-BROWN, Karen (University of Colorado, Boulder)

Environmental and Genetic Influence on Individual Differences in the Communicative Development of One-year-old Adopted Children

A full adoption design was used to investigate the separate effects of environment and heredity on individual differences in the communicative development of 50 adopted one-year-old children. In contrast, studies relying exclusively on biologically related parents and children living in the same environment simply do not enable the isolation of important environmental factors from among a host of genetic and genetic-environmental influences contributing to language development.

Measures of communicative performance (both gestural and vocal) were obtained for the children at 12 months of age, including information from standardized tests of mental and motor development, maternal report, and analysis of videotape records of parent and child interacting in feeding, free play, and teaching situations in the home. Behavioral measures of the birth mothers and adoptive parents of the adopted children were collected, and include test data for specific cognitive abilities and a general cognitive ability factor, as well as measures of socioeconomic status and educational achievement of the adoptive parents. Assessments of the adoptive home environment were made, including Caldwell's HOME instrument (1978). The videotape records were analyzed to obtain measures of formal linguistic characteristics of the adoptive mother's speech, as well as other aspects of her communicative style in interaction with the infant.

Factor analysis of the infant communicative measures yielded a first principal factor representing overall communicative competence (both gestural and vocal) which accounted for 29% of the variance. This general factor was included along with individual measures of communicative performance in subsequent analyses. Correlational and multiple regression analyses were used to relate individual differences in infant communicative competence at 12 months to aspects of the adoptive home environment and to characteristics of the birth mother. The results indicate that many of the correlational relationships between birth mother and adopted child were significant at the .05 level, suggesting clear genetic influence on rate of communicative development at one year of age. In particular, general cognitive ability and memory of the birth mother were significantly related to several indices of infant communicative performance. With respect to the home environment, neither cognitive ability nor educational or occupational status of the adoptive parents related significantly to infant communicative performance. However, two measures of maternal behavior as assessed from the videotape records--contingent vocal responsivity to infant vocalization and vocal imitation--were strongly related to infant communicative performance, and were the only environmental variables to relate significantly to overall communicative competence (first principal factor).

While very little other data exist concerning environmental influence on communicative development at one year of age, studies of older infants and children suggest that socioeconomic status, verbal ability, and language teaching behaviors of parents rearing their own biological children all influence rate of communicative or language development. These relationships were not upheld among the adoptive parents and children in this sample. The results of this study lend support to the possibility that genetic similarity between biologically related parents and children may account for some of the associations between child language and home environment as reported in previous investigations.

This project was supported in part by grants from the National Institute of Child Health and Human Development (HD-10333) and the National Science Foundation (BNS-7826204).

* * * * *

HOGAN, Anne, and SEIBERT, Jeffrey M. (University of Miami)

The Emergence of Object Labels in Developmentally Delayed Toddlers: Implications for Intervention and for a Theory of Early Reference

The acquisition of object labels has long been of interest to those who study normally developing children and an area of concern to those who intervene with young handicapped children. Investigators who have studied the emergence of first words have suggested different necessary components and prerequisite experiences to early labels. Nelson, for example, has argued that the development of concepts based on object functions underlies early labeling. Bruner has suggested that labels emerge out of social turn-taking skills and activities which involve indicating gestures and shared attention. Hunt has emphasized the role of vocal imitation in early word acquisition. Our project's theoretical model has attempted to integrate these notions into a comprehensive framework, working from the assumption that all these components represent different facets of a multi-faceted ability. If this assumption is true, integration of the various social and cognitive perspectives is essential for well-informed intervention decisions. Our theoretical model posits that these various component skills can develop independently and that the nature of a child's understanding and use of object labels will reflect which of these skills he has mastered and integrated.

The research to be reported is based on the comprehensive assessment of the social-communication and object-cognition skills of 40 variously developmentally disabled children between 6 and 40 months. The research employs an assessment instrument being developed by the project; the emergence of labels is only one dimension of this instrument, being explored in depth because of its pivotal nature in bridging the transi-

tion to early linguistic competence. Research to date to be reported in this paper reveals several different patterns of label use, consistent with the model's prediction of independently developing component skills. For example, label production appears to precede label comprehension for some children who demonstrate socially influenced actions for objects but lack the social cognitive ability to follow another's direction of gaze. There are limitations to this associative productive ability, however, since the label is produced upon mere presentation of the object but not in response to the question "What's this?" and so serves no intended social function. A related pattern, found consistently across observations, is that children succeed on a receptive label task (which requires the ability to indicate consistently an object in an array of objects when it is labeled by another) only after mastering socially influenced actions and the ability to follow another's direction of gaze. While these observations reveal that these skills are precursors to receptive labels, training studies are needed to supplement such observational data to determine whether they are prerequisites. Therefore, in addition to the observational report, this paper will present the results of a training study. Children have been selected and assigned to one of two experimental groups based on whether they show one or both of the hypothesized prerequisite skills (i.e., socially influenced actions and following another's gaze) while showing no evidence of receptive labels. Both groups are trained on receptive labels and receive no training on the prerequisite skills. The hypothesis under test is that only children with both hypothesized prerequisite skills will acquire receptive labels as a result of training. Preliminary results of the study, currently underway, support the hypothesis. Results of both the observational and experimental research will be discussed in terms of their implications both for effective intervention strategies with the language delayed and for a general theory of early reference.

* * * * *

IMMLER, K. P., LEVIN, Harry (Cornell University), and SNOW, Catherine E. (Harvard University)

Honey, You'll Feel Better Soon: The Sick-Room Social Speech Register

The social nature of speech is reflected in the ways speech changes depending on social context. Precisely what are the social determinants of speech and what are the aspects of speech most responsive to changes in social context have yet to be resolved. One situation likely to call for a special speech register is that of a parent or a doctor talking to a sick child. The purposes of this study are two-fold: 1) to characterize the sick-room speech register, and 2) to see if children who have been hospitalized can identify and use the sick-room speech register while role-playing.

Ten four year old and ten eight year old boys and girls, their parents, and the staff of the Boston Children's Hospital were participants. The speech of children about to undergo a brief operation and that of their parents, in most cases the mother, was taped in their homes prior to hospitalization, in the hospital both shortly before the operation and in the recovery room, and again in their homes. Several tasks were recorded during the home visits: the parent reading to the child, the parent playing a game with the child, and the child role-playing people in a hospital setting.

Preliminary analysis suggests that characteristics of the sick-room social speech register include: a decrease in MLU, and a change both in rate and content of speech.

Comparisons to Baby Talk, another social speech register thought to communicate nurturance and affection, are made. The simplified speech register used when talking to very young children and the speech register used when talking to sick children can be differentiated easily along several dimensions.

* * * * *

JAKUBOWICZ, Celia (Laboratoire de Psychologie Experimentale)

The development of the children's capacity to map surface form and meaning in "if" sentences

In the learning of the covariation between surface forms and meanings, how does the child approach the analyses of the linguistic signal? How does he interpret the nonlinguistic events in his environment? What factors complicate and what factors facilitate the mapping problem?

In order to answer these questions we conducted several experiments on the production and comprehension of "if sentences". Subjects were french children from 3 to 11 years old.

The experimental tasks of comprehension showed that 4 and 5 year olds interpret sentences of the form "if p, q" (i.e. : If I have a penny I'll give it to you) as assertive. They do so by taking in account only the consecutive relationship between the events p and q. The explicit formulation of the alternative in sentences like "if p, q, but if not p, not q" allow the child to become aware of the uncertainty of p.

Later on, the verbal inflections (imperfect and conditional) and later still, the conjunction "if" are used by the child to assign a meaning of uncertainty to p. It is only around the age of 10, 11 that the child can establish the conditional dependency between the truth values of p and q.

