

**Harding, Carol**

**1983 - 1984**

Eligible submissions to Young Scholars program, 1983-84

Number 89

Name CAROL HARDING

Institution Loyola Univ. of Chicago

Title An investigation of developmental mechanisms in  
the development of intentional communication

Degree: year 1981 Ph.D

field human development

potential problem - Yes       

Total budget 15,831 (D+I)

Start date 9/84

JK 2(2,2)  
MH 3(3,3)

\*Missing material



FCD PROGRAM FOR YOUNG SCHOLARS IN SOCIAL AND AFFECTIVE DEVELOPMENT

REVIEWER: HOFFMAN

PROPOSAL NUMBER: 89

SCHOLAR'S NAME: Harding

*Integrate findings from 3 studies - dev. of interest, communication in the context of framework that will clarify mechanism of dev. U.S. intervention influence of inf's int's -> dev. of int. in infant. Qualitative analysis of mother tapes.*

I. PROJECT

Significance of Research Problem:

☐ Outstanding ☐ Good ☒ Average ☐ Poor ☐ Unacceptable (Un.)

Quality of Research Design, Methods, Analyses:

☐ Outstanding ☐ Good ☒ Average ☐ Poor ☐ Unacceptable (Un.)

Overall Numerical Rating:

☐ 1 ☐ 1.5 ☐ 2 ☐ 2.5 ☒ 3 ☐ 3.5 ☐ 4 ☐ 4.5 ☐ 5

Outstanding

Good

Average

Poor

Un.

Check Deficiencies If Applicable:

☐ not appropriate to FCD program area (social & affective development)

☐ limitations in design

☐ limitations in methods

☒ limitations in analysis plans *not very clear*

☐ inadequate knowledge of relevant literature

☐ other: *is a great degree involve writing up previous research, rather than doing a new study.*

II. PERSON

Potential to Contribute to Field:

☐ Outstanding ☐ Good ☒ Average ☐ Poor ☐ Unacceptable (Un.)

Potential of Project to Contribute to Applicant's Career:

☐ Outstanding ☐ Good ☒ Average ☐ Poor ☐ Unacceptable (Un.)

Overall Numerical Rating:

☐ 1 ☐ 1.5 ☐ 2 ☐ 2.5 ☒ 3 ☐ 3.5 ☐ 4 ☐ 4.5 ☐ 5

Outstanding

Good

Average

Poor

Un.

III. BUDGET

Appropriateness of Budget:

☐ Good ☐ Average ☐ Poor

SUMMARY RATING OF PROPOSAL:

☐ 1 ☐ 1.5 ☐ 2 ☐ 2.5 ☒ 3 ☐ 3.5 ☐ 4 ☐ 4.5 ☐ 5

Outstanding

Good

Average

Poor

Un.

COMMENTS: Use back of sheet.



FCD PROGRAM FOR YOUNG SCHOLARS IN SOCIAL AND AFFECTIVE DEVELOPMENT

REVIEWER: KAGAN

PROPOSAL NUMBER: 89

SCHOLAR'S NAME: Hardoy Carol

I. PROJECT

Significance of Research Problem:

☐ Outstanding ☒ Good ☐ Average ☐ Poor ☐ Unacceptable (Un.)

Quality of Research Design, Methods, Analyses:

☐ Outstanding ☒ Good ☐ Average ☐ Poor ☐ Unacceptable (Un.)

Overall Numerical Rating:

☐ 1 ☐ 1.5 ☒ 2 ☐ 2.5 ☐ 3 ☐ 3.5 ☐ 4 ☐ 4.5 ☐ 5  
Outstanding Good Average Poor Un.

Check Deficiencies If Applicable:

☐ not appropriate to FCD program area (social & affective development)

☐ limitations in design

☐ limitations in methods

☐ limitations in analysis plans

☐ inadequate knowledge of relevant literature

☐ other: \_\_\_\_\_

II. PERSON

Potential to Contribute to Field:

☐ Outstanding ☒ Good ☐ Average ☐ Poor ☐ Unacceptable (Un.)

Potential of Project to Contribute to Applicant's Career:

☐ Outstanding ☒ Good ☐ Average ☐ Poor ☐ Unacceptable (Un.)

Overall Numerical Rating:

☐ 1 ☐ 1.5 ☒ 2 ☐ 2.5 ☐ 3 ☐ 3.5 ☐ 4 ☐ 4.5 ☐ 5  
Outstanding Good Average Poor Un.

III. BUDGET

Appropriateness of Budget:

☒ Good ☐ Average ☐ Poor

SUMMARY RATING OF PROPOSAL:

☐ 1 ☐ 1.5 ☒ 2 ☐ 2.5 ☐ 3 ☐ 3.5 ☐ 4 ☐ 4.5 ☐ 5  
Outstanding Good Average Poor Un.

