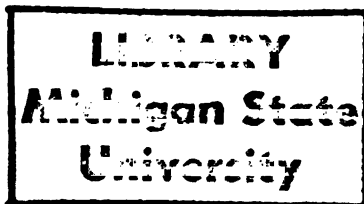


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Toward an Ecology  
of Early Adolescent Sex Role Development:  
Attitudes and Behaviors

presented by

Christine Seipke Nelson

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of the requirements for

Ph.D. degree in Family and Child Ecology

*Joanne G. Keith*  
Major professor

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TOWARD AN ECOLOGY  
OF EARLY ADOLESCENT SEX ROLE DEVELOPMENT:  
ATTITUDES AND BEHAVIORS

By

Christine Seipke Nelson

A DISSERTATION

Submitted to  
Michigan State University  
in partial fulfillment of the requirements  
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DOCTOR OF PHILOSOPHY

Department of Family and Child Ecology

1985



## ABSTRACT

### TOWARD AN ECOLOGY OF EARLY ADOLESCENT SEX ROLE DEVELOPMENT: ATTITUDES AND BEHAVIORS

By

Christine Seipke Nelson

This study examined the development of male and female early adolescent sex role attitudes and behaviors in an ecological context as defined by Urie Bronfenbrenner (1979). Based upon the concepts, hypotheses, and propositions described by Bronfenbrenner, selected exosystem, microsystem, and human variables and their relationship to early adolescent sex role attitudes and behaviors were examined. The exosystem variables were maternal employment, duration of maternal employment, and father's attitude toward mother's employment. The microsystem variables were interactions between the parents' sex role attitudes and the amount of time the parent spent with the child and the parents' sex role attitudes and the level of closeness that the child reported feeling for the parent. The human variables were chronological age and parental perceptions of the early adolescents' pubertal age.

Data were the results of a state-wide survey of early adolescents and their parents conducted in 1983. Youths were interviewed in their homes and parents responded to a

questionnaire. Subjects were selected using a stratified multi-stage cluster sampling technique.

Hierarchical multiple regression was used to test both early adolescent sex role attitude development and behavior development models for females and males. The same models were tested for female early adolescents. Two significant models were found. These were for male and female early adolescent sex role attitude development. The models included no common significant variables. The level of traditionalism of female early adolescent sex role attitude development was significantly influenced by maternal employment, the level of traditionalism of the father's sex role attitudes in interaction with the amount of time he spent with his daughter, and chronological age. The level of traditionalism of male early adolescent sex role attitude development was significantly influenced by the level of traditionalism of the mother's sex role attitudes in interaction with the level of closeness that the son reported feeling about the mother, and the mother's and father's perceptions of their son's pubertal age. The exosystem variables accounted for the most variance in the female model; the human system variables accounted for the most variance in the male model.

Bronfenbrenner, U. The ecology of human development: Experiments by nature and design. Cambridge, Massachusetts: Harvard University Press, 1979.

## ACKNOWLEDGEMENTS

This dissertation, as well as the other work leading to the degree for which this is the final requirement, would have been impossible without the love and support of many people who gave a variety of gifts in order that it could happen. I would like to acknowledge a very few of these people.

My doctoral committee was always demanding, yet patient. Joanne Keith, as the chairperson of this committee, was a model for these qualities. Her high expectations, coupled with loving support, stretched me to not only achieve my potential, but to develop new potentials. I also want to acknowledge Dr. Margaret Bubolz, not so much for her work with my dissertation, although I appreciate that, but for her presence in this department. Her quiet, but steadfast, commitment to an ecological approach provided the context for my six years of work in the department.

My parents, as well as those of my husband, were also a part of this support process. Their commitment to my growth, even though it accompanied concerns about their grandchildren, is cherished. My academic work must have seemed very far removed from them and not nearly as important as other commitments in my life, but because of their trust in and commitment to me, they tried hard to understand what I was doing and why it was important. This may be most true of my

mother. My need to live my life in a way different than she had was sometimes difficult for her. I appreciate and acknowledge her sacrifices.

My friend, Hildi, too, needs to be acknowledged. Often when longtime friends develop different goals it means the end of their friendship. My dream was not Hildi's dream. But this never stopped her from supporting this dream as mine and as such, something to be honored and treasured.

I will be anxious, in the future, to see how my daughters, as grown women, see their role in this accomplishment. Certainly, their lives have been different than they might have been if their mother had not been pursuing an academic goal. I am grateful to Katie, who, even, as a little one, seemed to appreciate the importance of this in my life. Emily, too, seems to understand and accept the role of "work" in her mother's life, although she is just two years old. I hope that as they grow they see that any time I spent away from them was also for them, as well as for me.

The most sustaining support in this long, difficult process of earning this degree was my husband, Randy. His ongoing commitment to my growth as a person and the development of all that I can be is the gift of a lifetime. I am truly fortunate to be able to share our children and my life with him.

There are many others. I hope that over the past six years that I have acknowledged them in our daily interactions and that they understand why I couldn't include them here.

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## CHAPTER 1 INTRODUCTION

### BACKGROUND OF PROBLEM

Early adolescence has been defined as the years between ten and fourteen years of age. The study of early adolescence as a stage of development is a fairly recent phenomenon. The reason for this is sometimes difficult to understand, for as Kagan (1972) states, it is clearly a stage unto itself, marked by rapid growth, second only to that in infancy. In addition to these biological changes are psychological, social and emotional changes.

Lipsitz (1980) refers to the group of individuals this age as "growing up forgotten". She cites the dearth of research on biological, socio-emotional, and cognitive changes which early adolescents are undergoing. Hill (1983) also discusses the need for early adolescent research and identifies six research priorities:

1. Foster basic programmatic research which relates directly to the major issues in psychological development during adolescence.
2. Foster basic and applied research on the effects of organizations on adolescent behavior and development.
3. Foster basic and applied research on various kinds of "health " education.
4. Foster research on socialization for work and family roles.
5. Foster research on the social perception of adolescence and its determinants.
6. Foster the establishment of at least four university-based, regional centers of excellence for the

study of adolescence.

This research incorporated aspects of two of the recommendations; first, research related to sexuality and second, socialization for work and family roles. Sex roles are related to sexuality when sexuality is defined in its broadest context. In our culture, the concept of sex roles is vitally linked to socialization for work and family roles. In a section on sex roles, Hill (1983) discussed the need to look beyond parents as sex role influences. He commented that an ecological approach, such as that of Urie Bronfenbrenner (1979), provides a framework for the examination of the many influences on early adolescent development. This approach chosen for this study incorporates aspects of traditional sex role development theory and two of the newer approaches.

The most recent theories that attempt to explain sex role development are the life span approach theories (Worrell, 1981; Katz, 1979). This model "recognizes that sex roles are complex and consist of multiple sets of attitudes, values, preferences, behaviors, activities, and aspirations" (Worrell, 1981). The life span model has several age related stages which each have specific content and influences. From this standpoint, this model goes far beyond other theories because it looks at the individual, as Hill suggested, and the many layers of his or her environment. It does not limit itself as do the older, psychological theories of identification, social learning and cognition, to the

immediate environments of family and peers. A major drawback to the life span approaches, is, however, the division of early adolescence into two life stages: childhood and adolescence. As we have seen in the previous discussion, it is necessary to study early adolescence in its own right.

It is also necessary to contrast the development of girls and boys. In our culture, gender differences are so prevalent that two models of sex role development are necessary: one for males and one for females. Worrell (1981) discusses this in her review and Katz (1979) incorporates this differentiation in her model.

#### PURPOSE OF THE RESEARCH

The primary purpose of this research was to develop models for early adolescent male and female sex role development using an ecological approach. In order to accomplish this, Bronfenbrenner's theory of human development, as articulated in his book, The Ecology of Human Development, was applied to early adolescent sex role development. Hypotheses were generated from Bronfenbrenner's hypotheses and propositions as well as the related literature. The microsystem environment of the parent-child dyad, the exosystem environment of maternal employment, and the macrosystem of societal beliefs about sex roles were examined for their impact on early adolescent male and female sex role attitudes and behaviors. Bronfenbrenner discusses one more subenvironment, the mesosystem, in his book. This subsystem, made up of those having direct impact on the daily life of the

early adolescent, such as peers and teachers, was not examined in this study.

A secondary purpose of the study became the testing of sections of Bronfenbrenner's theory. Published in 1979, this work has expanded many professionals' concepts of development. The framework has been applied to the area of child maltreatment (Belsky, 1980; Garbarino, 1979), adolescent development (Hamilton, 1982) and school crime (Garbarino, 1978). These researchers did not, however, test the propositions and hypotheses. They simply used the major concepts as a framework for looking at their topics.

#### RESEARCH QUESTIONS

The following research questions were posed in an effort to understand the relationship between early adolescent male and female sex role development and their relationship to the environment:

1. What is the role of the parent-child dyad (microsystem) in early adolescent male and female sex role development?
2. What is the role of maternal employment (exosystem) in early adolescent male and female sex role development?
3. What is the role of societal beliefs (macrosystem) in early adolescent male and female sex role development?
4. What age-related characteristics of the early adolescent male and female organisms are important to his or her interactions with the subsystem environments?
5. What is the relationship between these subsystems and early adolescent male and female sex role attitudes and behaviors?

## CONCEPTUAL FRAMEWORK

An ecological approach to the study of any living thing has three major components: the system (or organism), the environment, and the interactions between these two concepts. Urie Bronfenbrenner articulates his theory of the ecology of human development in his book, The Ecology of Human Development (1979). In it, Bronfenbrenner specifies the organism as the individual. He then defines the layers of the environment which surround the individual as the micro-, meso-, exo-, and macro- systems. These environments have biological, sociological, psychological, physical and economic characteristics which influence the development of the individual.