In the production task the children as of 3 years produce "if" utterances including counterfactuals. In those experimental situations in which incertitude is made explicit, the children of different ages use utterances differing in form but expressing the same meaning. ("if p, q but if not p, not q" at 4, "if p, q" at 5 and older). In a second experimental situation in which the incertitude must be inferred, we have shown that the same morphosyntactic structure "if p, q" appears in distinct production conditions as a function of age. For the youngest children (4-5 years) this structure is found in those experimental conditions in which the uncertainty aspect is not introduced: it serves basically to express a relation of regularity between 2 events (p and q). This structure is produced by older children only in the cases where there is a uncertainty or hypothetical aspect.

On the basis of our results, we can suggest the following tentative conclusions concerning the relationship between surface forms and meaning.

1) The analysis of a given linguistic utterance made by a child depends on the input and varies with the age of the child. A complex structure is initially interpreted on the basis of the word order without taking the morphosyntax into consideration. This restriction is partially attenuated by the presence of semantically marked grammatical morphemes or of reduncant semantic information contained in the utterance. This finding concerning the clear marking of underlying relations is reminiscent of finding by other investigators (cf. Slobin 1973...)

2) The same surface form can acquire different semantic values as a function of age. Inversely, 2 distinct surface forms can express the same meaning.

3) The changes in the relationship between surface form and meaning are closely linked to the analysis the child makes of his language. They can provide valuable insights into the process of linguistic reorganization and into the new psychological status acquired by surface forms already used previously.

* * * * *

JOHNSON, Carolyn (University of British Columbia)

The ontogenesis of question words in children's language

Some of the most congruent reports of language acquisition concern the development of question words (wh-words, in English). The consistency holds, with only minor deviations, across longitudinal and cross-sectional studies, comprehension and production modes, normal and deviant language populations, a number of quite different languages, and first

and second language learning. The developmental sequence that emerges is (roughly) what and where, who, why, when and how. A close look at production data, however, yields clues that many reports of the use of question words are based on what children are interpreted to mean relevant to the situation, rather than what they actually say. This shows up as questions interpreted as wh-questions that actually contain no question word at all (e.g., dat? interpreted as What's that?) and - where discourse data are available - as questions that sound correct in isolation but are not appropriate in the given context (e.g., Where's your birthday? meaning When's...). My study takes a closer look at the development of wh-words in English, focussing on the words that are actually pronounced and used by children, as well as their linguistic and extralinguistic contexts.

The data for this study are all the questions asked in five play sessions by each of eight children, a girl and a boy at each six-month age interval from 1;6 to 3;0. The subjects were all normal first-born middle class children from homes where only English is spoken. Play sessions were audio- and videorecorded under optimal conditions in a livingroom setting in a television studio. Interaction was almost exclusively between mother and child, although the experimenter was present. Analysis is based on more than 2000 child questions, all narrowly transcribed in IPA and interpreted with the support of the video recordings.

Results demonstrate that the acquisition of each wh-word is not an all-or-none affair, but rather represents the culmination of separate but intertwining paths of development. These include cognitive development, phonetic control and phonological development, and increasing ability to analyze holistic routines into their constituent parts and encode semantic information, separating meaning from the supporting extralinguistic context. The children tended to go through a period of hypothesis testing, using individual wh-words before they were completely understood, although this was influenced by the more general "learning style" of each child. This was attested by mistakes in the earliest use of each wh-word, including omission, lack of segmentation within the phrase in which it occurred, phonetic ambiguity and inappropriate substitution. Development included a gradual freeing of each wh-word from a highly restricted context of use, often part of an interaction routine. This study illustrates in a precise way the interaction of language use and language form in acquisition. It also demonstrates the need for a theory of acquisition that, by taking a number of contributing factors into account, predicts individual variation as well as general patterns.

* * * * *

KAIL, Michèle (Université René Descartes), and WEISSENBORN, Jürgen (Max-Planck-Institut für Psycholinguistik)

A developmental cross-linguistic study of the processing of lexical presuppositions: French 'MAIS' and German 'ABER vs SONDERN'

An utterance of the type 'P BUT Q' is used appropriately if Q contradicts a proposition r presupposed by the speaker, that can be inferred from P in a specific context. This context may be constituted by general knowledge and/or a particular situational (linguistic and non-linguistic) information. The present study concerns the acquisition of the contrastive meaning of BUT in French and German children. It focuses on the development of cognitive strategies used to discover the relevant presuppositional component in the production and comprehension of 'P BUT Q' utterances. This discovery is a prerequisite to the correct use and understanding of the connective. The specific aim of this study was to find out whether the development of this capacity is modified by the particular lexical and syntactic structure of a given language or whether it is invariant. It was hypothesized that since German has two contrastive connectives (ABER vs SONDERN) while French has only one, the access to the presuppositional component would be facilitated by SONDERN which requires an explicit negation in P and, consequently, SONDERN would be mastered before ABER and MAIS in its corresponding use.

Children were examined individually in 2 sessions. In the first they were asked to complete 5 utterances of the two folling types: 'P BUT ...' or '... BUT Q'. Each of these utterances was the final (incomplete) sentence of a narrative (context) which delimited the presuppositions. Narratives were read aloud twice by the E. In the second session the same children were asked to judge whether the final sentence of 9 narratives (which differed from those of the first session) was acceptable. 36 native French speakers and 36 native German speakers (of both sexes) of 3 age groups (mean age: 7yr 8mo, 8yr 8mo, and 9yr 11mo) participated in the experiment.

The main results showed that children's ability to make use of the context which precedes a test-sentence in order to discover the presuppositions contained in it increases with age, in both linguistic groups. Presuppositions involved in the connective BUT are mastered by the older age group only; while younger children consider the connective BUT as an operator of coordination between P and Q clauses, children of the intermediate age group consider it as an operator of implication and they progressively take into account the argumentative value of BUT (ABER in German). In both linguistic groups, whatever the nature of BUT (ABER vs SONDERN, MAIS), for all age groups, performance in the completion task is significantly better than in the judgment task. This difference is interpreted as reflecting the respective cognitive strategies required by each task. In the completion task the fact that P or Q is given restricts the set of presuppositions to be processed, while

while in the judgment task the restriction must be operated by the child himself. As predicted, presuppositions involved in BUT (SONDERN) are discovered earlier than those involved in BUT (ABER) in both linguistic groups, indicating that the acquisition of the contrastive meaning of the connective is favored by the explicit negation in P. However, contrary to our assumptions, the lexical differentiation in German has no direct influence on the processing procedures adopted by children. In both linguistic groups and both tasks (completion and judgment) performance is better when the topic of the test-sentence is the theme of the context, a result which underscores the functional link between 'old' information and presupposition. Our findings contribute to elucidate the role played by general as opposed to particular strategies which depend on specific linguistic structures in language acquisition.

* * * * *

LIEDERMAN, Jacqueline (Boston University), and GOODGLASS, Harold (Boston Veterans Administration Hospital)

Word retrieval failures in the course of narrative: face-saving devices of children, adult aphasics and the elderly

In the course of every-day conversation normal adults have word-retrieval difficulties that slip by un-noticed. In contrast, when aphasics have word-finding difficulty the deficit glares. There are two groups of neurologically intact populations who also have rather severe word-finding problems: young children and non-institutionalized elderly without a history of neurological disease or insult. The purpose of this study was to compare each group's method of handling lapses in word-retrieval during narrative.

The main problem with previous studies which have attempted to address this issue is that is difficult to be sure of the target word intended by the subject during random conversation. Some investigators have skirted this issue by telling the subject a story and requesting that the narrative be retold. Interpretation of such data are confounded by variations in memory. In this study a new methodology will be presented.

Fifteen nursery children, 15 non-institutionalized elderly and 5 adult aphasics were asked to tell stories about 28 objects derived from the Boston Naming Test. Narrative was prompted by 28 sets of two-picture sequences. The target appeared in both pictures, was highlighted in yellow, and was central to the action of the story. Necessary elements of the story, excluding the target, were relatively high frequency words. Naming in narrative was compared to confrontation naming of the target a) in Isolation; b) in the same Embedded Context, no narrative required; c) after a semantic cue and d) after a phonemic cue.