COMMENTS: Use back of sheet.



REVIEWER: KAGAN

PHONOLAB NUMBER: 89

SCHOLAR'S NAME: Harvey Gans

I. PROJECT

Significance of Research Problem: ☒ Outstanding ☐ Good ☐ Average ☐ Poor ☐ Unacceptable (0-5)

Quality of Research Design, Methods, Analysis: ☒ Outstanding ☐ Good ☐ Average ☐ Poor ☐ Unacceptable (0-5)

Overall Numerical Rating: ☒ 5 ☐ 4 ☐ 3 ☐ 2 ☐ 1 ☐ 0

Check deficiencies if applicable:

A good paper for camp  
Desired Reflection!

II. PERSON

Potential to Contribute to Field: ☒ Outstanding ☐ Good ☐ Average ☐ Poor ☐ Unacceptable (0-5)

Potential of Project to Contribute to Applicant's Career: ☒ Outstanding ☐ Good ☐ Average ☐ Poor ☐ Unacceptable (0-5)

Overall Numerical Rating: ☒ 5 ☐ 4 ☐ 3 ☐ 2 ☐ 1 ☐ 0

III. SUBJECT

Appropriateness of Subject: ☒ Good ☐ Average ☐ Poor

SUMMARY RATING OF PHONOLAB: ☒ Outstanding ☐ Good ☐ Average ☐ Poor ☐ Unacceptable (0-5)



AN INVESTIGATION OF DEVELOPMENTAL MECHANISMS  
IN THE DEVELOPMENT OF INTENTIONAL COMMUNICATION

Carol Gibb Harding  
Loyola University of Chicago  
820 North Michigan Avenue  
Chicago, Illinois 60611  
312-670-3076

Project Proposal submitted to the Foundation for Child Development

December 1983



LOYOLA UNIVERSITY OF CHICAGO



SCHOOL OF EDUCATION

*Water Tower Campus \* 820 North Michigan Avenue, Chicago, Illinois 60611 \* (312) 676-3030*

November 28, 1983

Ms. Heidi Sigal  
Program Officer  
Foundation for Child Development  
345 East 46th Street  
New York, New York 10017

Dear Ms. Sigal:

I am pleased to write this letter in support of the grant application of Dr. Carol Harding, who is Assistant Professor of Foundations of Education in the School of Education of Loyola University of Chicago. Dr. Harding, who received her degree at the University of Delaware, has an impressive record of research in the area of Early Childhood Education. Her proposal, which is addressed to the Foundation for Child Development, is entitled "An Investigation of Mechanisms in Development of Intentional Communication." She has already completed extensive research on the intentional communications between mothers and children of the white middle class. Her proposal will enable her to add to her sample by including an emphasis on the hispanic population. It is my strong expectation that Dr. Harding's research on intentional communication will lead to a book-length monograph on this subject.

As a member of the School of Education faculty, Dr. Harding has exercised a leadership role in Early Childhood Education and in Special Education. The grant which she seeks will add much to her capacity to generate scholarly research. Dr. Harding has a good record of carefully defining her research areas and in seeing them through to completion. I am pleased to give my firm endorsement to Dr. Harding's proposal.

Sincerely,

Gerald L. Gutek, Dean  
School of Education

GLG/mg



# AN INVESTIGATION OF DEVELOPMENTAL MECHANISMS IN THE DEVELOPMENT OF INTENTIONAL COMMUNICATION

## Statement of Purpose

The purpose of the proposed project is to draw together, in book or monograph format, the findings from three related but separate research studies, each of which contributes to the further understanding of the development of intentional communication, and to present these findings within a theoretical framework assumed to clarify mechanisms of development. As the discipline of developmental psychology becomes more concerned with the ecological context of development (following, for example, Bronfenbrenner) as well as with the interaction of developmental processes, eg., cognition, affect, and social development, the theoretical framework within which empirical findings are presented becomes critical. Although I do not pretend to have a well-formulated theory for explaining (or even describing) communication development, I have grappled with issues such as intention, the interrelationship of cognitive and social development, and developmental mechanisms that may account for achievements in communication (see attached vitae). The questions I ask as well as the conclusions I have reached I believe contribute to the understanding of communication in particular and development in general. These questions and conclusions would be presented as the theoretical basis of the proposed book or monograph.