### Historical roots of an ecological approach

Ernest Haeckel coined the term "oecology" in 1870 in an attempt to formulate a logical scheme of the zoological sciences. "It was defined as the study of the interrelationships between organisms or life and the environment, both organic and inorganic" (Bubolz, 1969). Bubolz describes how by the turn of the century this concept was divided into two sub-concepts: autecology and synecology. Autecology became used for the ecology of animals; synecology became the term used for the ecological study of plants. Tansley reunited these concepts with the term "ecosystem" in 1935 (Boughey, 1968). This term was defined as all living things in interaction with their non-living habitat.

During this time (1920's), Park and Burgess introduced the concept of human ecology to sociology. Based upon the Darwinian concepts of web of life, balance, and competition, human ecologists in sociology chose to study the biotic level of humankind. They examined the basic, non-thoughtful, subsocial adjustments made in the struggle for existence. Cultural factors were excluded. In the 1930's the exclusion of cultural factors came under severe criticism. The study of relationships restricted to the biotic level were found lacking. There was a growing concern that cultural factors must be explored. An example is Burgess' concentric zone theory, developed to explain land use. Empirical studies did not support this theory. Cultural values needed to be addressed in order for the theory to more closely fit the data.

While human ecology was developing in sociology, Kurt Lewin (1935), a psychologist, introduced his equation  $B=f(PE)$ . This equation stated that behavior is a function of the interaction between the person and the environment. Although few psychologists disagreed with this major tenet, psychology on the whole continued to build a body of knowledge about individuals without studying those individuals as organisms in their environments. When the environment was studied, the research was conducted primarily by environmental psychologists whose areas of interest were human spatial behavior, territoriality, privacy, and crowding. There seems to be a parallel here with the

sociologists; an early focus on the physical environment. In the 1950's Barker and Wright (1954) studied the "psychological ecology of an American town", breaking from the tradition of primary focus on physical environments.

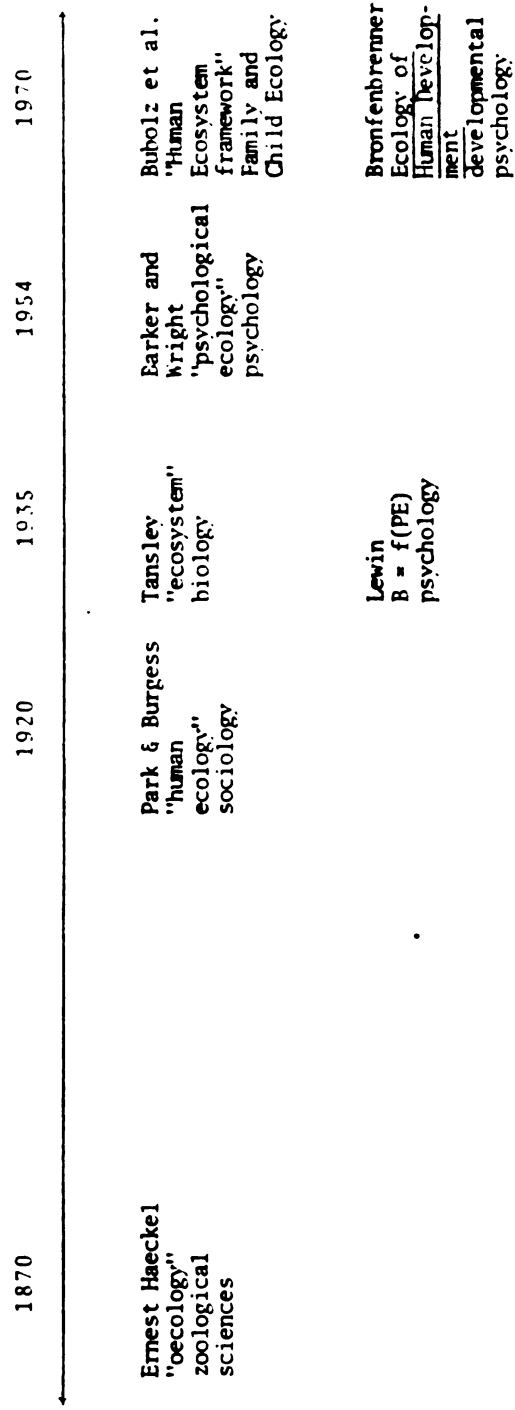
Bronfenbrenner (1979), criticizes both the Barker and Wright (1954) study and the later 1973 Barker and Schoggen research:

Both groups have adapted to the study of human behavior a model originally developed for the observation of subhuman species. Implicit in this model is a concept of the environment that may be quite adequate for the study of behavior in animals but that is hardly sufficient for the human case: it is limited to the immediate, concrete setting containing the living creature and focuses on the observation of the behavior of one or, at most, two beings at a time in only one setting (p.21).

Bronfenbrenner then states that the understanding of human development requires examination of multiperson systems of interaction not limited to a single setting and must take into account aspects of the environment beyond the immediate situation containing the subject. This position is much like that of the human ecologists at Michigan State University at the present time. Figure 1 illustrates the historical roots of an ecological approach.

Bronfenbrenner's theory of the ecology of human development was chosen as the conceptual framework for this research. It fits the concepts of the research and the perspective of the researcher. It also provided a well-developed theory which has not been verified.

FIGURE 1. Historical Roots of an Ecological Perspective





### Main assumptions of the Bronfenbrenner approach

The following assumptions are implied or articulated by Bronfenbrenner (1979):

1. In order to examine developing humans, it is necessary to examine their interactions with their environments and to look beyond single settings to the relationships between those settings.
2. The person's development is profoundly affected by events occurring in settings in which the person is not even present.
3. Within any culture or subculture, settings at all levels of the ecological environment tend to be very much alike.
4. Settings (see 3) can change. This assumption has implications for changes in environments other than the one in which it is the setting. Because the environments are interrelated, a change in a setting in one environment has implications for changes in settings in other environments.
5. "Perceived" reality has greater implications for human development than does "objective" reality.
6. Environments need to be analyzed in systems terms, as opposed to linear terms.
7. The capacity of a setting to function effectively as a context for human development is dependent upon the existence and nature of social interconnections between settings and the existence of information in each setting about the other.

### DEFINITIONS

Definitions of the theoretical concepts relevant to the research questions stated earlier are outlined below. The theoretical concepts are matched to the parallel research concepts important to the research questions.

#### Human

The humans in this study were early adolescent males and females, ages ten to fourteen .

#### Development

Development is defined as the person's evolving

conception of the ecological environment, and his or her relation to it as well as the person's growing capacity to discover, sustain, and alter it (Bronfenbrenner, 1979). This study focused on a particular type of development, sex role development.

### Environment

The environment is a set of nested structures surrounding the individual. Bronfenbrenner (1979) delimits four of these structures, definitions for which follow.

### Microsystem

The microsystem is a pattern of activities, roles, and interpersonal relations experienced by the developing person in a given setting with particular physical and material characteristics. The microsystem for this study was the activities, roles, and interpersonal relations which an early adolescent experienced with his or her mother and/or father.

### Setting

A setting is a place where people can readily engage in face-to-face interaction (Bronfenbrenner, 1979). Bronfenbrenner states that the most powerful primary settings are the family and workplace. He suggests that the peer group is a "close third (p.285)."

### Sex Roles

A role is a set of activities and relations expected of a person occupying a particular position in society, and of others in relation to that person (Bronfenbrenner, 1979). To extend this concept to that of sex role, we examined the

activities and relations expected of a person based upon their gender. This is consistent with the definitions of Worrell (1981) in her clarification of the terms sex, gender, and sex roles: "The concept of sex roles, then, in contrast to sex or gender, includes a set of organized expectancies for behaviors and activities that are considered to be appropriate and desirable for males or females in a particular culture (p. 315)."

#### Gender

Gender is the social determination that a person is female or male (Worrell, 1981). It is assigned automatically at birth based upon the person's external genitalia.

#### Relation

A relation obtains whenever one person in a setting pays attention to or participates in the activities of another (Bronfenbrenner, 1979). Relations, in this study, were between early adolescents and their parents. The relations between the two parents (where applicable) were also of interest.

#### Exosystem

An exosystem refers to one or more settings that do not involve the developing person as an active participant, but in which events occur that affect, or are affected by, what happens in the setting containing the developing person (Bronfenbrenner, 1979). In this study, the concept of maternal employment was chosen as an illustration of how the exosystem may affect the sex role development of an early

adolescent.

### Macrosystem

A macrosystem refers to the consistencies in the form and content of lower-order systems (micro-, meso-, and exo-) that exist, or could exist, at the level of the subculture or the culture as a whole, along with any belief systems or ideology underlying such consistencies (Bronfenbrenner, 1979). In this study, traditional sex role ideology served as the underlying ideology for early adolescent sex roles. The consistencies of how that ideology was acted out were analyzed.

### THE ECOLOGY OF HUMAN DEVELOPMENT

The following discussion will examine how the assumptions and concepts delimited previously provide the basis for a set of propositions and hypotheses generated by Bronfenbrenner (1979). The discussion is limited to the concepts, propositions, and hypotheses relevant to this study.

### Macrosystem/sex role attitudes

Bronfenbrenner (1979) posits five hypotheses in his chapter "The Macrosystem and Human Development". None of these are satisfactory because they all refer to settings, usually primary ones, and yet the original definition of macrosystem does not include "settings":

A macrosystem refers to the consistencies, in the form and content of lower-order systems (micro-, meso-, and exo-) that exist, or could exist, at the level of the subculture or the culture as a whole, along with any belief systems or ideology underlying such consistencies (p.26).