When children and elderly were able to produce a correct name in the course of narrative they did so directly with minimal reliance upon hesitations, false-starts or self-cues. For names which were known, but could only be elicited after cuing, children were more conservative than the elderly. Children were far more likely to omit reference to the target rather than substitute a wrong name. Elderly manifest the reverse pattern. Indeed it was for these almost-retrieved words that the elderly produced the greatest number of semantic substitutions. When children and the elderly are confronted with an object that they cannot name, irrespective of the cues provided, a common strategy is to use an empty phrase to stand in its place, or to substitute a semantic paraphasia. However whereas the elderly will also resort to circumlocation, children rely almost exclusively on omission or semantic substitutions.

The aphasics' performance varied on a case-by-case basis. In general, however, correct productions during narrative were almost never direct. They often produced the name before or after rather than within the narrative. Their stories were fragmented and targets were named and misnamed within the same story. They employed a variety of forms of hesitations. For items not named during narrative, reference to the target was usually omitted or a literal or semantic paraphasia was substitioned. Circumlocation was not common.

In conclusion it will be demonstrated that this instrument enables systematic elicitation and evaluation of spontaneous speech and would be especially suitable for language-disabled child populations.

* * * * *

LOCKE, John L. (University of Maryland)

Phonetic Dispositions of the Child and Phonemic Demands of the Lexicon: Some Developmental Implications

On the basis of phonetic data from a wide variety of sources and populations, including the proto-consonant production of deaf infants - and children reared in several different linguistic environments - it appears that there are identifiable phonetic tendencies on the part of child speakers. These tendencies are responsible for the production of certain consonant segments, and are induced by other than environmental pressures. Because these phonetic dispositions are present in all humans, and because languages were built - and have changed - in accordance with these tendencies, there is a degree of correspondence between child phonetic capabilities and systemic demands.

The implications of this correspondence for phonological development are several. First, that a child produces some adult-like sounds in the appropriate words does not necessarily indicate that the child has learned the segments required by the lexicon. Rather, it may mean only that the child has sequenced segments he already had into a formal pattern. Second, any isomorphism between child repertoire and language inventory places the child in a developmental dilemna in which the segments he most needs to hear (e.g., /č/, /ž/) are among those he will hear the least; those he least needs to hear (e.g., /d/, /m/) are among those highest in conversational frequency.

There is a third developmental implication of the correspondence between child dispositions and lexical demands; from one's observations of spontaneous talking it will appear that children "avoid" certain segments (cf. Ferguson and Farwell, 1975). But the "difficult" sounds that children avoid also are the rare sounds; often, "avoidance" may confuse a statistical confounding with a functional action on the part of the child. Fourth, because there is a relationship between child tendencies and adult requirements, it (falsely) may appear that observed agreements between babbling repertoire and system inventory are the result of learning, when both are more plausibly considered the result of a common set of (unlearned) phonetic dispositions.

* * * * *

LUST, Barbara, PINHAS-LANGWEILER, Joan, and FLYNN, Suzanne (Cornell University)

The Acquisition of Gapped Coordinate Structures

This paper reports the results of an experimental study of syntactic and processing principles in the acquisition of a complex form of coordination reduction, i.e., verb-gapping, as in "Tommy drank chocolate milk and Mary Ø juice." This coordinate form was found to be significantly more difficult than several other forms of coordination reduction, e.g., than gapping both subject and verb, as in "The Daddy ate the crackers and Ø the ice cream", and it is not acquired until near the age of 7.

This exceptional difficulty of V-gapping cannot be explained by several linguistic or processing principles which have been proposed for coordination acquisition. A simple processing principle in terms of number of reduction operations cannot explain this difficulty since the V-gapping involves reduction of only a single unit (V) while the compared subject-verb reduction involves reduction of two units. A simple "primacy of verb" strategy (which disallows V-reduction generally) cannot account for this, since verb reduction in other forms of coordination, e.g. "Push the dog and Ø the cat" is one of the earliest forms of reduction (Ardery 1980). A linguistically based principle of direction of reduncancy reduction also cannot account for this difficulty since V-gap-

ping has a forward direction of reduction, and this has been found to be one of the earliest forms of reduction (Lust & Mervis 1980; Lust 1977).

This study tested 90 children from 3-0 to 7-5 (mean age 5-4) in an elicited imitation task on 4 coordination types including V-gapping. Coordination structures (sentential or phrasal) as well as reduction direction (forward or backward) was systematically varied. A plus and minus determiner condition was tested within the V-gapping structure, as in "Tommy caught a fish and Daddy Ø a turtle".

The results of this study provided evidence for several alternative linguistic and processing principles that can explain the acquisition of the gapped structures. Children appear to attempt to convert the V-gap form to full sentential form by establishing constituent structure for the reduced form. Evidence for this consisted of the following: (1) the majority of errors on the V-gapping form consisted of correct anaphoric elaborations of the V-gap by repetition of the verb from the initial clause, e.g. "Tommy drank chocolate milk and Mary drank juice". Exceptionally, several children incorrectly elaborated the reduced clause to, e.g., "and Mary juice juice" (3-4) or "...and Mary bring orange juice" (3-3). (2) children correctly imitated full unreduced forms of the V-gap sentences significantly more often than the reduced form. (3) the plus determiner condition of the V-gap form was significantly easier than the minus condition. V-gap forms appeared to be most difficult because they do not provide cues for the child to easily establish the constituent structure of the reduced form. The determiner appears to facilitate the processing of the V-gapped clause by signalling the phrasal units of constituent structure.

These results are interpreted for their relevance to current theory of sentence processing (Frazier & Fodor 1978) as well as to current theory of coordination acquisition (Ardery 1980; Bloom et al. in press; Lust 1977; Lust & Mervis 1980).

* * * * *

LUST, Barbara, WAKAYAMA, Tatsuko, SNYDER, Wendy, and BERGMANN, Margaret
(Cornell University)

The development of coordination in Japanese first language acquisition: a study of natural speech

A claim has arisen in previous study of first language acquisition of complex sentence formation by coordination in English: (phrasal or) reduced coordination without redundancy do not develop before full (sentential) coordination with unreduced redundancy. This claim is important because it implies that development of the reduced (phrasal) coordinations may require the competence for control of related unreduced forms,

suggesting a complex interpretive structure for the reduced coordinations.

The above claim is more interesting if it holds in acquisition of languages other than English. Japanese is particularly critical to a test of this claim since its connecting system differs radically from English. In Japanese most common connecting devices differ for predicate and nominal connection and several different devices are possible for each type. In fact, previous experimental work on Japanese first language suggested that for several basic connective types, Japanese children do not interrelate sentential and nominal coordinations and nominal (reduced) coordinations appear to be significantly easier for Japanese children than some forms of sentential or predicate coordinations. These experimental facts would argue that the above claim is not supported for Japanese first language acquisition, (Lust and Wakayama, 1979).

This paper tests and disconforms this conslusion by analysis of natural speech of 42 Japanese (Tokyo) children in two age groups (mean ages 31 and 38 months). More than 6100 utterances were inspected for various connecting devices operating on either nominals or predicates, e.g., 1 or 2 (excluding verb inflection).

1) Sazaesan to Wakamechan mo suki. (3 years, 5 months)
   Sazae and Wakame also likeable
   (I like Sazae and Wakame)

2) Osatoo irenaku-cha. Sore kara umeboshi irenaku-cha. (3,0)
   (Sugar put-have to and (then) plum put-have to)
   (I) have to put (in) sugar and (then) plum(s).

Results showed a larger number of utterances using nominal connecting devices than sentential connecting devices. However, a large amount of sentence juxtaposition without any connecting device and with reduncancy was found, as in 3; suggesting implicit sentence coordination with unreduced redundancy.

3) Oshosan ga ne, nenne shichatta no, Ikkyusan shichatta no (3;7).
   Osho subj, sleep do-past , Ikkyu do-past
   (Osho slept, Ikkyu did)

Moreover, a large amount of early use of nominal connecting particles involved a single noun only and a comitative or non-coordinative meaning (e.g., 4). Full-formed nominal coordinations like 1 were extremely rare.