Specifically, the research studies to be drawn from examined processes involved in communication development. The relationship of cognitive ability (as assessed within a Piagetian (1952, 1954) model of development), social experience (as assessed by examining the interaction of mothers and infants, cf., Bruner's work (eg., 1973, 1976)) and communication development has been studied with three population samples: (1) a sample of 46 middle-class, white infants (ages 8 to 13 months) and their mothers was observed in a cross-sectional design; (2) a similar sample of 12 infants and their mothers was followed longitudinally for a five-month period (6-11 months) predicted to include critical changes in pre-language communication development; and (3) a sample of ten low-income Black and Hispanic infants has been followed longitudinally for 12 months from about 8-20 months of age (This project is still in progress and will continue for one more year).

One important aspect of these projects is the concern for construct validity in methodological design. Several precautions concerning data collection of information about developmental phenomena have been taken, eg., (1) several sources of information were used; these include laboratory procedures, naturalistic home observations, and mother-kept diaries; (2) longitudinal and cross-sectional designs were both used to allow for maximum efficiency and depth of information; and (3) analyses of grouped data as well as of patterns of individual change were employed.



The findings from these studies indicate generalizable occurrences such as (1) the correlation of cognitive ability and communicative competence; (2) the relationship of specific behaviors of mothers and characteristics of infants' communicative behaviors, and (3) the developmental relationship of pre-language communication and first word use. These findings presented within the proposed theoretical framework address the issues thoroughly and from a grounded theoretical approach. In Grover Whitehurst's commentary in the 1981 SRCD monograph by Flavell, Speer, Green and August, the concluding sentence is: "communication, sitting as it does at the intersection of cognition and social behavior, is as good a drawing board as we are likely to find for the next generation of developmental theory." It is on this drawing board that I propose to present my work.

### Review of Relevant Literature

In earlier investigations (Harding & Golinkoff, 1979; Harding, 1983), the process of communication development has been examined, specifically the transition period into intentional communication which has been identified as occurring at about 9 or 10 months of age (see Bruner, 1976; Bates, 1976). In these studies it was observed that pre-language infants do appear to begin to use behaviors to communicate (as defined in Harding, 1983) and that caregivers (at least mothers) interpret these behaviors as communicative. However, in a longitudinal study of 12 infants from the ages of 6 to 12 months, it was concluded that "intentional communication" was not an event or an accomplishment but rather an on-going series of developmental changes related to cognitive ability and social experience. There appeared to be no one point at which the child came to be an intentional communicator. Instead there was a hierarchical progression of developing the ability to intend and to communicate. In this regard, the study of the process of communication development appears to be an exemplary focus of study for the examination of development in general.

It is in this context that the continuation of a study of the development of intentional communication is proposed. Although it is clear that pre-language communication development has been focused on by many researchers in recent years, it is also clear that major issues have yet to be resolved, particularly those that address the mechanisms of developmental change (cf., Golinkoff, 1983).

A critical issue in the study of developmental psychology has been that investigation, both theoretically and empirically, of the mechanisms and process of psychological change. Traditional approaches to the investigation have focused on characteristics of the individual or on aspects of the environment in accounting for change. Although interactionists have long been calling for a change in emphasis from either the



individual or the environment to the interaction between both, it is not clear that either theory or methodology has allowed for or followed this approach. This project calls for a renewed effort at investigating psychological change as an interactive process and posits the construct of meaning as a possible focal point for investigating both mechanisms and process of developmental change. The assumption is that the development of meaning requires the interaction of individual and environment and in addition represents a dialectical process basic to developmental change in that meaning develops while providing both the source and goal of that development.

The following discussion will attempt to demonstrate that (1) meaning represents the content, context and conduit of developmental change and (2) that by focusing on the developmental process of meaning a re-direction of the scientific study of psychological change will necessarily follow in order to include not only individual and environment but also process. This re-direction is viewed as critical if clearer descriptions and explanations of mechanisms of change are to be formulated.

Others have examined the recurrent nature of the question, "What is the meaning of meaning?" Such questions can throw the philosophical inquirer into an infinite regress and in proposing that investigations of developmental change focus on meaning one must be certain that the benefits of such a focus outweigh the costs of potential confusion. In general, this problem has been dealt with by either limiting the boundaries of the definitions of meaning or by agreeing to agree on a general understanding of meaning and proceed from there to specific modes and standards of meaning. Whether or not meaning is accorded status as a factor open for scientific study, it is recognized as having psychological reality, both for the scientist and for the subject. In fact, in an ordinary or commonsensical fashion, there appears to be no disagreement that the development of an individual within the human community includes the process of entry into ordinary, commonsensical "meaning". It is in this framework that meaning provides for the content of development and traditionally it is in this sense that psychologists have studied developmental change. An adult standard of the "common sense" (eg., of intelligence, motivation, self) is proposed; the developing child is studied in order to examine variations from and/or approximations toward that common sense. However, a problem has arisen as investigators honed in on critical points in development, for example the transition into intentional communication. It became clear that not only was the child learning to mean, but that the child was also learning from meaning. The parent who was engaged in inferring intention and establishing shared attention was clearly providing a context of meaning of which the child was a part even as the child was developing the ability to establish his/her own contexts of meanings. Only as investigators became able to broaden the focus of study to include not only the developing