This definition implies that the macrosystem is embedded in settings at all levels of the environment, but not that it is a setting itself. The definition of setting excludes it from being a macrosystem because it refers to places where people can engage in face-to-face interaction. If we consider the definition of macrosystem with relation to the ecology of sex role development, we can examine sex role ideology as a belief system of the macrosystem. Traditional sex role ideology is so called because it is the ideology that has been accepted in the past. It implies that men and women are separate types with separate attributes, often opposite of each other. Thus, we have men's roles and women's roles; men's work and women's work (Hoffman, 1977). It is precisely because this belief system, as part of the macrosystem, permeates all other environmental systems, that we would expect it to exert a strong influence on the exosystem, microsystem, and human.

Bronfenbrenner discusses an aspect of role development, related to the macrosystem, in his chapter on roles as contexts for human development. This discussion examines consensus in the culture about traditional sex role ideology:

The tendency to evoke perceptions, activities, and patterns of interpersonal relation consistent with role expectations is enhanced when the role is well established in the institutional structure of the society and there exists broad consensus in the culture or subculture about these expectations as they pertain to the behavior both of the person occupying the role and of others with respect to that person (1979, p.92).

The implication is that if there is consensus in the macrosystem, consistent patterns should be apparent in the

other subsystems.

### Exosystem/maternal employment

The exosystem refers to the settings which do not involve the developing person as an active participant, but which can affect or be affected by the developing person. Bronfenbrenner (1979) states that in order to demonstrate the operation of the exosystem as a context influencing development, it is necessary to:

establish a causal sequence involving at least two steps: the first connecting events in the external setting to processes occurring in the developing person's microsystem and second linking the microsystem processes to developmental changes in a person within that setting. (p.237)

He acknowledges that the causal sequence also may run in the opposite direction. Maternal employment meets the criteria to be considered an exosystem.

### Microsystem/parent-child dyads

The microsystem refers to the pattern of activities, roles and interpersonal relations experienced by the developing person in a given setting. In Bronfenbrenner's (1979) microsystem hypotheses, delimited in his chapter on interpersonal structures, the unit of analysis is the dyad:

Hypothesis 2: Once two persons begin to pay attention to one another's activities, they are more likely to become jointly engaged in those activities. Hence, observational dyads tend to become transformed into primary dyads (p.59).

Hypothesis 3: Once two persons participate in joint activity, they are likely to develop more differentiated and enduring feelings toward one another. Hence, joint activity dyads tend to become transformed into primary dyads (p.59).

Another microsystem hypothesis which Bronfenbrenner

(1979) posits that has implications for sex role development is related to the affective nature of a dyadic relationship:

The developmental impact of both observational learning and joint activity will be enhanced if either takes place in the context of a primary dyad

characterized by mutuality of feeling (one learns more from a teacher with whom one has a close relationship). Conversely, mutual antagonism occurring in the context of a primary dyad is especially disruptive of joint activity and interferes with observational learning (1979, p.60).

In the traditional sex role literature, the same gender parent and child has been the dyad under examination. Some of the more recent literature has looked at both parents and their relationship to the adolescent's sex role development (Kelly and Worrell, 1976; Orlofsky, 1979).

Bronfenbrenner (1979) devotes a section of his theory to roles as contexts of human development. The discussion can be applied to the microsystem as well as the other subsystems. He offers this hypothesis:

The placement of a person in a role tends to evoke perceptions, activities and patterns of interpersonal relations consistent with expectations associated with that role as they pertain to the behavior both of persons occupying the role and of others with respect to that person (1979, p.92).

Children are placed in a sex role at birth, or sooner, if the gender of the child is known. Even before a child is born, parents have dreams and expectations for their unborn child based upon gender. Parents act on their perceptions of these attributes and a set of reciprocal interactions develop.

There is one other proposition which has implications for the study undertaken. It has to do with indirect influences,

second-order effects:

Proposition E: In a research setting containing more than two persons, the analytic model must take into account the indirect influence of third parties on the interaction between members of a dyad. This phenomenon is called second-order effect (p. 68).

Thus, if the mother-child relationship is examined, the father's influence on that relationship needs to be addressed. In this study, the father's attitude toward the mother's employment was examined as a second-order effect.

#### Human/Early Adolescent

As the organism, the human cannot be considered an environment. However, the early adolescent does bring him or herself to this network of reciprocal interactions with the micro-, exo-, and macro- systems. Bronfenbrenner (1979) acknowledges early in his book that the developing person is not a tabula rasa. He does not expand on this, however. He commits his discussion entirely to the environments. This approach is as unbalanced as his earlier criticism of psychologists who only studied the individual. This study deviated from testing the Bronfenbrenner theory by including variables relevant to the early adolescent as an individual: chronological and pubertal age.



## CHAPTER 2 LITERATURE REVIEW

In the following section, the literature reviewed includes early adolescence as a stage of development, sex role development theory, and the macro-, exo-, and micro-system influences on the development of early adolescent male and female sex role attitudes and behaviors.

### EARLY ADOLESCENCE AS A STAGE OF DEVELOPMENT

Early adolescence is often defined as those years between ten and fourteen. These years have been singled out as a separate stage of development only recently. This is difficult to understand, for as Kagan (1972) observed, it is clearly a stage unto itself, marked by rapid growth second only to that of infancy with corresponding social, emotional and psychological changes. Lipsitz (1980), in an extensive review of research on development and programs, refers to these children as "growing up forgotten." She cites the lack of research about and programming for this group of children. The following sections will discuss concepts and research related to early adolescence and puberty, measuring puberty, chronological and pubertal age, and the relationship between early adolescence as an age or stage and sex role development.

### Early adolescence and puberty

The reason for conceptualizing early adolescence as a stage of development separate from childhood and adolescence

is due in large part to the occurrence of puberty. Early adolescent scholars have as their premise, not always stated, that puberty is accompanied by both internal and external changes. Tanner (1978) discusses the relationship between puberty and the early adolescent shift from a concrete way of looking at the world to one of formal operations as described by Inhelder and Piaget (1958). This is an internal change with implications for how the early adolescent perceives the external world. Tanner (1978), states that "There seems every reason to suppose that Piaget's successive stages depend on progressive maturation or at least organization of the cortex (p. 79)." He implies that changes at puberty may be a factor in this maturation, but states that we must wait the results of future research. In contrast, Petersen, Tobin-Richards, and Boxer (1983), in their analysis of the effect of pubertal stages on cognition, state, "Therefore, we do not feel that we have any strong evidence linking cognition and puberty."

The other side of the relationship between puberty and early adolescence is how the persons external to the early adolescent perceive the changing early adolescent and the effect puberty has on their interactions with the pubescent early adolescent (Petersen and Spiga, 1982). What is the reaction of parents, teachers, friends, and society to the developing adolescent? Hill and Lynch (1983) theorize that the pubertal changes during early adolescence lead to changes in the ways in which parents interact with their children.

These changes, then, lead to changes in the way that the early adolescent behaves. With relation to sex roles, it is theorized that when parents perceive their adolescents as becoming men and women, they begin to interact with them in more sex differentiated ways than they did in the past. This leads to more stereotypic behavior on the part of the early adolescent. Preliminary reports from Steinburg and Hill (1978) confirm this for male early adolescents.

It is apparent that opposite outcomes can be hypothesized with relation to the role of puberty and early adolescent sex role behaviors and attitudes, dependent on the independent variable and the intervening variables.

#### Difficulties of measuring pubertal development

Petersen et al. (1983) discuss the difficulties inherent in obtaining a strong measure of pubertal development from hormonal or physical measurements. Hormonal measurements require repeated sampling of plasma controlling for exercise, food intake, medications, sleep and other activities. Even under the most optimal of conditions, interpretation is difficult because even when the hormonal levels are accurately known, other aspects affect how the body responds to this hormonal level. There are also ethical problems with repeated blood sampling of healthy children.

Physical measures are another method of measuring pubertal development. Peterson et al. (1983) report that regular and frequent measures of stature can be fitted to a curve which has statistical parameters of growth that have

validity as indicators of pubertal development. These authors also report that Tanner and others have been successful in scaling pubertal changes in secondary sex characteristics which provide objective ratings. The preferred use of this scale is by a trained rater observing a nude child. Sometimes a series of three photographs are used. Petersen et al. (1983) were not able to use this method because school districts would not give their permission to do so. The present situation is that researchers are asking the subjects to rate themselves in comparison with either standard drawings, photographs, or indices of pubertal change (Duke, Litt, and Gross, 1980; Morris and Urdy, 1980; Peterson et al., 1983). These reports have reliability and validity (Petersen et al., 1983).

#### Pubertal and chronological age

The previous discussion leads to the concept of pubertal age as opposed to chronological age. Tanner (1978), in his section on implications for educational practice and policy, provides a rationale for examining pubertal age when making decisions about early adolescents that should not be lost to fields other than the educational one to which he is speaking. He discusses the large variance in the level of pubertal development among early adolescents and concludes that there is no average fourteen year old, for example. Given this variety, Tanner (1978) discusses the need to look at this group in terms of pubertal development as opposed to chronological age.

Early adolescence and sex role development

If pubertal development is related to cognition, or if chronological age is related to cognition, certain pubertal or chronological age trends could be hypothesized related to sex role attitudes and behaviors. Formal thought, whether dependent on pubertal or chronological age, implies a growing level of abstraction with which the early adolescent perceives the world. If this growing level of abstraction is applied to sex role attitudes and behaviors, early adolescents would be expected to be more flexible or nontraditional in their attitudes and behaviors with age.

Rust and Lloyd (1982), in a study of junior high students, found that there is still stereotyping of female and male characteristics in this population. This is contrary to the finding of Payne (1981). She found that male early adolescents were more likely to stereotype male and female roles, but that in general, the level of stereotyping was low.