4) Onichan to asonda no (2 yrs., 9 mo.)
   older-brother with played
   ((I) played with (my) older brother)

It is concluded that the above claim for developmental order of coordinative connection which was based on English also holds in

Japanese but is mediated by the language-specific connecting system.

Results are interpreted by comparison to development of coordination (by "and") in natural speech in English (e.g., Bloom, et al., 1980; Lust and Mervis, 1980), as well as to what little is known of development of coordination in Japanese (e.g., Okubo, 1968; 73; Lust & Wakayama, in press). Results are related to the theory of universals in language acquisition.

* * * * *

NEEDLEMAN, Rosa M. (University of California, Los Angeles) and ELLIOTT, Dale (California State University, Dominguez Hills)

Language, Pragmatics, Cognition: The View From Developmental Language Disorders

One of the most influential trends in developmental psycholinguistics at the present time is to be found in the work of Bates, Greenfield, Sinclair, Snow and others, who assume that language is dependent on cognitive and social/pragmatic abilities. In part this represents a reaction to the earlier point of view found in the writing of e.g. Chomsky and McNeill which emphasized innate linguistic knowledge and concentrated rather narrowly on structure. The new trend, while ostensibly more inclusive also provides too limited a view of the complexity of and possible interdependencies among linguistic, social/pragmatic and cognitive factors.

Although controversy exists concerning the relevance of data from language-disordered populations to the theoretical interpretation of normal development, it is arguable that we should strive for a theory capable of accommodating the widest possible range of linguistic behavior. On this assumption, the behavior observed in a number of childhood disorders presents an important challenge to the view that language is fundamentally dependent on cognitive and social/pragmatic factors.

We will discuss children from three categories of disorders whom we have observed in the process of research and clinical evaluation. Their behavior seems to us to indicate a considerable degree of independence from each other of linguistic, cognitive and social elements and also independence of the various subcomponents of linguistic ability (phonology, morphology, etc.). Evidence will be presented from cases of the following sorts:

1) linguistic "idiot savants" who display such abilities as adult-like productive morphological rules and complex and sophisticated organization of a large vocabulary, in the almost complete absence of communicative speech and without having attained Stage 6 sensori-motor abilities;

2) seriously delayed and in some cases virtually absent language in children with normal (non-verbal) intellectual and social abilities ("aphasic" children);

3) a wide range of linguistic abilities, including isolated abilities in particular subcomponents in children with a total or near-total lack of social relatedness and symbolic abilities ("autistic" children).

* * * * *

NELSON, Keith E., and DENNINGER, Marilyn (Pennsylvania State University)

Semantic Concept Acquisition and Generalization at Three Age Levels: Beyond Prototypes

Separating the role of individual differences and strategies from the role of input in concept acquisition is an important issue in need of experimental work. Findings here are reported from a project in which children at ages 3, 5, and 9 years learned novel concepts and their names (nouns) to criterion. They were then tested extensively regarding generalization to new exemplars: over 500 generalization exemplars across 6 concepts were employed. Generalization exemplars varied in discrete steps, from highly similar to highly dissimilar to the training set exemplars.

Results suggest that under conditions where the complete history of exposure to concepts is controlled, older children generalize significantly more widely to "inappropriate" (by adult definition) exemplars than do younger ones. But in other respects, including rapid acquisition of the semantic concepts, similar outcomes held at each level. It is argued that already-acquired concepts at different age levels may give a misleading impression of the children's cognitive and linguistic processes. As in the present study, it is essential to examine the processes of semantic concept formation and use for identical, equally unfamiliar concepts across a broad age range.

As prototype (family resemblance) theory would predict, generalization of concept names declined as resemblance between the learning set and the generalization exemplars declined. In contrast to expectations from prototype theory, however, patterns of generalization varied between concepts when the nondefining characteristics of the exemplars were considered. To account for the latter finding and other related results, a new and more flexible developmental theory of semantic concept acquisition is proposed. In this theory the core or "focus" of a newly-formed semantic concept reflects both the stimulus properties (e.g., family resemblances) for the exemplar set and the child's developing, active processing strategies.

* * * * *

OUTSTANDING BOOKS FROM GARDNER PRESS

CHILDREN'S LANGUAGE SERIES

Edited by **Keith Nelson, Ph.D.,**
Pennsylvania State University.

Volume I. CONTENTS: The Development of Figurative Language (H. Gardner, Ellen Winner, Robin Bechofer and Dennie Wolf). Semantic Development and the Development of Semantic Memory (K. Nelson). Steps Toward a Variable-Free Semantics of Attributive Adjectives, Possessives, and Intensifying Adverbs (P. Suppes and E. Macken). Language Development Through the School Years: Learning to Confine Interpretation to the Information in the Text (D.R. Olson and N. Nickerson). Input Language and the Acquisition of Communicative Competence (J.B. Gleason and S. Weintraub). Cognitive Pendulums and Their Linguistic Realization (K.E. Nelson and K. Nelson). Why Do Children Say What They Say When They Say It? An Experimental Approach to the Psychogenesis of Presupposition (P.M. Greenfield and P.G. Zukow). The Structure of Nursury School Conversation (J. Dore, M. Gearhart and D. Newman). Variations in Preschool Children's Conversational Performance (J. Dore). On Participants' Shaping of Discourse Through Their Understanding of the Task (W.S. Hall and M. Cole). Early Language Development: Conceptual Growth and Related Processes Between 2 and 4½ Years of Age (K.E. Nelson and J.D. Bonvillian). Index.

Volume II. CONTENTS: The Process of Rule Learning in Child Speech: A New Look (J.G. de Villiers). Apprenticeship in Syntax: The Ontogenesis and Representation of Syntatic Categories (M. Maratsos and M.A. Chalkley). Biligual Children: Some Interpretations of Cognitive and Linguistic Development (K.J. Lindholm). Language Analogue Project, Phase II: Theory and Tactics (E.S. Savage Rumbaugh and D.M. Rumbaugh). On Asking the Question: Can Apes Learn Language? (H.F.W. Stanlke). Two Comparative Psychologists Look at Language Acquisition (A. Gardner and B.T. Gardner). On the Grammatical Capacity of Apes (H.S. Terrace, L.A. Petitto, R.J. Sanders and T.G. Bever). Innovative Uses of Language by a Gorilla: A Case Study (F. Patteson). A Developmental Study of the Communication of Meaning: The Role of Uncertainty and Information (P.M. Greenfield and C.H. Dent). Index

Volume III. due January 1981

Order from Gardner Press
19 Union Square West
New York, 10003

PACE, Ann J. (University of North Carolina, Greensboro)

Children's Knowledge and Text Comprehension

By now, research has well supported informed intuition that the accumulated knowledge both children and adults possess importantly influences how they comprehend text. However, several questions remain concerning the conditions under which existing knowledge may enhance comprehension and circumstances in which it may actually impede understanding. Particularly significant may be developmental trends in children's ability to distinguish between what they know and what a text or story says. One of the accomplishments of middle childhood -- and one essential for success in school -- may be learning to make this kind of discrimination. The primary intent of this paper will be to review research which suggests how children's existing knowledge may aid their comprehension of stories, but also when it may interfere with it. Further, means by which kindergarten and primary-grade children may be induced to attend to text information will be discussed, along with possible implications of these findings for development and schooling.

One study by this investigator indicated that elementary-school children from kindergarten through sixth grade, who had rather complete knowledge of common, everyday events, could use such knowledge to comprehend narrative descriptions about these situations and supply details which were not explicit in the stories. However, the information in these stories was consistent with the children's own experiences; thus, the ability of these children to comprehend text-specific information was not revealed. To further explore the relationship between children's existing knowledge and texts, students in kindergarten through the sixth grade were presented with stories which appeared to concern highly familiar situations. The stories, though, contained some information which was discrepant with ordinary experience. Participants in the second, fourth, and sixth grades who read these stories noticed the anomalies. However, three-fourths of the kindergartners and second graders who listened to the same stories failed to detect the discrepant information, suggesting that these younger children may have trouble distinguishing between what they know and what a story says, if these narratives are presented orally. In a later study, kindergarten and second-grade listeners heard similar stories, but either the experientially inconsistent information was made even more discrepant or children were forewarned to expect to hear something "strange." Both manipulations worked; detection of anomalous information was much greater than previously. Thus, younger elementary-grade children may need help in appreciating that their own expectations are not always confirmed by a text.