child mastering the content of meaning but also the developing context of meaning did it become clear that a dialectical process was occurring. The impact of a meaningful but changing context set up (through a caregiver's inferences and actions) to cause perturbations in the child's social and nonsocial environment not only required but followed from the reorganization of the child's processing of meaning in the interpretation of self, others, and objects. This process of change appears as the interface in the process of the organism "making sense" of its own functioning and of the human environment, "making sense" referring here not to the person to whom something makes sense of to the thing being made sense of but rather to the process through which meaning is engendered. It is in this process that meaning becomes not only content and context but also conduit or mechanism of developmental change.

It is this process of "making sense" that requires a re-direction of scientific study. Focus on context even in the best tradition of ecologically valid study is not sufficient if one is to take into account process of change in addition to the on-going interaction of individual and environment. Clearly longitudinal studies are called for involving multiple sources of data collection, for example laboratory as well as home-based study. Traditional quantitative methodologies must be balanced with qualitative methodologies using subjective information, for example, from interviews and diaries. Pooled resources from research centers emphasizing varied approaches (eg., cognitive, psychoanalytic, social and perceptual) will make this intensive study possible. While calling for such change in research procedure, even more critical at this point is a change in emphasis and assumptions to include not only the interaction of individual and environment but also the interactive process as the individual comes to interpret meaning, to intend meaning and in general to mean. The proposed manuscript will use data from earlier research studies examining communication development to emphasize how mothers and infants come to mean as a co-developmental process.

In a review of Lock (1978), Atkinson (1980) emphasized the problem that few discussions of pre-verbal communication development address developmental mechanisms. Atkinson questioned specifically a process these studies supported:

How does the mother acting as if the child had an intention manufacture such an intention? -- the main social factor, as far as the development of communication is concerned, is the adult's interpretation of the child's actions as communicative, resulting in the development of intentional structures, but again, we are offered no insight as to how this is achieved (pp. 580-581).



Atkinson concluded that the difficulty of discussing developmental mechanisms, at least for the theorists and researchers represented in Lock's (1978) collection,

emerges from a general failure for approaches adopting "social relations" as a central theoretical construct to say anything clear about the causal role of such notions (p. 580).

The studies referred to in this project differ from those reviewed by Atkinson. A central theoretical construct is cognitive development. The infant's cognitive construction of the world is assumed to be basic to social relations, and as Piaget (1971) posited, the developing cognitive structures set the parameters within which the environment is known and acted on at any given time. The infant's ability to act in social interactions, eg., to communicate, is therefore dependent on his level of cognitive development.

In the present study as well as in others (for example, Bates' work, 1975, 1976; Harding & Golinkoff, 1979), cognitive level was found to be related to communication development. In fact, specific cognitive abilities were found to precede the development of the related communicative behaviors.

In addressing Atkinson's question: "How does the mother acting as if the child had an intention manufacture such an intention?", the observation that cognitive abilities precede communication development indicates that the infant's ability to (1) separate events into means-end sequences, (2) recognize causal sequences, and (3) use himself and others as causal agents, provides the means through which the infant begins to recognize the regularity of the causal sequencing of his own behavior and the mother's behavior.

The infant's behavior in general changed from disorganized to instrumental to intentional presumably because of both his developing cognitive structures and the mother's interpretation and reaction to what she inferred as intentional behaviors.

Through information drawn from mother-kept diaries, mothers appeared to accurately (at least in agreement with experimenter observations) assess their infants' communicative behaviors. The infants' uses of communicative behaviors as described by the mothers were coded according to the hierarchical sequence used to code the infants' behaviors observed in the laboratory.

Mothers seemed "tuned in" to their infants' behaviors and, except perhaps at six months, were aware of and reacting to the highest level of communicative competence available to the infant. It is particularly interesting that in all instances except two, when infants were observed using intentional



vocalizations their mothers also reported this level of development in their diaries. Mothers were in fact more consistent in matching their reports with observed behaviors at the level of intentional vocalizing than any other. This finding supports the hypothesis that infant vocalizations are particularly salient behaviors interpreted and reacted to as communicative.

By keeping pace with her infant's developing abilities and requiring the most advanced behaviors available to the infant, the mother provided the environment necessary for development, that is, an environment conducive to change.