Payne (1981) found that sex role stereotyping occurs less in fifth graders than in third graders. Rust and Lloyd (1982) found no age differences (as assessed by grade) in the level of stereotyping. Other studies which examine the relationship between age and sex role attitudes and behaviors are discussed under the heading "Environmental influences on early adolescent sex role development."

SEX ROLE DEVELOPMENT THEORY

Worrell (1981) discusses the need to be conceptually clear and specific when examining sex role development. This need becomes apparent when the literature on sex role development is examined. The ambiguity of some terms and how those terms are used can be demonstrated with a discussion of the concept of gender. Most studies report what is commonly thought of as sex of child as male or female. Worrell, however, differentiates the differences between the concepts of sex, gender, and sex roles.

Sex is determined chromosomally (Grady 1979). Money and Ehrhardt (1972) determine sex chromosomally as well as anatomically and hormonally. Sex is a biological term. Gender is the parallel sociological term. It is the social determination that a person is either a male or female. Sex roles are the set of organized expectancies for behaviors and activities that are considered appropriate and desirable for either males or females in a given culture. However, each of these terms is under scrutiny as evidenced by Constantinople's work "A Critical Examination of the Concept of Gender." This review will attempt to use consistently these concepts as labelled and defined by Worrell (1981).

Worrell (1981) stated that at the present time no single theory adequately explains sex role behavior acquisition, continuity and change. While new theories are being developed, the traditional theories continue to influence our conceptualization of sex role development. The

traditional psychological theories are identification theory, social learning theory, and cognition theory.

### Traditional psychological theories

Identification theories, rooted in Freud's earlier work, are based upon the assumption that children adopt the behaviors, attitudes, and values of the same gender parent by age five or six. These behaviors, attitudes, and values are then consistent across time and situations. Failure to be consistent leads to deviations from the stereotyped model. Worrell (1981) points out the many drawbacks of these theories:

Critics of identification theories point to the early consolidation, and therefore the inflexibility of sex typing; the requirement of same-sex parent as the major role model; the assumption that moral and ethical structures are tied into successful sex typing; the treatment of sex-role adoption as a trait that resists situational influences; the explanation of female development in terms that are analogous, but different from the male; the devaluing and stereotyping of female development and characteristics; and the assumption that non-traditional sex-role adoptions are deviant (p. 326).

Cognitive theories emphasize the acquisition of knowledge about one's own and others' gender and the processes an individual uses to acquire and retain this information. This process is a structured, sequential one and the person is motivated by the positive value attached to his or her own gender assignment. Criticisms of these theories are that they are androcentric (based on a male prototype); individual differences within each gender are ignored; sex role stereotypes are seen to reflect some fixed

prototype from nature; and that the goal of cognition related sex roles is to be a stereotypic female or male.

Social learning theory emphasizes observational learning, various reinforcement types, and punishment as the major factors in sex role development. Children are assumed to learn many behaviors from a variety of models and to choose which of these models to display. Thus, flexibility is very possible. Criticisms of this theory are that it overestimates the importance of parents; underestimates the child's cognitive and motivational functions of self-labeling; and is too bound by external behaviors as descriptions of the child's sex typing as opposed to descriptions that the child might use for his or her own sex typing.

#### Recent theoretical developments

One of the newest sets of theories that attempt to explain sex role development is social cognition theory. In the process of being defined, social cognition theory attempts to integrate cognitive and social learning theory variables into a whole. Worrell (1982) discusses the application of social cognition theory to sex role development. She cites the emphasis on the stimulus function of gender and mediation labels in providing information about the appropriateness of an activity for the self or for others, the relevant antecedents and consequences of modeled behavior for the imitation of sex typed patterns, and the possibility of flexible sex typing based upon variations in



models, reinforcers, novel situations and the child's gradual formulation of personal sex role standards that the child self-monitors. An example of one of these theories is Constantinople's (1979) model of sex roles as rules. In this model, the complex cognitive and affective nature of the child are taken into account as well as the varieties of cognitive-developmental and social learning processes at work in the acquisition of sex roles. For the most part, the social cognition theorists have been interested in children younger than the early adolescent, except for the antecedent studies of college students.

A life span approach to sex role development is an attempt to move beyond the limited age span of the theories discussed previously. Emmerich discussed the need for such a perspective as early as 1973. Worrell (1981) delimits four ideas from Baltes, Reese, and Lipsett (1980) that are particularly relevant to the examination of sex role development over the life span:

A life span view assumes that development (a) is a life-long process, in which behavior change can occur at any point in time in the individual's life; therefore, maturity is not an end state, nor can an ideal end state be determined; (b) is influenced by the historical time in which it is occurring so that cohort (generational) effects must be considered; (c) is multidetermined and complex for any one area of behavior, so that an individual exhibits considerable heterogeneity over time and across situations and age is not the primary determinant of change; and (d) is best described, not in terms of traits or orderly sequences of change, but by a flexibility model in which multiple determinants may induce continual change (p. 328).

Worrell (1981) discusses the need for a life span

approach to be a set of multiple life span considerations, culturally relevant, free from the use of gender psychological constructs, and accommodating of individual histories. She reports that Katz meets these qualifications. Katz's theory will be described below.

Katz's (1979) model of the development of sex roles suggests that there are three overlapping but distinctive developmental levels of sex roles: Level I: learning what is appropriate for a male or female child; Level II: acquiring concepts about what is appropriate as a potential male or female adult; and Level III: behaving in ways that are deemed appropriate for male and female adults across the life span. Her model proposes that each level has stages during which cognitive and social tasks are to be acquired. These tasks are different for males and females, and have differing sets of social influences.

Katz (1979) does not consider the ages of ten to fourteen as a specific stage in her developmental schema. Grade school is conceptualized at the end of Level I and is defined as the years from six to twelve. The developmental tasks of this stage are the same for girls and boys : the elaboration of sex role content and the development of strong same-sex friendships. Katz suggests that the sources of influence, in order of importance, for this stage are same-sex peers, television, books, teachers, and parents. The stage, early adolescence, is the beginning of Level II, and encompasses the ages of twelve to fifteen years. In this

stage, the tasks are different, primarily in level of intensity, according to gender. For females, the tasks are: adjusting to menstruation, adjusting to sexual body changes, adjusting to feelings, and concern with physical attractiveness. Male tasks are: adjusting to ability to ejaculate (for early maturing), adjusting to sexual body changes (early maturing), adjusting to sexual feelings, which has a greater intensity than for girls, and concern with physical attractiveness, to a lesser extent than for females. Katz lists the sources of influence as biological factors, same-sex peers, television, books, teachers and parents.

The strengths of Katz's model are its life-span framework conceptualization of developmental tasks and ecological approach to influences on sex role development. However, its relegation of early adolescence to the years of twelve to fifteen is inappropriate, considering the growing recognition of early adolescence as what has previously been considered the end of childhood and beginning of adolescence. An example may clarify this. In Katz's model, biological influences are ranked as the strongest influence on the developmental tasks of adjusting to menstruation and sexual body changes. Tanner (1978) states that the average for menstruation is 12.8 years of age. Most sexual body changes have taken place previous to that time. Over one half of the young women in Katz's stage of early adolescence have been or are presently adjusting to the changes discussed by Katz.

Need for a life-span, ecological approach

If we consider that most of the research on sex role socialization has been limited to the mother-child dyad when children are at ages birth to six years of age (Block, 1978) it makes logical sense that there is a need for other environments than that of the mother to be examined in relation to sex role development. Block (1978) points out the need for the role of fathers to be given more attention in sex role research. She also calls for research on children other than those who are young: "...and suggests the need for systematic studies of differential socialization among parents of older children, studies that would seek to identify the nature of the relationship between socialization emphases, the stimulus value of the child (of which sex and age are determinants), and the situational press (of which sex and age are determinants)" (p.38).

The influence of environments other than those provided by parents is also a concern for those interested in sex role development. Katz, as discussed previously, clearly sets the stage for the examination of environments other than the parental environment. She is not the only one to do so, although she expresses the need the most specifically. Constantinople, a social cognitivist states: "We need, therefore, to look more broadly in our search for experiences which contribute to the child's developing store of distinctive features for sex roles (1979, p.131)." She gives as examples the need to examine the role of siblings, peers

and outside figures.

ENVIRONMENTS   WHICH   INFLUENCE   EARLY   ADOLESCENT   SEX   ROLE  
DEVELOPMENT

Macrosystem/Societal Beliefs

Bronfenbrenner's (1979) definition of the macrosystem implies that culture is so pervasive that it structures all other environments. He refers to the consistencies in the exo-, meso-, and micro- systems. The implication is that in the design of things, influence moves from the top, the macrosystem, down through the exo-, meso-, and micro-systems.

Yankelovich (1981) takes this approach in his examination of cultural and economic forces in contemporary society. Although he was not interested specifically in sex roles, this area forces itself to the reader's attention in Yankelovich's examination of the new quest for self-fulfillment. Using the concept of culture as "shared meanings", Yankelovich illustrates how changes in the psychoculture have created a tremendous number of options for women, especially, and the resulting consequences of those changes.

Hoffman (1977), in a discussion of changes in the family roles of men and women and the effects of these changes on the child's socialization, implies a different model for change and development. She acknowledges that traditionally sex differences in socialization experiences reflect adult role expectations that women will be mothers and men will be workers. She examines the role of smaller

family size, longer life expectancy, and higher employment rates for women and their implications for sex role development. Hoffman theorizes that as awareness of these social changes increases, sex linked differences in socialization may be expected to diminish with resulting diminished sex differences in behavior. This model is one of change occurring from the bottom, up. That is, changes in people's daily lives create changes in the societal beliefs and structures.