These results have several implications for language development, reading instruction, and schooling in general. As Olson (1977) has suggested, text may be "autonomous," and one of the requirements of schooling may be learning to see that text information cannot necessarily be derived from

personal experience. If so, then deliberate and explicit pedagogical practices should perhaps be used to help younger school children, especially, learn to deal with text information.

* * * * *

PEA, Roy D., and RUSSELL, Robert (Clark University)

Foundations for a Scientific Theory of Communicative Development

Recent emphasis on the social interactive foundations of communicative development in the first two years has inspired widespread and uncritical deployment of concepts imported from a variety of somewhat insular academic disciplines (e.g.ordinary language philosophy, sociolinguistics, critical theory, phenomenology) that often do not share central epistemological assumptions. A review of the uses of such fundamental concepts as communication, intentionality, intersubjectivity, and discourse in accounts of communicative development will reveal the substantial lack of consensus concerning the descriptive scope, sense, and utility of these terms, as well as their lack of specifiability to date with respect to the developmental notions of differentiation and hierarchic integration (Simon, 1969; Werner, 1978). The current absence of theoretical work aiming for an integrative conceptual framework encourages the perpetuation of language and communicative "developmental theories" which are neither developmental nor theories, due to their conflation of ontogenesis with development, and which, by their lack of explicit accounts of the aforementioned key theoretical concepts, are in principle untestable. This lack of conceptual analysis encourages currently ad hoc accounts of 'data' seemingly relevant to communicative development which are marginally informed by the philosophical and linguistic literature (e.g. Bates et al., 1975: Speech act theory; Bruner, 1978:Ethnomethodology; Trevarthen, 1979: Habermas's Critical Theory). Behaviors of specific interest are mutual gaze, following line of visual regard, pointing, turn-taking, ritual play, and rhythmic integration of child-caretaker activity, examples and explanations of which will be examined from this critical perspective.

An integrative model of development, drawing on details of primary seminal work in the mentioned fields of inquiry, the organismic-developmental theory of Werner & Kaplan (1963; Kaplan, 1967; Wapner, 1978), and the formal cybernetic model of communication developed by MacKay (1972), is proposed as a means for beginning the necessary clarification of types and developmental levels of interaction and of communicative displays. The current widespread acceptance of a stage theory of communication development is discussed critically, in terms of needs in any adequate developmental theory for a specified telos of communication and criteria of adequacy for the testability of communication developmental accounts

which are more than descriptive, once the fundamental concepts of communication, intentionality, intersubjectivity, and discourse are made explicit in their various distinct specifications.

* * * * *

PIZZUTO, Elena (University of Palermo and The Salk Institute for Biological Studies)

The Early Development of Pronouns in American Sign Language: from pointing gestures to pointing signs

The study provides the first systematic evidence on the early stages of communicative and linguistic development in a deaf child of deaf parents who is acquiring American Sign Language as her first language. Two major issues are addressed: 1) that of characterizing and specifying, in the gestural modality, the transition from pre-linguistic, gestural-communicative to linguistic-gestural and communicative development; 2) that of clarifying whether or not, or to what extent, the acquisition of some basic, universal linguistic structures is controlled by the development of likewise universal cognitive structures that are independent from the specific modality in which language is acquired or, on the contrary, is substantially affected by the visual-gestural or oral-auditory modality. These issues are clarified by providing data on the early communicative development of a deaf child and on the child's acquisition of the signs for person, demonstrative and locative reference. The data were derived from the analysis of 12 samples of the child's spontaneous production, covering the age range from 0;8 to 2;5 years of age, and from the analysis of the child's performance in a pilot study of her comprehension of the possessive pronouns of American Sign Language. The linguistic symbols for person, demonstrative and locative reference are language-specific. Yet they express a set of universal relational concepts that are fundamental and necessary for the construction of human discourse. Unlike in spoken languages in American Sign Language the visual-manual signs that express these concepts are virtually identical, from a formational point of view, to general, communicative pointing gestures. Pointing signs are distinguished from pointing gestures only on a conceptual and functional basis. Pointing gestures appear in the prelinguistic, gestural-communicative repertoire of the deaf child in the same fashion as they do in that of the hearing child. By observing the patterns of development of these gestures, and the acquisition of the first formationally identical but conceptually distinct pointing signs it becomes possible to clarify the issues specified above. The results of this study, compared with those provided by analogous studies conducted on hearing children acquiring spoken languages, indicate that both the transition from the pre-linguistic, gestural-communicative to the linguistic-gestural stage of development, and the acquisition of the

most basic structures for the construction of human discourse are independent from the specific modality in which language as well as communication take place. The results also suggest the existence of a significant relation between the acquisition of the capacity to produce pronominal pointing signs and the achievement of proper symbolic capacities as manifested by the child in the production of the first two- and multi-word utterances.

* * * * *

SINGH, Rajendra (University of Montreal)

Syllables in Interphonology

The purpose of this paper is to argue that syllabification of English words in the interphonologies of learners of English as a second language can be adequately accounted for in terms of the metrical theory of the syllable (hereinafter referred to as the U.S.T. theory) recently proposed in Kiparsky (1979). It claims that syllabification is a function of the Universal Syllabic Template, the well-known sonority hierarchy, and language-particular special dispensations (exemplified by the exceptional appearance of /s/ before stops in English onsets despite the fact that it is more sonorous than stops).

Interphonologies of native speakers of Chinese, Hindi, Kashmiri, Korean, Portuguese and Punjabi learning English as a second language will be examined and it will be argued that U.S.T. provides not only a satisfying description of these interphonologies but also makes correct predictions in each case (the data for Hindi, Kashmiri, and Punjabi come from the author's own work and from Koshal , 1978, and Arun, 1961, and for Chinese, Korean, and Portuguese from Tarone, 1976).

Consider, for example, the English words station and slipper. Whereas Punjabi speakers pronounce these words as sateshan and salipper, Hindi speakers pronounce them as isteshan and salipper. Since Punjabi does not allow any complex onsets, every initial cluster in English is broken up epenthetically. Hindi, however, makes a distinction: the marked cluster st is broken up prothetically but the unmarked cluster sl is broken up epenthetically. Within the U.S.T. framework st is S(trong)W(eak) and sl is WS and a residual W is most economically accomodated epenthetically for WS is the first expansion of the Universal Syllabic Template. The theory leads us to make the claim that whereas an SW sequence may be broken up either way (depending, of course, on language-particular facts), a WS sequence may not be broken up prothetically. The claim is, in fact, valid for the half-a-dozen interphonologies examined by the author.

The paper will sketch out the algorithm to be applied in order to predict the shape an English word would have in any interphonology and discuss the precise role played by the L1 in shaping interphonology syllables. It will conclude by demonstrating why only U.S.T. can add the important dimension of prediction to interphonology studies, a highly advantageous move given their practical (language-teaching) concerns.

* * * * *

SMITH, Carol L., and TAGER-FLUSBERG, Helen (University of Massachusetts, Boston)

The Relationship between Language Comprehension and the Development of Meta-Linguistic Awareness

Our study focuses on the relationship between meta-linguistic awareness and language development in preschool children. Most previous researchers have treated the development of meta-linguistic awareness as quite separate from the mainstream of language development. For example, Hakes et al. (1976) hypothesize that the main period of development of meta-linguistic awareness is during middle childhood (ages 5-10) while the main developments in language comprehension and production are during the preschool years (ages 2-5). In contrast, we hypothesize that these two developments are both more inter-related and more overlapping in time than the previous accounts suggest. More particularly we propose: a) that even 3- and 4-year-old children show the beginnings of meta-linguistic awareness, and b) that there are strong relationships between measures of sophistication of language comprehension and meta-linguistic ability at this time.