In his classic treatise on equilibration, Langer (1969) described the process of change as follows:

The child is an active operator whose actions are the prime generator of his own psychological development. When he is in a relatively equilibrated state, he will not tend to change; he will only change if he feels, consciously or unconsciously, that something is wrong. This means that both affective and organizational disequilibrium are necessary conditions for development (p. 36).

The developmental question, according to Langer, is: "in what way he (the child) is able to assimilate a given type of perturbation at successive stages of development -- to recognize that it is a perturbation and that something is wrong" (p. 36).

It appears that the mother's behaviors may both set up a perturbation and prepare the infant for the recognition of it as being something wrong. Her behaviors initially allow the infant's behaviors to become goal-directed, i.e., as the infant becomes cognitively aware of goals, the mother makes his/her early attempts at goal achievement successful. As the infant operates with more organization, s/he continues to participate in the achievement of goals. By inferring intent and reacting to his/her behaviors consistently, she orders the infant's behavior in the world. However, the mother appears to anticipate her infant's increasing abilities and begins to alter her supporting role by requiring more specific behaviors from her infant before she will act. By altering the environment, she sets up the perturbation required for development.

According to recent interpretations of equilibration theory, and I quote from Kaufman's (1977) review of Riegel and Rosenwald (1976), "the continuous dialectical interactions between a developing individual and a changing world lead to changes."

It is proposed that disequilibrium brought about within the communicative context of the mother-infant interaction, provides the necessary conditions for, in Langer's words, "the energetic



or emotional force for change in action to be activated" (p. 36). The infant changes his actions and, through the observed sequence of developmental levels, begins to communicate.

There is nothing magical about the mother's inference of intention leading to the development of intention in the infant. Rather her inference influences her behaviors; she acts consistently and contingently on the infant's behaviors allowing the infant's developing cognitive abilities to operate on and organize an ordered environment. Then the mother's inferences about the infant's increasing abilities appear to cause her to alter her role thereby setting up a perturbation in the infant's environment. The infant recognizes a change in both his cognitive knowledge of the world and the social context he is adapted to and reorganizes his behavior.

### Procedures

The principal investigator will spend 16.6% of her time (the equivalent of one third of the course load per semester) from September, 1984 to May, 1985 and 100% of her time from June to August, 1985 drawing together the findings from the three studies referred to above. She will interpret these empirical findings within a theoretical framework designed to clarify developmental mechanisms. In part this interpretation follows an equilibration model integrating the developing cognitive skills of the infant with the social context in which communication occurs. During the period from September to December, 1984 a graduate assistant will assist in the qualitative analysis of the mothers' diaries and videotapes. Since a major thrust of this project is on the mothers' interpretation of the infants' behaviors and intentions, complex analyses of these interpretations are required. In addition, careful comparison of the mothers' interpretation (based on diary reports) with actual behavior (based on laboratory and home observations) will be made. Each phase of this analysis will require the assistance of both a graduate student and a work/study assistant who will carry through technical tasks. All analysis has been completed except for the qualitative review of the diaries and related behaviors.

### The Significance for Theory and Implications of the Results of this Project

First, this project is intended to extend our knowledge of the developmental process in young children. Since it is a compilation of longitudinal studies, the developmental mechanisms involved during infancy can be examined. The longitudinal design also permits the observation of the predicted commonalities in developmental patterns between the varied populations observed.



It is unfortunate that little is known (at least through psychological research) about groups within our own society who are not middle-class and white. The few research studies done with groups outside this typical population are usually directed at intervention and temporary developmental delays are expected. This project in contrast is being proposed with the assumption that general patterns of development will be observed in this normal, although culturally different, group.

Second, this project proposes to investigate the inter-relationship of several dimensions of development: cognitive, social and communication development. For the purposes of study, it is necessary to separate early behavioral evidence of achievements in these areas, but this project should further our knowledge of how these various dimensions develop and interrelate during the first years of life.

Third, in addition to general developmental patterns, this project will be investigating individual differences in infants' development and in caregiving environments. Specific characteristics of the interactions between infants and mothers have been identified as facilitating development (cf., Dore, in press). This project will extend our knowledge of these characteristics.

Fourth, this project should set a standard for carrying out a series of empirical studies within a theoretical framework. This broad view of developmental change allows for a critical investigation of developmental mechanisms over time.

#### Products Resulting from this Project

The anticipated product is a book or monograph describing this work in its entirety and in relation to other research on early development. A three-page preliminary outline has been sent to Susan Milmoe at Cambridge University Press. Although the reviews were favorable, Ms. Milmoe asked for a complete manuscript prior to making any commitment. It appears likely that a book or monograph following the described format would be published. Doctoral level students involved in this project will be developing dissertation projects based on this project.