Worrell (1982) reviews the cultural expectations for gender differences in behavior of children and their reflection in the play interests and sex role conceptions of elementary school children and concludes "During the elementary school years, it appears that the children themselves live out the sex role prescriptions of the larger society (p.4)." This is confirmed by Jones (1981). Later, in a discussion of the historical time in which contemporary children have been reared, she states that for most preadolescent children, liberated attitudes have not filtered into their behavior.

Jones (1981) reports that his findings on adolescent interests are a reflection of existing societal values and expectations that are probably mediated and perpetuated by beliefs concerning sex-appropriate behaviors.

Documentation that changes in sex role attitudes have indeed taken place is presented by McBee (1984). In her discussion of the baby-boomers, that group of adults born

between 1946 and 1964, she states that a key difference between this generation and others is their attitude toward marriage and the changing role of the sexes, with a majority in favor of women working. Many of the older "baby-boomers" are parents of early adolescents.

#### Exosystem/Maternal Employment

During the past two decades, large numbers of women have entered the work market. This has been particularly true of women with children. For example, in families with children ages six to seventeen years, the rate of maternal employment in 1980 was 61 percent as opposed to 49 percent in 1970. Almost immediately, those interested in children and their development began looking at the effects of maternal employment on all areas of children's development. This review will examine two areas related to maternal employment; the development of sex role attitudes and sex role behaviors. It will focus on early adolescence, although where appropriate, literature from childhood and adolescence may be included.

#### Maternal employment and sex role attitudes

Early adolescents with employed mothers have consistently been found to differentiate less in their sex role concepts (Gold and Andres, 1978a, 1978b; Hoffman, 1974, 1975; Marantz and Mansfield, 1977; Dellas, Gaier, and Emihovich, 1979; Lamb, 1982; Chandler, Stawicki, and Styffeler, 1981; Etaugh, 1974). They are less likely to stereotype males and females and do not look at sex roles as

narrowly as do early adolescents of non-employed mothers. Daughters of employed mothers are more likely to be more nontraditional in their sex role attitudes than are sons of employed mothers (Dellas et al., 1979; Chandler, Sawicki, and Stryffeler, 1981; Gold and Andres, 1978a, 1978b). Dellas et al. (1979) observed that early adolescents in managerial and working class families were more likely to approve of their mothers' employment than early adolescents in professional families. This is in contrast to the findings of Rollins and White (1982). In their study of traditional, dual employed, and dual career families, they found that mothers and daughters in dual career families had more nontraditional attitudes about marriages and careers than the other family types.

In high school and college samples, findings were much less consistent. Griggs (1972) reported a negative relationship between maternal employment and contemporary ideology. Other studies found no relationship between maternal employment and nontraditional sex role attitudes (Baruch, 1972; Lipman-Blumen, 1972). King, McIntyre, and Axelson (1968), Meier (1972), and Broverman, Vogel, Broverman, Clarkson and Rosenkrantz (1972) report a positive relationship between maternal employment and contemporary sex role ideology. These findings imply that the relationship between maternal employment and sex role attitudes gets weaker as children move through early adolescence into adolescence.



### Maternal employment and sex role behaviors

The effects of maternal employment on early adolescent sex role behavior have been studied less, especially those activities of interest to this project, household work and leisure activities.

Cogle, Tasker, and Morton (1982) found that adolescents with employed mothers spent more time on housework than did other adolescents (ages 12-17). Medrich, Roizen, Rubin, and Buckley (1982) found that daughters, not sons, do more housework when their mother is employed. Conversely, Dellas et al. (1979) found no differences. Propper (1972), in her analysis of housework responsibilities of early adolescents of employed and non-employed mothers, found that girls were more likely to do more housework whether their mother was employed or not. Clearly, the results are mixed for this area of research.

The focus of the household work research has been the amount of time that girls or boys have spent on housework and who is doing more of it. This study examined the type of household work being done by early adolescents and the degree to which it is sex role stereotypic. This is a different perspective than that which has been examined in the past.

### Maternal employment: recommendations for research

Two major recommendations for research have emerged in the maternal employment literature: (1) examination of maternal employment as a proxy for a set of attitude variables and (2) the need for maternal employment to be

examined in a family context. The second recommendation refers to the need to examine family variables related to maternal employment and their first or second order effects on it.

Rodgon, Gralewski, and Hetzel (1977) argue that it is not maternal employment itself that is responsible for the attitudes in children but the mother's attitudes toward a variety of things, including employment, time spent with children, proper roles for men and women, and the role of husbands and fathers in child-rearing and housework which are communicated to the child. They argue that maternal employment has been treated as a proxy for these other variables, and that this has been inappropriate. This is related to the conclusions of Rollins and White (1982) in their paper on traditional, dual career, and dual working mothers and their daughters. They reported that the differences that they found were related to the nontraditional responses of the dual career mothers and their daughters.

The other need in maternal employment research is that of a family approach. As early as 1972, Propper wrote:

The methodological implications of the findings are that it may be incorrect to assume that maternal employment affects both sexes in the same way, or that girls and the mother-child relationship are most crucially affected by the mother's employment. It would be inadvisable for future studies to neglect boys and the father-child relationship. The relationship to each parent separately, as well as to parents generally, should be examined for both males and females.

Wallston (1973) stated early in the research history:

"What is necessary is studies which deal with these factors as interacting dependent variables." Hoffman (1974) suggests that the maternal employment literature must examine the "many steps in between family roles and interaction patterns, the child's perceptions, the mother's feelings about her employment, the child rearing practices..." The implication is that the effects of maternal employment on children is a very complex set of interactions that needs to be addressed from a family systems perspective.

#### Microsystem/Parent-Child Dyads

The majority of the research that has been conducted on the relationship between parental sex role attitudes and behaviors and those of their children has examined those variables in relation to young children, usually those under five years of age. The explanation for this lies in the theoretical bases of these studies. The traditional psychological theories assume that sex typing occurs at an early age and is then fixed. The implication is that related dimensions of sex role development also are fixed at this time. A life span approach, however, assumes that people change over their life time, based on the cognitive, biological, and psychological development of the person and the times in which that person is alive.

#### Parent-child dyads as microsystem and sex role attitudes

Because the life span approaches are recent, little research has been conducted to examine the relationship between early adolescent sex role attitudes and behaviors and

the family microsystem. Baruch (1975) studied the relationship between parental preference in girls, which measured which parent the child would like her life to be like, and sex role attitudes. She found no significant pattern. Emmerich, Goldman and Shore (1971) found that there was a positive relationship between early adolescents' sex role attitudes and those of their parents. This relationship was stronger in females than it was in males.

Parent-child dyads as microsystem and sex role behaviors

In studies of the antecedents of college students sex role orientations, which imply behaviors, Orlofsky (1979) found that traditional sex typing occurred where both parents modeled traditional sex role attributes and that for females, this traditional model occurred in the context of a very close father-daughter relationship in the absence of cognitive or intellectual encouragement by the mother. Kelly and Worrell (1976) report similar results. In males, it is parental affection that is related to nontraditional sex role behaviors; in females, it is cognitive or achievement encouragement and permissiveness that are related to nontraditional sex role behavior.

Orlofsky (1979) discussed the need for longitudinal studies that can begin to dissect the interactional nature of sex role development by examining the characteristics of the individual and parental reactions. He cited the limitations of a retrospective report and correlational analysis that can lead only to the examination of relationships but not

causality.

### CHAPTER 3 HYPOTHESIZED RELATIONSHIPS AND METHODOLOGY

#### HYPOTHESIZED RELATIONSHIPS

The following hypotheses were developed from Bronfenbrenner's (1979) concepts, hypotheses and propositions with support from the related literature or from the related literature only. They are grouped by environmental subsystem and thus directly parallel the research questions stated previously.

The overall research design is illustrated in Figure 2. An overview of item and scale formulations by variable follows (Figure 3) and provides an easy method for examining the variables in the following hypotheses. It includes the variable name, operational definition, question as stated and scale formulations.

#### Macrosystem/sex role attitudes

No formal hypotheses were developed with relationship to the macrosystem. However, the findings of this study are discussed in relation to the macrosystem in a later chapter.

#### Exosystem/maternal employment

Maternal employment was the exosystem environment considered in this study. Bronfenbrenner's (1979) hypotheses in relation to the exosystem examine the relationship of setting potentials to power settings. As such, they do not relate directly to the research questions being considered. However, given the definition of this environment and the