Twenty 3- and 4-year-old children participated in this study. Each child received six tasks tapping meta-linguistic abilities in three areas: phonology, words, and syntax. These six tasks were: (1) speech sounds: children had to judge which sounds were speech sounds (e.g. ba, tee, o) and which were non-speech sounds (e.g. click, hum); (2) rhymes: children had to judge which words rhymed with "Jed" and which did not; (3) what's a word: children had to distinguish words they knew (e.g. table, push) from nonsense words (e.g. pleck, drin); (4) arbitrariness of word-referent relationship: children had to judge whether one could change the name of something and then show they accepted the new name in subsequent questioning; (5) morphemes: children had to judge whether a puppet had provided the correct or incorrect morphemic ending to a word (e.g. two chairs vs. two chairer); (6) word order: children had to judge the correct or incorrect word order of simple imperatives. Each task was designed so that it had at least ten items. These six tasks were presented in random order, and testing was completed over a two-week period for each child. Each child also received two measures of language sophistication: the PPVT and an act-out sentence comprehension test (including passives, coordinated sentences, embeddings).

Our results strongly support the hypothesis that 3- and 4-year-old children have some meta-linguistic awareness: fully 80% of the children met a strict criterion for success on at least two of the six meta-linguistic judgement tasks. The results also support the hypothesis that there are strong inter-relations between general language development and meta-linguistic development. The correlation between act-out sentence comprehension and overall meta-linguistic score was .72; further, the correlation between these two variables remained significant even when the factor of age was partialled out (r=.59). Similarly there was a significant correlation between PPVT and overall meta-linguistic score (r=.74) which also remained significant after partially out age (r=.59). It is concluded that some aspects of meta-linguistic awareness begin to develop at least as early as age three, and are more intimately tied to general language development than had been previously thought.

* * * * *

SPEKMAN, Nancy J. (University of Maryland)

The Dyadic Verbal Communication Skills of Learning Disabled and Normally Achieving 4th and 5th Grade Boys

There is a growing body of clinical and empirical evidence which indicates that learning disabled (LD) children experience different interpersonal interactions than their normally achieving (NA) peers. In socio-metric studies, LD children have been found to be less popular and more socially rejected by their peers than their classmates (Bryan, 1974b, 1976; Siperstein et al., 1978). They are also more likely to be ignored by peers and teachers (Bryan, 1974a; Bryan and Wheeler, 1972). In attempts to probe this social rejection, T. Bryan and her colleagues have explored interpersonal communication situations and have found differences between LD and NA children in both nonverbal communication (Bryan, 1977) and certain aspects of verbal communication (Bryan & Pflaum, 1978; Bryan et al., 1976).

The purpose of this study was to more closely examine the verbal communication skills of LD and NA children. The sample was comprised of 48 children, 12 LD and 36 NA, who were white, 4th and 5th grade boys (9-0 to 11-5), of middle and above SES, normal intelligence, and with receptive and expressive knowledge of the vocabulary required for task performance. The LD children were diagnosed as such by their school districts with primary learning problems in reading, written expression, and/or math, had WISC Verbal IQ's of 90 or above, and received regular special education services. The children were paired to form 12 dyads of LD and NA children and 12 dyads of only NA children.

The experimental task was a dyadic, verbal problem-solving activity in which the children, separated by an opaque barrier, were required to

work cooperatively and to share information. One child was assigned the role of Speaker and was instructed to tell his Listener how to arrange a set of attribute blocks into a geometric pattern. All children performed 3 tasks as Speaker and 3 as Listener. Further, the dyads communicated under 3 conditions which varied the height of the barrier and the channels available for communication and feedback.

Variables examined from the data focused on the dyad itself as well as on the Speaker and Listener roles. Dyad Variables: Those dyads involving LD children performed significantly less successfully than the NA dyads. Further, while the time for task completion and the amount of interaction were equivalent between groups, the LD dyads performed less efficiently. Speaker Variables: LD Speakers provided significantly less information, described the gestalt of the pattern less frequently, and had significantly more trouble in the appropriate use of deictics than NA Speakers. However, in response to Listener questions, the NA and LD Speakers performed similarly. Listener Variables: As Listeners, the LD and NA children followed directions equivalently and asked equivalent numbers of questions. However, the questions asked by LD Listeners were less likely to request new information needed for task performance.

There are numerous implications from this study. The methodology and variables examined highlight some unique and important areas for focus in the study of communication. The results support previous findings of communication differences in LD children and further specify areas of difference as well as similarity. There are also implications for assessment in that isolated language testing cannot be considered sufficient for predicting actual communication skills. The traditional diagnostic model must be extended to include measurement in situ. Finally, there are implications related to instruction and remediation.

* * * * *

STOKES, William T., and HOLDEN, Susan (Lesley College)

Individual Patterns in Early Language Development: Is there a one word period?

While it is universally recognized that the one word period of language development is characterized by a great variety of language forms, the nature and significance of noncanonical forms (i.e., forms that are not one word utterances) remain substantially unexplored. Significant exceptions include, in part, the recent examinations of successive single word utterances, compressed sentences, vertical constructions, empty forms and nonrandom babbling (Bloom 1973; Nelson 1973; Scollon 1974; Dore et al. 1976; Rodgon 1976; Greenfield & Smith 1976; Branigan 1979). Further elaboration of this period is provided in this paper.

The speech of five children (o;9-1;9) is examined; attention is focused upon those forms which until recently have been excluded from analyses, because they are rare, because they may not fit conveniently into existing descriptive categories, or because they are seemingly unintelligible. Aspects of the transitions from babbling to words and from words to phrases (two word utterances), and the fluid complex nature of development throughout the period are examined. Issues of description, explanation and methodology are considered.

Three children in conversation with their parents were recorded (audio) in a laboratory biweekly for three to five months. Two children were recorded (audio and video) at home at irregular intervals over a year; and, extensive diaries were maintained. Although diaries are generally unreliable, it is argued that they provide the only reasonable means for gathering rare events in child language.

The data so gathered revealed strikingly individual and complex patterns of language performance in these children. Among the unusual forms encountered were referential babbling, nonsyllabic utterances, and very early compressed multiword utterances (earliest at 10 months). A full description of these and the full variety of forms encountered is provided.

We conclude that the one word period contains so rich a variety of forms that perhaps we ought to abandon that convenient description. More significantly, the phenomena can not be reasonably assigned to transitions between stages - they occur throughout the period. This necessitates a reconsideration of our accepted explanations of events in this period. We consider the notion of organizational constraints underlying performance in the word period.

* * * * *

STOTSKY, Sandra (Curry College)

Types of Lexical Cohesion in Expository Prose: Implications for Developing and Assessing Vocabulary in Reading/Writing

Linguistic inquiry into the role of vocabulary in connected discourse has recently emerged in the work of Michael Halliday and Ruqaiya Hasan (1976). This interest has coincided with renewed stress on the critical importance of vocabulary in comprehending or composing formal written English (Mina Shaughnessy, 1977; Richard Anderson and Peter Freebody, 1979; Sandra Stotsky, 1979; 1980).

Halliday and Hasan suggest a new way to describe how the writer's use of lexico-grammatical resources enhances the reader's sense and comprehension of text. Their analysis outlines ways that a writer's choice of vocabu-

lary establishes a network of different types of semantic relationships throughout an entire unit of discourse. The richness of this network determines to a large degree the textual cohesion sensed by the reader. As Halliday and Hasan define cohesion, it is a semantic relation between at least two lexical elements in a text, the presence of the first facilitating the interpretation of the second. The semantic tie between the two elements can be created directly in the text (as with synonyms), less directly through a superordinate concept implicit in the text that includes the two elements, or even more indirectly through their organic relationship to the topic of the text (as in collocational cohesion).