#### Anticipated Time Schedule

September, 1984 - May, 1985 -- Principal investigator performs qualitative analysis with the assistance of a work/study student on the mothers' diaries. A graduate assistant assists in the qualitative analysis from September, 1984 to December, 1985. During Summer, 1985, the principal investigator completes a manuscript and submits it for publication.



Budget:

All budget items are directed at providing time for final qualitative analyses of the diary data and writing and preparation of the proposed book or monograph. Specifically, the principal investigator will spend 1/3 of her time each of two semesters (September, 1984 to May, 1985) directing the qualitative analysis and preparing preliminary draft of the manuscript. Negotiations with publishers will also be carried out. A graduate assistant will participate from September, 1984 until December, 1984 in the data analysis (20 hours per week). A work study student will perform the technical tasks (coding videotapes, tabulating quantitative data, entering data into computer, etc.) for 120 hours over the year's time.

Budget

Personnel

Principal Investigator	
16.6%, 9 months	\$ 4,812
100 %, 1.5 months	4,812
Research Assistant	
(graduate assistant)	
20 hours/week, 4 months	2,400
Work/Study Assistant	
\$4/hour, 120 hours	480
Total Salaries (wages)	12,504
Fringe Benefits @ .143	1,788
Total Personnel	14,292
Other Manuscript Preparation	100
Indirect Costs	1,439
<u>Total</u>	\$ 15,831



### Statement of Contribution to Career Goals

The proposed project is necessary to my career development as a researcher in at least three ways.

(1) This project is the logical next step in my research program. Early in my career in developmental psychology I studied developmental mechanisms in relationship to the communication development of white infants, reared at home, from middle-class professional families. In my interest to develop a theory of these processes, I found it necessary to broaden my focus to include other populations. Therefore, I also observed minority group infants of non-professional working mothers. My earlier findings of developmental patterns have generalized to this contrasting population, providing empirical evidence supporting the universality of developmental processes. It appears clear to me that the development of communication provides a framework for the study of developmental mechanisms in general. Based on a commitment to presenting empirical data within a theoretical framework, a book or monograph appears to be the necessary outcome of this body of work. The emphasis of the proposed manuscript on cognitive and social characteristics of both the infant and of the caregiving environment should provide information on the etiology of developmental universals and variations, as well as closure on this first aspect of my work as a "young scholar."

(2) At the moment two doctoral candidates are actively involved in this research. They will extend the program with their dissertation studies in the areas of peer interactions and sibling relations. In addition the proposed project will generate data which can involve students at varied levels in their academic careers.

(3) Loyola is actively encouraging research programs, particularly those that are related to scholarly and humanistic outcomes. By carrying out the proposed project, I will maintain my status as a researcher and contribute to Loyola's reputation as a research center.



CAROL GIBB HARDING  
SEPTEMBER 1983

Home Address:

1430 Elmwood Avenue  
Evanston, Illinois 60201  
(312) 475-4036

Office Address:

Department of Foundations  
College of Education  
Loyola University of Chicago  
820 North Michigan Avenue  
Chicago, Illinois 60611  
(312) 670-3076

Education:

- Ph.D.....Department of Educational Studies, University  
of Delaware, Newark, DE 19711 (1981)  
Dissertation: The development of the intention  
to communicate: The relationship of cognitive,  
social and communicative development.  
Major Advisor: Dr. Roberta Golinkoff  
Areas of Specialization: Human development,  
social cognition, language and communication  
development.
- M.S.....College of Education, Indiana University of  
Pennsylvania, Indiana, PA (1966)  
Major: Elementary Education  
Area of Specialization: Language and Communication
- B.S.....College of Education, Indiana University of  
Pennsylvania, Indiana, PA (1965)  
Major: Elementary Education  
Area of Specialization: Language and Communication
- Special Education  
Certificate.....George Peabody College for Teachers, Nashville,  
TN (1968)  
Major: Education of the Socially and Emotionally  
Maladjusted

Experience:

Assistant Professor, Foundations and Special Education, Loyola University  
of Chicago, Chicago, Illinois, September 1980 - present.

Director of Special Education, Loyola University of Chicago, September  
1981 - present.

Instructor, EDF 410, Educational Psychology, Department of Educational  
Studies, University of Delaware, Newark, DE, 1977-1979.

Classroom Teacher, Elementary Education and Special Education, New  
Castle County School District, Newark, DE, 1979-1980, 1967-1973.



Awards and Fellowships:

Research Stimulation Award, Loyola University, June, 1982-83.

Summer Research Award, Loyola University, June-August, 1981.