FIGURE 2.  
OVERVIEW OF RESEARCH

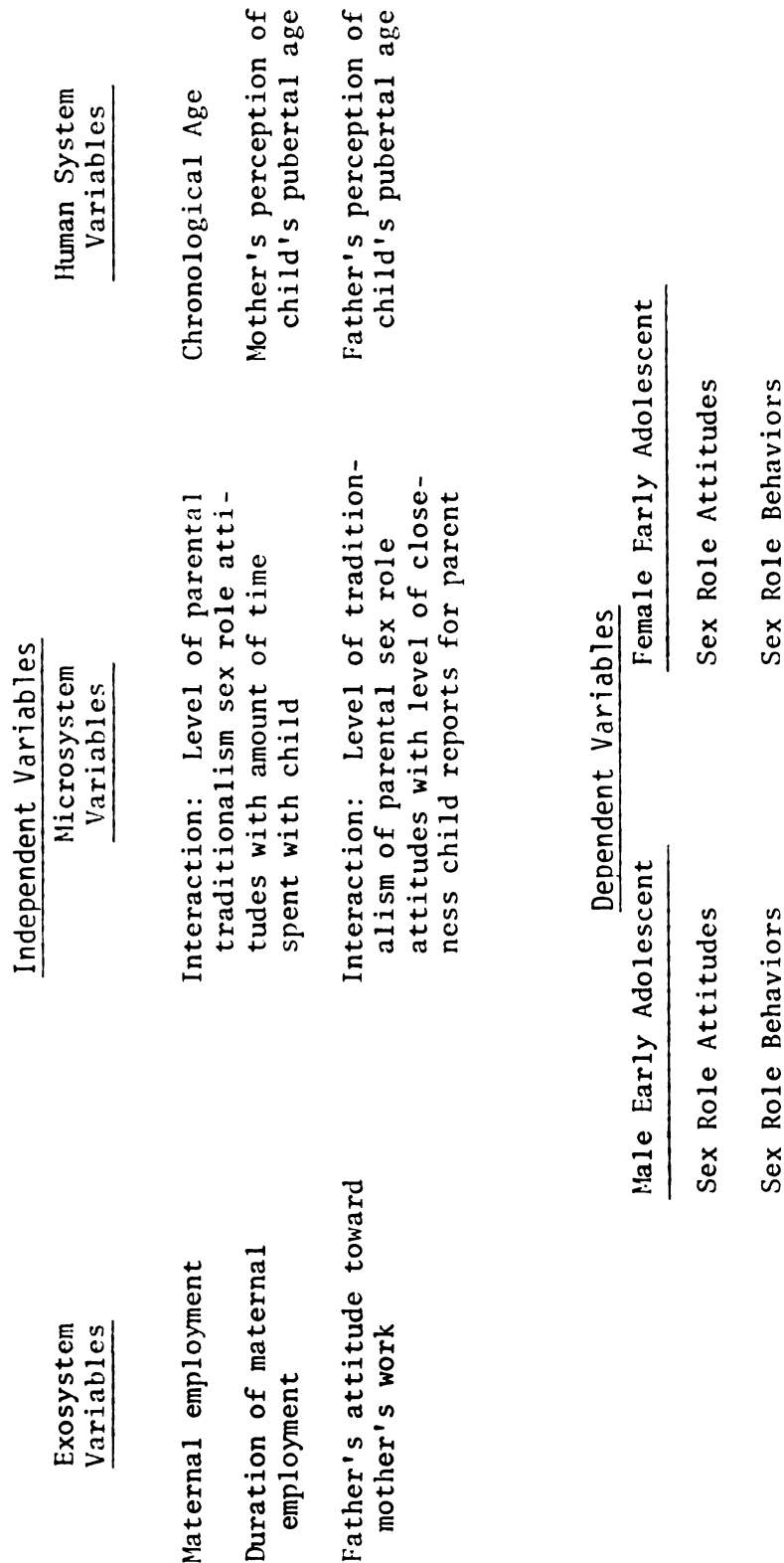


FIGURE 3.  
OVERVIEW OF ITEM AND SCALE FORMULATIONS BY VARIABLE

INDEPENDENT VARIABLES	Operational Definitions	Question as Stated	Remarks
Amount of maternal employment (HJMM80)		If you work outside the home, do you work: 1. Full time (30-40 hrs./wk.) 2. Part time (29 hours or less per week)	Others coded 0
Duration of maternal employment (HJMM81)	Number of years mother has worked since birth of child	Since your child was born which of the following describes you? 1. I have never worked outside my home. 2. I have worked part-time outside my home since my child was _____ years of age. 3. I have worked full-time outside my home since my child was _____ years of age.	Answers recoded to indicate number of years mother has been employed either full-time or part-time.
Father's attitude toward wife's work (HJMM61)	As assessed by one question, four point intensity scale	How do you feel about your spouse's work? 1. I'm glad she is doing it. 2. Most of the time I'm glad. 3. Most of the time I don't like it. 4. I don't like it at all.	DEMONO X FATTM
Interaction: (FATTM) Maternal employment (HJMM80) with father's attitude toward wife's work (HJMM61)			
HJMMSYSTEM/PARENT-CHILD DYADS	Independent Variables	Question as Stated	Remarks
Amount of time spent in joint activities: mother-daughter (SCJTHB) mother-son (SCJTHB) father-daughter (SCJTHC) father-son (SCJTHB)	Mean of nine activities rated 1-6, everyday through never, as reported by parents	How often do you do the following with the child being interviewed? 1. eat evening meal together 2. eat breakfast together 3. do homework 4. watch TV 5. play games together 6. do crafts and hobbies 7. go to church 8. go to movies 9. attend sport activities	1 = never 2 = less than once a month 3 = once or twice a month 4 = once or twice a week 5 = most days each week 6 = everyday
Level of traditionalism of mother's sex role attitudes daughters (SCJSLATC) sons (SCJSLATB)	As measured by ideology scale, adapted from Broverman et al., 1972	Below are some qualities people have. Which would you like to see your child develop? Mark how important the quality is. Circle the number in the column which is the best answer for you. (1-4, very important to not important at all) F = feminine subscale M = masculine subscale	Absolute difference between total of masculine subscale item responses and the total X 2 of the feminine subscale total item responses.



1. Be very gentle (F)
2. Make decisions easily (M)
3. Be neat in his/her habits (F)
4. Be well educated (M)
5. Be ambitious (M)
6. Never cry (M)
7. Easily express tender feelings (F)
8. Be very independent (M)
9. Be interested in how she/he looks (F)
10. Always act as a leader (M)
11. Be self-confident (M)
12. Make a lot of money (M)

See above

See above

Level of traditionalism of father's sex role attitudes  
daughters (SCDSMATC)  
sons (SCDSMATC)

#### Interactions:

SCHINTB (Levels of traditionalism of mother's sex role attitudes (SCDSMATB) with amount of time spent with son (SCDTJMB))

SCHINTG (Level of traditionalism of mother's sex role attitudes (SCDSMATC) with amount of time spent with daughter (SCDTJMG))

SCHINTB (Level of traditionalism of father's sex role attitudes (SCDSMATB) with amount of time spent with son (SCDTJMB))

SCDITMG (Level of traditionalism of father's sex role attitudes (SCDSMATC) with amount of time spent with daughter (SCDTJMG))

Child report: level of closeness toward mother (RELC 30)

As assessed by one question, four point scale, very close to not close at all

Reverse scored so that "very close" was represented by 4, highest number.

1. very close
2. Close
3. Not so close
4. Not close at all

See above, only father

Child report: level of closeness toward father (RELC 31)

See above

#### Interactions:

SCDIFSXB (Son's level of closeness toward mother (RELC 30) with the level of traditionalism of mother's sex role attitudes (SCDSMATB))

SCDIFSXC (Daughter's level of closeness toward mother (RELC 30) with the level of traditionalism of mother's sex role attitudes (SCDSMATC))

SCDIFSXB (Son's level of closeness toward father (RELC 31) with level of traditionalism of father's sex role attitudes (SCDSMATB))

SCDSMATB X SCDTJMB

SCDSMATC X SCDTJMG

SCDSMATB X SCDTJMB

SCDSMATC X SCDTJMG

RELC 30 X SCDSMATB

RELC 30 X SCDSMATC

RELC 31 X SCDSMATB

SCHEISXG (daughter's level of closeness toward father (RELC 31) with level of traditionalism of father's sex role attitudes (SCHSVATG))

RELC 31 X SCHSVATG

Gender of parent

male/female

10 p. 3 top

# ADOLESCENT

Independent Variables

Operational Definitions

Remarks

Question as Stated

Child's chronological age (RELC 31)

10, 11, 12, 13, 14

How old are you?  
10, 11, 12, 13, 14

Child's pubertal age

As measured by scale developed by J. Keith based on Tanner (1962) scored 0 to 50, less mature to more mature

Puberty, or becoming an adult physically, takes several years; it may begin when a child is 10 or it may not begin until a child is 16. There are some signs parents can notice to indicate where a child may be in this time of change. Think about a 5-point scale:

Because parents place an X on a continuum, coding is 10-50.

- 1 = physically a child
- 2 = slight changes physically
- 3 = several noticeable physical changes
- 4 = many changes
- 5 = physically an adult

Place an X on the line near the number which you think best describes your child. Words are written below to give examples of the physical changes you may have observed.

## PHYSICALLY CHILD

FOR GIRLS

FOR BOYS

Slight breast changes  
Beginning body hair

Slight dev. body hair

Some breast dev. waist thinning  
Height spurt  
Some body hair

Some body hair, upper lip, chin, etc.  
Some voice change

Period begun

Height spurt 3 to 6 in.

Adult height  
Full breast dev. 5 Voice changed  
PHYSICALLY  
ADULT

Shaving  
Muscles well-developed

Gender of child (SEX)	male/female	Dependent Variables	Operational Definitions	Question as Stated	Remarks
Level of traditionalism of female early adolescents on sex role behaviors scale (SCGSIBW)			Mean of total number of traditional responses.	How often do you do the following things by yourself or with your family? (1-6, everyday to never) 1. go grocery shopping by yourself 2. prepare meals by yourself 3. clean up after meals by yourself 4. work in yard by yourself 5. take care of younger children by yourself 6. empty waste baskets, take out the garbage 7. clean, wax, or fix car 8. do the laundry  Here is a list of games, activities, and hobbies that kids do. Which of these things do you like to do? 1. archery 2. baseball, softball 3. cake decorating 4. cooking 5. crafts 6. dancing 7. electronics 8. embroidery or needlework 9. fishing 10. knitting or crocheting 11. making rockets 12. model cars, boats, planes 13. sewing 14. small engine repair	Traditionalism of response based upon literature review. (1, 2, 3, 5 and 8 considered feminine; 4, 6, 7 considered masculine.  #3, 4, 5, 6, 8, 10 and 13 considered feminine; #1, 2, 7, 9, 11, 12, 14, considered masculine.  Frequencies collapsed to (non-traditional) and (traditional) and reverse scored by gender.
Level of traditionalism of male early adolescents on sex role behaviors scale (SCBSABW)	see above			See above	
Level of traditionalism of female early adolescents on sex role attitudes scale (SCGSATT)	As measured by absolute difference scale adapted J. Broverman et al., 1972			The next section asks what you think men and women should be like. How important is it for MEN to: (1-4, very important to not important at all) 1. be very gentle 2. make decisions easily 3. be neat in their habits 4. be well educated 5. be ambitious 6. never cry 7. easily express their tender feelings 8. be very independent	The absolute differences between parallel items were divided by the number of items to form the score.

basic assumptions, logical hypotheses can be derived.