The skill with which the writer purposefully or intuitively crafts semantic relationships through selection of vocabulary helps determine the coherence and readability of the text. Conversely, the degree to which the reader is able to recognize and respond to these relationships influences the quality and rate of his comprehension.

Halliday and Hasan have offered a new approach to the analysis of text that provides a way of relating the resources of the writer to those of the reader. However, their categories do not appear to be comprehensive nor the implications for applied research clear. This paper will examine the types of lexical cohesion Halliday and Hasan outline, propose further distinctions, and suggest how these categories relate to methods for developing or assessing vocabulary. It will conclude with examples that suggest how these categories may be used both to assess lexical growth in the prose of developing writers and to help developing readers to comprehend text.

* * * * *

STRAGE, Amy A. (University of California, Berkeley)

Communicative and Analytic Strategies in Naturalistic Second Language Acquisition

Much recent L2 research has focussed on learners' strategies. However, integration of the findings remains confusing because the strategies delineated are not always grounded in any particular theoretical approach. The present study finds that such strategies reflect two very different characterizations of language. Some permit the maintenance of the conversation and of information exchange (communicative strategies), and promote the mastery of language-as-a-communication-medium. Some ensure exposure to input for the analysis of L2 structure (analytic strategies) and promote the mastery of language-as-a-rule-governed-problem-space. And some do both. Examining strategies in this light allows for a more comprehensive view of the acquisition of a structured communication system.

The data consisted of 30 hours of audio-taped free-play and family interactions (eg, mealtime) involving 2 American children (age 5 and 7) learning French as their L2 in a French-speaking country, their bilingual parents, and their monolingual friends (peers and adults). The tapes span the children's 5th through 9th months of immersion in the L2 milieu. In addition to the exposure to the L2 at home and at friends', the children attended a French school.

The nature and consequences of the use of seven strategies were examined. (1) Role and activity nomination: Proposing roles and activities so the L2 learner can keep the ensuing conversation to topics they can manage. (2) Mastery and use of idiomatic expressions: Learning the appropriate use of colloquial expressions for easier entry into on-going L2 conversations, and for access to a data base of structured L2 utterances. (3) Facade of information exchange: Recycling a satisfactorily completed exchange for a second go at analyzing the structure of the input utterances, and for sustaining the conversation. (4) Substitutions: Using language as the stuff of games, as the currency of social exchange, with the added benefit of providing the learner with opportunities to practice syntagmatic and paradigmatic substitutions. (5) Incorporation of new vocabulary items: Guessing at word and phrase meanings by trial and error usage, with minimal disruption of the flow of conversation, and quick feedback about the accuracy of the guess. (6) Modulation of input: Controling the pace of the input to make it come in manageable chunks (for communication and analysis). (7) Compensatory code-switching: Switching back to L1 in cases of stress, urgency, or when miscomprehension would be very costly.

The process of the L2 Acquisition observed here, and implications for designing L2 programs and explaining L1 acquisition will be discussed in terms of (1) differences in the sorts of discourse engaged in and in the communicative strategies used (reflecting personality differences), (2) the syntactic structures made available for analysis by the use of each of these communicative strategies, and (3) differences in the use of analytic strategies.

* * * * *

VIHMAN, Marilyn May (Stanford University)

The Acquisition of Morphology by a Bilingual Child: A Whole-Word Approach

The existence of contrasting strategies in the acquisition of morphology has been noted by Cazden (1972): Whereas one of the children in the longitudinal Harvard study increased her MLU gradually as she made increasing use of inflections ("microdevelopment"), another child developed long utterances at a much younger age, but made relatively

less use of inflectional markers or other functors at a given stage as defined in terms of utterance length ("macrodevelopment").

The present paper describes the avoidance of inflectional markers by a child (R) who was simultaneously exposed to a highly inflected, relatively agglutinative language, Estonian, and to English, with its more analytic structure. The whole-word approach was manifested in several ways, including R's accumulation of postpositions before any inflectional endings had yet been used, his borrowing of English has to mark possession in Estonian (where a case marker plus the verb 'to be' would normally be used), his consistent learning of pronominal case and other suppletive or irregular morphological forms well before he began to use the corresponding regular marker, and his long-term use of did plus verb as an English past tense marker. R's pattern of acquisition of Estonian morphology contrasts sharply with that of two other Estonian-speaking children whose vocabulary size and MLU were close to R's at age 2;0, but who had relatively little exposure to English and lacked any extensive English vocabulary when they began to make use of Estonian inflectional morphology.

To what extent is bilingualism the source of delay in R's acquisition of morphology? It can be argued that, for a child who must deal with two languages from the first in his daily experience, inflectional morphology may appear less functional than word-size morphemes, which can more easily be fitted into the structure of either language. We should note that R's total vocabulary exceeded 150 words before he began to use multiword utterances (as compared with a norm of about 50: cf. Nelson 1973, Garman 1979): This delay in word-combination seems clearly traceable to the special cognitive task imposed by the fact of bilingual input. Of these multiword utterances, fully 20% were mixed for the first four months (up to age 2;0, when the number declined abruptly to 4%). This lends credence to the view that bilingualism was a major factor in the morphological delay. Further supporting evidence for that position can be found in certain other studies of bilingual children (Leopold 1949, Murrell 1966, Pitthan 1980); on the other hand, some bilingual children have shown no such delay (Burling 1959, Imedadze 1960). The structure of the two languages in question may play a role. Thus, English could be seen as affecting R's Estonian in an "adstratum" or "superstratum" manner, such as has long been postulated for situations of extensive language contact. Alternatively, however, it is also possible that the whole-word approach to morphology is simply part of a more general cognitive style, as manifested by R in his "whole-word" approach to phonology (documented elsewhere by the author). Though the factors of bilingualism and individual style cannot well be teased apart on the basis of a single case study, it is hoped that an in-depth analysis of various aspects of one child's language development will shed light on questions which deserve consideration in subsequent, larger-scale studies.

* * * * *

WALDEN, Tsvia (Harvard University)

Strategies Used by Preschoolers in Handling Ungrammatical Verb Forms in Hebrew

This study reports on young children's handling of the Hebrew verb system. It looks into the relative contribution of the root (meaning-bearing item), the morphology (pattern) and the syntax (direct and indirect object markers) in the child developing verb system.

The reported study was designed to answer the following questions:

a) Do children use the presence of the root consonants in novel forms to identify the verb?
b) Can they identify the verb root in novel forms if it is phonologically transformed?
c) Do their interpretations of verb meaning rely on morphological markers of causative, passive and reflexive patterns?
d) Do their interpretations of novel verb forms rely on the presence of direct and indirect object markers?
e) What is the interaction between the three different sources of information to be used?

The subjects were twenty native speakers of ages 4,2 - 5,11. They were introduced individually to a puppet who "could not speak the language properly" and were asked to judge her sentences and interpret them. The puppet used verb forms that were nonexistent but fit into the verbal paradigm.

Children who were presented with novel verb forms used root-input whenever it conformed with the syntactic information. The more transparent roots were used to a greater extent. Older children used root-input more often than did their younger peers.

Some children correctly identified the root even when there was no syntactic bias to do so. The importance of this "rare event" is supported by observations of spontaneous use of such novel forms by other children. This provides evidence that the consonantal input carries meaning. This finding supports the claim of the psychological reality of the root, and suggests that roots are stored in the lexicon as abstract (purely consonsntal) forms. If, in fact, older children tend to use the root input more than do younger ones, and yet do so before literacy comes in, it will fit in with what we know about the development of metalinguistic awareness around age five.

* * * * *

WINZEMER, Judith A. (City University of New York)

A lexical-expectation model for children's comprehension of wh-questions

Tyack & Ingram (1977) and Ervin-Tripp (1970) report that 2- to 3-year-old children make the following type of error in answering wh-questions: When asked a question like When will the deer eat? a child might answer: meat. The child answers as if s/he had been asked What will the deer eat? A comprehension model is proposed to account for this type of error. The model posits the existence of lexical expectations, which are estimates of the likelihood that a sentence constituent will follow a verb. Lexical expectations are based on semantic properties of verbs such as entailment relations and centrality to a verb's meaning. The model predicts that wh-questions which query expected constituents for verbs will be easier to comprehend than questions which do not query expected constituents. For example, What will the deer eat? will be easier to comprehend than Where will the deer eat? Further the model predicts that if the child gives an incorrect constituent in answering a wh-question, the incorrect constituent will be the expected constituent for the verb. For example, in answer to When will the deer eat? the child might say meat but not in the woods.