Research Fellowship, College of Education, University of Delaware, Newark, DE, 1978-1979.

Research Assistantship, National Institute of Mental Health Small Grant #1-RO8-MH 29974-01, with Dr. Roberta M. Golinkoff, 1977-1978.

Teaching and Research Assistantship, University of Delaware, Newark, DE, 1974-1977.

Professional Activities:

Manuscript Reviewer, Journal of Infant Behavior and Development, Human Development, American Education Research Journal.

Associate Editor, Jean Piaget Society Newsletter: Genetic Epistemologist, 1979-1981; staff member, 1978-1979.

Co-Chair, Committee on Elementary and Special Teacher Education, 1982-present.

Committee Member, Higher Education Advisory Council to the Illinois State Board of Education, 1981-present.

Faculty Council Alternate Representative, Faculty Advisory Committee of the Illinois Board of Higher Education, 1982-present.

Committee Member, Undergraduate Recruitment Committee, 1982-present.

School of Education Representative, University Honors Council, April, 1983-present.

Committee Member, Committee on Exceptional Education, College of Education, Loyola University of Chicago, 1980-present.

Committee Member, Foundations Planning Committee, Department of Foundations, Loyola University of Chicago, 1980-1982.

Student Committee Member, Promotion and Tenure Committee, Department of Educational Studies, University of Delaware, 1978-1979.

Administrative Assistant, Institute on the Origins and Growth of Communication, sponsored by Society for Research in Child Development, Newark, Delaware, June-July, 1979.

Workshop Director, Delaware Title XX Day Care Teachers' Training, Workshop: Infant and Toddler Division, Union Baptist Church Day Care Center, Wilmington, Delaware, 1979.



Professional Activities (continued):

Group Leader, Summer Institute on Reading Research, sponsored by the International Reading Association, Newark, Delaware, Summer, 1975.

Professional Associations:

Society for Research in Child Development

Jean Piaget Society

American Educational Research Association

Council for Exceptional Children

Publications:

Harding, C.G. & Golinkoff, R.M. Origins of intentional vocalizations in prelinguistic infants. Child Development, 1979, 50, 33-40.

Harding, C.G. The development of the intention to communicate. Human Development, 1982, 25, 140-151.

Harding, C.G. Acting with intention: An examination of the development of the intention to communicate. In Feagans, L., Golinkoff, R.M. & Garvey, C. (Eds.), The Origins of Communication. Ablex, in press.

Harding, C.G. Setting the stage for language acquisition: Communicative and cognitive development in the first year. In Golinkoff, R.M. (Ed.), The Transition from Prelinguistic to Linguistic Communication: Issues and Implications, Erlbaum, 1983.

Golinkoff, R.M. & Harding, C.G. Infants' expectations of the movement potential of inanimate objects. Infant Behavior and Development, in press. Also to appear in Advances in Child Development, L. Lipsett (Ed.).

Harding, C.G. Constructing reality, negotiating niches and making sense: A review of G. Butterworth (Ed.), Infancy and Epistemology, Genetic Epistemologist, 1983, 12, 24-28.

Papers Presented:

Harding, C.G. & Golinkoff, R.M. Origins of intentional vocalizations in prelinguistic infants. Presented at the biennial meeting of the Society for Research in Child Development, New Orleans, March 1977.

Golinkoff, R.M. & Harding, C.G. Infants' perceptions of case role concepts in filmed events. Presented at the International Conference on Infant Studies, Providence, Rhode Island, March 1978.



Papers Presented (continued):

Harding, C.G. & Golinkoff, R.M. Factors related to the use of intentional vocalizations in prelinguistic infants. Presented at the annual meeting of the Jean Piaget Society, Philadelphia, May 1978.

Harding, C.G. The concept of intention, its development and relevance for the origins of communication. Presented at the Institute on the Origins and Growth of Communication, Newark, Delaware, June 1979.

Harding, C.G. & Golinkoff, R.M. Intentional preverbal communication: Contributing factors. Presented at the International Conference on Infant Studies, New Haven, April 1980.

Harding, C.G. A longitudinal study of the development of the intention to communicate. Presented at the biennial meeting of the Society for Research in Child Development, Boston, April 1981.

Harding, C.G. Mechanisms for developmental change in communication. Presented at the International Conference on Infant Studies, March 1982.

Harding, C.G. Prelinguistic vocalizations and words. Presented at the International Conference on Infant Studies, March 1982.

Harding, C.G., Kromelow, S. & Touris, M.E. Variations in infants' use of communicative behaviors with their mothers and daycare caregivers. Submitted for presentation at the AERA Annual Meetings, New Orleans, 1984.