Maternal employment has not been a part of the recent traditional female sex role norms of our society. Therefore, theoretically, maternal employment would be expected to be negatively related to early adolescent level of traditionalism in sex role attitudes and behaviors. The literature supports this. Maternal employment has been indicated as one of the major influences on children's sex role development. The data consistently agree that adolescent sons and daughters of employed mothers have a less differentiated perception of gender roles than those children of mothers who do not work outside of their homes for pay (Gold and Andres, 1978a, 1978b; Dellas, Gaier, and Emihovich, 1979; Broverman, Vogel, Broverman, Clarkson, and Rosenkrantz, 1972; Marantz and Mansfield, 1977; Etaugh, 1974; Hoffman, 1974, 1979; Lamb, 1982; Chandler, Stawicki, and Styffler, 1981).

The following hypotheses were based on both logical deductions from Bronfenbrenner's theory and the cited empirical evidence:

Hypothesis 1: Maternal employment is inversely related to the level of traditionalism of early adolescent sex role attitudes and behaviors.

Hypothesis 2: The number of years that the mother has been employed since the birth of the child is inversely related to the level of traditionalism of early adolescent sex role attitudes and behaviors.

The father's attitude toward the mother's employment was the basis for another set of variables to be examined. These examined the indirect influence of the father on the early adolescent's sex role attitudes and behaviors with relation to

maternal employment. The hypothesis is deduced from Bronfenbrenner's Proposition E (second order effects):

Hypothesis 3: The interaction of the amount of maternal employment with the level of father's feeling about maternal work is related to the level of traditionalism of the early adolescent sex role attitudes and behaviors.

#### Microsystem/Parent-child Dyads

In the traditional sex role literature, the same gender parent and child has been the dyad under examination. Some of the more recent literature has looked at both parents and their relationship to the adolescent's sex role development (Kelly and Worrell, 1976; Orlofsky, 1979). Emmerich, Goldman and Shore (1971) found a positive relationship between sex role attitudes of early adolescents and their parents.

The following hypothesis was based on the previous discussion:

Hypothesis 4: The level of parental traditionalism of sex role attitudes is positively related to the level of traditionalism of early adolescent sex role attitudes and behaviors.

These hypotheses were analyzed for each of the parent-child dyads: mother-daughter, mother-son, father-daughter, father-son.

In order to examine the role of each parent, the variables which are inherent in Bronfenbrenner's hypotheses are amount of time spent in joint activities and the level of positive feeling between those involved in the activities. Important to a discussion of the development of sex role attitudes and behaviors is the level of traditionalism of these behaviors and/or the attitudes

communicated or observed during the activities. The assumption is made that these behaviors and attitudes are what the early adolescent is learning during the joint activities.

Based upon Bronfenbrenner's hypotheses related to primary dyads, it is critical to examine the variables of time spent with parent and level of feeling in interaction with the parental level of traditionalism of sex role attitudes. Given the importance of the interactive effects between the variables of time spent with parents and level of feeling with parental level of traditionalism of sex role attitudes, it would be conceptually irrelevant to develop hypotheses which examined the variables' single effects. The following hypotheses were developed in order to examine the interactive nature of these variables:

Hypothesis 5: The interaction of the amount of time spent with parents with the parental level of traditionalism is related to the level of traditionalism of early adolescent sex role attitudes and behaviors.

Hypothesis 6: The interaction of the child's level of feeling about the parent with the parental level of traditionalism of sex role attitudes is related to traditionalism of early adolescent sex role attitudes and behaviors.

These hypotheses were analyzed for each of the following dyads: mother-daughter, mother-son, father-daughter, father-son.

#### Human/Early Adolescents

The following hypotheses were posited in an effort to provide a balance between the study of the individual and his or her environment. Age, both chronological and pubertal, was chosen as the variable based upon the literature's stated need

for such a distinction (Tanner, 1978; Petersen et al., 1983).

Based upon Payne's (1981) finding of chronological age differences and their relationship to sex role attitudes, the following hypothesis was developed:

Hypothesis 7: There is an inverse relationship between chronological age and the level of traditionalism of early adolescent sex role attitudes and behaviors.

Based upon the work of Steinburg and Hill (1978) and Hill and Lynch (1983), the following hypothesis related to pubertal age was developed:

Hypothesis 8: There is a positive relationship between parental perceptions of early adolescents' pubertal age and the level of traditionalism of early adolescent sex role attitudes and behaviors.

#### METHODOLOGY

The purpose of this study was to examine the influence of selected variables of the microsystem, exosystem, and macrosystem as defined by Bronfenbrenner (1979) on early adolescent sex role development. Two areas of sex role development were measured; attitudinal and behavioral. These were assessed as part of a structured interview with the early adolescent in his or her home. These interviews were conducted as part of a larger study, the Michigan Early Adolescent Survey (MEAS).

The sample design for the Michigan Early Adolescent Survey was a cross-sectional survey of 304 Michigan early adolescents and their parents. Early adolescents were interviewed by trained interviewers while parents completed questionnaires in the family's home. Interviews took

approximately one hour.

Interviewers were recruited in the twenty participating counties by 4-H county program leaders and program assistants. As volunteers, the interviewers were trained in an intensive ten hour session over two days in February, 1983. Training consisted of sensitizing the interviewers to early adolescents, familiarizing them with the interview schedule, a presentation on nonverbal cues, guidelines on the interview process, critiquing videotaped interviews, and group interviewing practice with an early adolescent. The parent questionnaire was discussed also.

At the end of the interviewer training, introductory letters explaining the survey were sent to each potential family. Interviewers then made telephone contacts to ascertain family interest and set up interview appointments. Most interviews were completed by June, 1983. Others, due to county administrative problems, were completed in September.

#### Interviewer description

Interviewers were much the same age as the parents of the early adolescents that they were interviewing. Over one half were between the ages of 31 to 45. They were likely to have had some college or to be college graduates and to be employed.

#### SAMPLE SELECTION

The population for this study was Michigan early adolescents, in grades five through eight, who lived with either one or two parents and were on official state of



Michigan enrollment lists (1982) for public and private schools. Children in group homes, institutions, or boarding schools were not part of the population. The sampling procedure chosen was a stratified multi-stage cluster sample. The sample was chosen using an Equal Probability Selection Method (EPSEM). This method insured that all state youths had equal probability of being selected for the study. This method increased the external validity of the project. Based upon the discussion by Cornfield and Tukey (1956), this study is not statistically generalizable to the entire population of Michigan early adolescents who live with their families because of substitutions made during the sampling procedure as well as self-selection by the respondents. However, based upon comparisons of the sample with the parallel State of Michigan census data, it can be said to be generalizable to early adolescents and their families, in Michigan, in families where the parents are somewhat older and more educated.

#### County Selection

An administrative decision was made to conduct 300 interviews: 25 clusters in 18 counties. Michigan counties were stratified by population size to create homogeneity in the substratum. Stratification by socio-economic status would have been ideal because we anticipated it to be highly correlated to the outcomes. However, since it was impossible to obtain these ratings ahead of time for the project, population size was chosen as a stratifier. Three strata were identified. Stratum 1 was highly urban. Stratum 3 was highly

rural. Stratum 2 was composed of counties which had large cities and rural areas. It is important to note that income and urbanicity are highly correlated, so that for the most part, these strata also reflected income stratifications.

Each county's population of ten to fourteen year olds was assigned random numbers according to its population. Eighteen counties were selected randomly. This is approximately one-fourth of the number of counties in the state. This number was chosen because it seemed manageable and because it was anticipated that there would be county 4-H staff available to work on the project in this number of counties.

Because the counties were stratified, stratum 1 needed eight clusters of early adolescents, stratum 2 needed nine clusters of early adolescents and stratum 3 needed eight clusters of early adolescents in order to adequately represent the proportion of early adolescents in each stratum.

The following shows the counties chosen and number of clusters for each county at this stage of the sampling procedure:

Initial Counties and Number of Clusters for Sample

Wayne (5)	Eaton (1)
Oakland (3)	Lenawee (1)
Macomb (1)	Allegan (1)
Kent (1)	Van Buren (1)
Saginaw (2)	Tuscola (1)
Washtenaw (1)	Chippewa (1)
Kalamazoo (1)	Emmett (1)
St. Clair (1)	Benzie (1)
Calhoun (1)	Delta (1)

1 cluster = 12 children  
Total sample = 300

Problems became apparent as the random selection was

examined. They were:

1. Wayne and Oakland would be unable to interview the numbers of students indicated because of lack of county 4-H staff people to supervise this large a number of volunteers. There was also concern that not enough volunteers could be recruited to do such a large number of interviews. In order to make this administratively possible, three of Wayne county's clusters were assigned to Genessee and Jackson counties. Genessee county became responsible for two clusters of interviews and Jackson county became responsible for one cluster of interviews. This substitution was based upon geographical and population similarities between the counties. Wayne county's sample was to have been drawn from the Detroit Public Schools. The population is primarily a black, inner-city population. In order to make the substitution as much like the Detroit sample as possible, students were sampled from the Flint and Jackson public schools. They, too, are primarily black, inner-city youth. Thus, a logical argument can be made that the substitutions are very much like the original sample.

In order to remove the excessive number of interviews from Oakland, one cluster was subtracted and given to Macomb county which was demographically similar to it.