The predictions of the model were tested in a comprehension study. Twenty children ranging in age from 2;1 to 2;10 (mean age, 2;5) served as subjects. Children were shown 40 pictures and asked one question what, where, when, how, and why. Of the 8 questions for each wh-word, 4 queried expected constituents and 4 did not.

Results were that children responded correctly significantly more often on wh-questions which queried expected constituents. Errors involving giving an incorrect constituent were more frequent on wh-questions which did not query expected constituents. When errors were made, children overwhelmingly answered by giving expected constituents.

* * * * *

(Late Addition:)

CIOFFI, Grant L. (University of New Hampshire, Durham)

The Perception of Sentence Structure by Good and Poor Comprehenders

One expects elementary school students to make the transition from accurate word recognition to successful comprehension of text as they progress through formal reading instruction. Some students fail, however, to make this transition and continue to read words in texts as if they were a list of unrelated items; hence, while showing facility in word identification skills, they fail to comprehend passages. The cause of such difficulties is often ascribed to a failure to use the

structure inherent in English sentences. Cromer (1970) first identified such readers in a junior college population. Since then, others, including Isakson and Miller (1976)and Mason and Kendall (1979), have suggested that such readers also exist in elementary school populations. Weaver (1979) attempted to teach those readers sentence organization skills using sentence anagrams and a relational grammar. While Weaver reported significant results, neither she nor other researchers have identified the structures that good comprehenders use and poor comprehenders fail to use in comprehending text. The purpose of this study was to identify the sentence structures that good readers apparently perceive and use and poor comprehenders fail to use.

Subjects were 72 third and fourth grade students in a suburban district in the Midwest. They were identified as either good comprehenders, (readers who had good word recognition and comprehension abilities), or good word recognizers, (readers who read individual words reasonably well but performed poorly on comprehension tasks). Initial selection was made on the basis of the judgments of their teachers. These judgments were confirmed by student performance on subtests from the Metropolitan Reading Achievement and Stanford Diagnostic Reading Tests.

Subjects read either a fiction or non-fiction passage. After reading subjects were presented, one at a time, the sentences in their respective passages and instructed to attempt to mark three places where it would make sense to pause while reading orally. Subjects were encouraged to identify three such places in each sentence but to mark fewer if it made sense to them to do so.

Findings suggested that the perception of sentence structure as demonstrated by the parsing task is similar for the two groups with subject-verb and verb-object boundaries being particularly salient. The results suggest that if sentence organization skills are implicated in the comprehension difficulties of good word recognizers, the poor comprehension may result from their failure to apply what they know about language rather than a lack of competence in recognizing sentence organization or structure. Further, efforts to improve the reading comprehension of this group might be more profitably directed towards inducing them to use what they know rather than trying to teach them any particular grammar.

* * * * *

The Conference wishes to thank

CAMBRIDGE UNIVERSITY PRESS

for their generous contribution.

CONFERENCE DIRECTORY

This directory has been compiled to assist those wishing to contact conference speakers. In cases of multiple authors, only the primary author has been listed here.

ANDERSON, Lloyd B.
316 A St. S.E.
Washington, D.C. 20003

BIRSH, Judith R.
4671 Delafield Avenue
Riverdale, NY 10471

BOSKEY, Madeline
233 West 77 Street #14G
New York, NY 10024

CAPATIDES, Joanne Bitetti
434 W. 120th St. Apt. 9F
New York, NY 10027

CIOFFI, Grant L.
Department of Education
Morrill Hall
University of New Hampshire
Durham, NH 03824

DENT, Cathy H.
Psychology Department
Davie Hall 013A
University of North Carolina
Chapel Hill, NC 27514

DONAHUE, Mavis
University of Illinois at Chicago
College of Education
Box 4348
Chicago, IL 60680

DOYLE, Anna-Beth
Department of Psychology
Boston University
64 Cummington Ave.
Boston, MA 02215

EDWARDS, Mary Louise
Department of Communicative Disorders
Syracuse University
Syracuse, NY 13210

EILERS, Rebecca E.
Mailman Center for Child Development
University of Miami
P.O. Box 016820
Miami, FL 33101

ERREICH, Anne
Developmental Evaluation Clinic
The Children's Hospital Medical Center
300 Longwood Avenue
Boston, MA 02115

ESCAMILLA, Manuel
California State University
Division of Teacher Education
800 N. State College
Fullerton, CA 92634

FOWLER, A.
Psychology Department
University of Pennsylvania
3813-15 Walnut Street
Philadelphia, PA 19104

FREEDMAN, Aviva
Writing Tutorial Service
Carleton University
Ottawa, Ontario K1S 5B6
CANADA

GARVEY, Catherine
Johns Hopkins University
Psychology Department
Baltimore, MD 21218

GENESEE, Fred
Psychology Department
McGill University
1205 Dr. Penfield Avenue
Montreal, Quebec
CANADA

GERSTEN, Elayne
Assistant Director/Language
Pre-Schooler's Workshop
47 Humphrey Drive
Syosset, NY 11791

GORDON, David Paul
Institute of Human Learning
University of California
Berkeley, CA 94720

GRAVES, Zoe
P.O. Box 66
Stony Point, NY 10980

GRAYBEAL, Carolyn M.
211 Highland Avenue
W. Newton, MA 02165

HAFITZ, Jeremie
Box 5, Developmental Psych.
Teachers College
Columbia University
New York, NY 10027

HOGAN, Anne E.
P.O. Box 016820
Miami, FL 33101

HARDY-BROWN, Karen
Colorado Adoption Project
Institute for Behavioral Genetics
University of Colorado
Boulder, Colorado 80303

IMMLER, K.P.
Psychology, Uris Hall
Cornell University
Ithaca, NY 14853

JAKUBOWICZ, Celia
Laboratoire de Psychologie
Experimentale
28 rue Serpente
75006 Paris
FRANCE

JOHNSON, Carolyn
School of Audiology and Speech
Sciences
University of British Columbia
Vancouver, BC
CANADA V6T 1W5

NEEDLEMAN, Rosa M.
The Neuropsychiatric Institute
760 Westwood Plaza
Los Angeles, CA 90024

NELSON, Keith E.
Department of Psychology
Pennsylvania State University
University Park, PA 16802

PACE, Ann J.
School of Education
University of North Carolina
Greensboro, NC 27412

PEA, Roy D.
Department of Psychology
Clark University
Worcester, MA 01610

PIZZUTO, Elena
Istituto di Psicologia
Sperimental, Universita' di
Palermo, Viale delle Scienze
90127 Palermo
ITALY

SINGH, Rajendra
Associate Professor, Linguistics
Dept. de Linguistique
Universite de Montreal
Montreal, Quebec
CANADA

SMITH, Carol L.
Psychology Department
University of Massachusetts
Boston, MA 02125

SPEKMAN, Nancy J.
Department of Special Education
University of Maryland
College Park, MD 20742

STOKES, William T.
Graduate School
Lesley College
Cambridge, MA 02138

STOTSKY, Sandra
246 Clark Road
Brookline, MA 02146

STRAGE, Amy A.
Department of Psychology
University of California
Berkeley, CA 94720

SWINNEY, David
Psychology Department
Paige Hall
Tufts University
Medford, MA 02155

VIHMAN, Marilyn May
Department of Linguistics
Stanford University
Stanford, CA 94305

WALDEN, Tsvia
42 Clyde Street
Belmont, MA 02178

WINZEMER, Judith A.
111 W. 74 Street
Apt. 4A
New York, NY 10023

NOTES