Invited Research Colloquia:

Chicago Infant Research Group, Illinois Institute for Developmental Disabilities, Chicago, IL, March 22, 1983.

Developmental Study Group, University of Chicago, May 10, 1983.

Human Development Group, University of Illinois at Chicago, May 27, 1983.

Developmental Research Seminar, Psychology Department, Northern Illinois University, September 16, 1983.

Manuscripts in Preparation:

Variations in infants' use of communicative behaviors with their mothers and caregivers. With Susan Kromelow and Mari-Ellen Touris.

Imaginary audience scale and its relationship to cognitive development, grade level and gender. With Rosario C. Pesce.

Intentional preverbal communication: Contributing factors. With R.M. Golinkoff.



HARDING, CAROL GIBB  
Page Five

Manuscripts in Preparation (continued):

Meaning as the content, context and conduit of development.

An examination of intention in prelanguage development (Book outline submitted to Cambridge University Press).





FOUNDATION FOR CHILD DEVELOPMENT  
345 EAST 46 STREET • NEW YORK, NEW YORK 10017 • 212/697-3150

December 8, 1983

Dear Dr. Harding:

We have received your proposal to the FCD Program for Young Scholars in Social and Affective Development. Your application is missing:

- ☐ additional copies of proposal and curriculum vitae
- ☐ anticipated time schedule
- ☐ itemized budget
- ☐ contribution to career goals statement
- ☒ confirmation of institutional agreement to indirect cost policy

Your proposal cannot be reviewed by the Advisory Committee until the above material is received.

Sincerely,

Heidi Sigal  
Program Officer

hs/cf  
enc.



LOYOLA UNIVERSITY OF CHICAGO



UNIVERSITY RESEARCH SERVICES

*Lewis Towers \* 820 North Michigan Avenue, Chicago, Illinois 60611 \* (312) 670-2956*

OFFICE OF THE DIRECTOR

December 19, 1983

Heide Sigal, Program Officer  
Foundation for Child Development  
345 E. 46th Street  
New York, New York 10017

Dear Ms. Sigal:

This letter confirms the agreement of Loyola University to abide by the rules of the Foundation for Child Development concerning indirect costs, should a grant be made to Professor Carol Harding.

Loyola's audited indirect cost rate (HHS, July, 1983) is 49.7% MTDC. We will cost share these expenses, reducing the contribution of the Foundation to 10% of TDC.

Many thanks.

Sincerely,

A handwritten signature in dark ink, appearing to read 'T. J. Bennett'. The signature is fluid and cursive, with a large initial 'T' and 'J'.

T. J. Bennett, Director  
Research Services

TJB/am



LOYOLA UNIVERSITY OF CHICAGO



SCHOOL OF EDUCATION

Water Tower Campus \* 820 North Michigan Avenue, Chicago, Illinois 60611 \* (312) 670-3030

December 19, 1983

Heidi Sigal, Program Officer  
Foundation for Child Development  
345 E. 46th Street  
New York, New York 10017

Dear Ms. Sigal,

Attached please find the letter from Loyola University's Director of Research Services who has indicated the university's commitment to abide by the rules of the Foundation for Child Development's indirect costs policy. I am sorry this was not attached to the original submission of my grant proposal. Please inform me of any additional concerns. It is my understanding that the proposal will now be evaluated by the committee.

Thank you.

Sincerely,

Carol Harding, Ph.D.  
Assistant Professor,  
Educational Psychology  
Director of Special Education

CH/cg

January 5, 1984

Dr. Carol Harding  
Assistant Professor  
School of Education  
Loyola University of Chicago  
Water Tower Campus  
820 North Michigan Avenue  
Chicago, Illinois 60611

Dear Dr. Harding:

We have received confirmation of your institution's agreement to the foundation's policy concerning indirect costs. Your submission to the Program for Young Scholars in Social and Affective Development now includes all materials necessary for consideration.

We will be notifying all applicants about funding by mid-April, 1984.

Sincerely,

Heidi Sigal  
Program Officer

hs/nf



March 15, 1984

Dr. Carol Harding  
Assistant Professor  
School of Education  
Loyola University of Chicago  
Water Tower Campus  
820 North Michigan Avenue  
Chicago, Illinois 60611

Dear Dr. Harding:

I regret to inform you that your proposal, "An investigation of developmental mechanisms in the development of intentional communication," was not among those selected for funding under the FCD Program for Young Scholars in Social and Affective Development. Available funds allowed for the support of only 16 of the 141 eligible proposals submitted. The large number of worthy candidates made the selection process a very difficult one.

My colleagues and I want to thank you for sharing your proposal with us and wish you success in your research career.

Sincerely,

Heidi Sigal  
Program Officer

hs/fw