2. Washtenaw, Emmett, and Chippewa counties chose not to be a part of the study. In an attempt to replace these counties with counties that were similar geographically as well as demographically, the following substitutions were made: Ingham for Washtenaw, Presque Isle for Emmett, and Marquette for Chippewa. The least satisfactory of these substitutions was the last one. Although Marquette and Chippewa are geographically similar, they are demographically less alike than are the other substitutions. However, commitment to maintaining an upper peninsula county and availability of personnel made this the best substitution. This substitution brought the largest amount of sampling bias into the sample.

The final list of counties and clusters looked like this:

Final Counties and Number of Clusters for Sample

Wayne (2)	Eaton (1)	St. Clair (1)
Oakland (2)	Lenawee (1)	Calhoun (1)
Macomb (2)	Allegan (1)	Benzie (1)
Kent (1)	Van Buren (1)	Delta (1)
Saginaw (2)	Tuscola (1)	
Ingham (1)	Marquette (1)	
Kalamazoo (1)	Presque Isle (1)	
Genessee (2)	Jackson (1)	

### School District Selection

Two school districts per each county were selected using the same procedure as had been implemented with the counties. Random numbers were assigned to all public and private school districts in the county based upon their population. As element of bias may enter the study at this point. Because school districts could not provide numbers of ten to fourteen year olds in their districts, the districts were assigned random numbers based upon their total population. If a district had a disproportionately larger or smaller amount of early adolescents compared to their total population, the sample is biased to that extent.

County staff members in fourteen of twenty counties received permission to acquire students' names from the first two randomly selected school districts chosen. It was necessary to make substitutions in six counties. In four of these, permission was received from the next school district randomly selected. Oakland county needed to contact four school districts before receiving permission to sample in two of them. The substitution made in Jackson county because of refusal to help supply names from the Jackson Public Schools brought the largest amount of bias into the sample.

Jackson county was a part of the sample as a substitution for one of the Wayne county clusters. In order to make the substitution as parallel to Wayne county as possible, sampling was to have taken place in the Jackson Public Schools, based upon their inner city population. When

Jackson Public Schools refused to cooperate with the survey, the sample was selected from the Catholic inner city schools in Jackson. This opened up the possibility for both racial and religious differences in the Jackson county sample.

#### Student Selection

An equal number of students in grades five, six, seven and eight as well as an equal number of males and females were chosen at the next stage. This occurred in two ways. Some school districts provided lists of fifth, sixth, seventh, and eighth graders. In these cases, student lists for each grade were numbered and four names for each intended interview position were chosen, using a table of random numbers. This was often the case in school districts which had one or two elementary schools and one middle school. In other cases, often in large districts, schools were assigned random numbers based upon their population of ten to fourteen year olds, and two schools were picked for each school district. Students were then assigned random numbers and selection took place using a table of random numbers. Four potential students' names were selected for each name necessary to conduct the study.

Students for each position were randomly numbered so that no bias would enter into the order in which the student's families were contacted about interviews. For example, if a female fifth grader were needed, four names were randomly selected and then randomly numbered as to order of interviewer contact. Slightly over two times the number of families

needed were called in order to fill each interview position. The amount differed greatly county to county. In general, it was more difficult to fill interview positions in the inner city situations and when the potential respondent was a fourteen year old male.

#### Weighting the Sample

At the end of interviewing, all counties were not able to complete all of the interviews assigned to them. In order to ensure that all strata were proportionately represented, cases were weighted based upon the stratum in which they occurred and the percentage of incomplete interviews in the stratum. The percentages of incomplete interviews and weights for the strata were: Stratum 1, 13.5 percent, 1.1566265; Stratum 2, 4.5 percent, 1.046729; Stratum 3, 1.1 percent, 1.0105263.

#### Constraints of Sampling Technique

Cluster sampling has possibilities for the most bias of any survey sampling technique. However, it was the best choice given the administrative constraints of this study. A procedure was needed that allowed the study of approximately one-fourth of the counties in the state in a manner that would be as statistically generalizable as possible. It was recognized from the beginning that not all counties were staffed in a manner that would allow them to be a part of the study and that some counties would need to be omitted for that reason. The random selection of counties was fortunate in this respect. Another major difficulty in a study such as

this one is the unavailability of early adolescent names. No list of student names exists at the state level. Subject names must be obtained at the local level through the schools.

#### SAMPLE DESCRIPTION

In the following section, the sample and its relationship to the state of Michigan 1980 census information on families with early adolescents is described.

#### Early Adolescents

Slightly more than one-half of the early adolescents who completed the survey were females. Three-fourths of the youths were evenly distributed over the ages of eleven, twelve, and thirteen with the remaining fourth split between the ages of ten and fourteen. These students were evenly distributed over grades five, six, seven, and eight. Eighty-two percent were Caucasian, sixteen percent were Black, and one percent were Mexican-American. (See Table 1-1).

#### Household information

The household information is detailed in Table 1-2. Eighty-two percent of the youth lived in two parent homes. Sixteen percent lived only with their mother and two percent lived only with their father. These proportions are very much like the 1980 Michigan census data.

Ninety-five percent of the youth lived with their natural mothers; seventy-six percent lived with their natural fathers. Almost two percent lived with adoptive mothers or adoptive fathers. Step-mothers accounted for one percent of the sample and step-fathers accounted for almost five percent.

**Table 1-1.**  
**Percentage of Early Adolescents Participating in the Michigan Early Adolescent Survey by Selected Demographic Variables**

<u>Gender</u>	<u>Age</u>	<u>Grade</u>
Male (49.8%)	10	13.0
	11	22.6
	12	24.5
	13	25.2
	14	14.6
Female (50.2%)	5	28.0
	6	23.1
	7	24.2
	8	24.7
	10	11.2
	11	22.9
	12	28.9
	13	25.3
	14	11.8
	5	23.6
	6	22.1
	7	26.6
	8	27.7
<u>Ethnicity</u>		
Caucasian	82.3	
Black	16.2	
Mexican-American	1.1	

**Table 1-2.**  
**Percentage of Households Participating in the Michigan Early Adolescent Survey by Selected Demographic Variables**

<u>Head of household</u>	<u>Guardianship</u>	<u>Mother</u>	<u>Father</u>
Two parents	82.0	Natural	95.1
Single mother	16.0	Adoptive	76.3
Single father	2.0	Step-	1.6
			4.9
<u>Geographical location</u>		<u>Family Income</u>	
Farm	9.5	Below \$10,000	13.6
Rural	28.3	\$10,001-20,000	19.9
Small town	16.3	\$20,001-30,000	29.0
Town	13.4	\$30,001-55,000	32.8
Small city	13.1	\$55,001-75,000	3.4
Suburbs	8.5	Over \$75,000	1.3
Cities	10.9		



Almost one third of the sample lived in a rural area; another ten percent lived on farms. Eight percent lived in large cities of 100,000 or more persons with an accompanying eleven percent in the suburbs. Approximately 13-16 percent of the youth lived in each of the following settings: small towns (under 5000 people), towns (5000-25,000 people), and cities.

The MEAS sample was very much like the 1980 Michigan census information on families in this stage of the life cycle when it came to income. Almost one third of the households earned \$20,001 to \$30,000. Another third earned \$30,001 to \$55,000. One fifth earned \$10,001 to \$20,000. Fourteen percent earned under \$10,000 and five percent earned more than \$55,000.

#### Parents

Percentages for selected parent demographics can be found in Table 1-3. In general, the sample parents were a little older than the parents in the Michigan census. The majority of them were between 31 and 45 years of age: 31-35 years, 23.8 percent; 36-40 years, 31.7 percent; 41-45 years, 21.5 percent. Five percent of the parents were thirty years of age or under. Slightly over ten percent were between the ages of 46 and 50. Six percent were over 50.

Fathers were most likely to be employed by someone other than themselves (72.1%). Over half of the fathers reported doing skilled work. One fifth of the fathers were professional people. Almost fifteen percent were in

**Table 1-3.**  
**Percentage of Parents Participating in the Michigan Early Adolescent Survey by**  
**Selected Demographics**

<u>Age</u>	<u>Mother</u>	<u>Father</u>
less than 25 years	0.8	0.0
26-30	6.1	3.0
31-35	33.6	14.0
36-40	30.5	32.9
41-45	16.5	26.4
46-50	9.0	14.1
51-55	3.4	7.6
56-60	0.0	2.0
61 or older	0.0	0.0
<u>Employment</u>		
Self-employed	10.2	18.0
Employed by someone else	51.8	72.1
Full time in home	27.7	1.5
Unemployed	8.4	5.4
Retired	0.0	1.4
Student	1.9	1.6
<u>Occupation</u>		
Trained technician or craftsperson	6.5	48.0
Farm management/farmer	1.4	5.4
Service	18.4	4.0
Business executive, owner	3.3	14.8
Community or government	4.1	2.0
Secretary/clerical	21.1	1.1
Professional	13.1	21.1
Homemaker	31.7	1.0
<u>Education</u>		
8th grade or less	4.3	6.0
Some high school	8.9	7.0
High school graduate	37.4	26.4
Some college	28.7	30.1
College graduate	11.8	14.3
Graduate or professional school	8.8	16.1

mangagement positions. Almost twenty percent were self-employed.

Twenty-seven percent of the mothers reported being full time homemakers. Ten percent were self-employed and fifty percent were employed by someone other than themselves. One fifth of the mothers were employed in service positions, another third in office work. Thirteen percent were professional people.

The parents in the MEAS sample were more educated than the Michigan population of parents with early adolescents. Almost twice as many parents in the sample had attended graduate or professional school (12.5%, 6.9%). Almost twice as many MEAS parents were college graduates (13.1%, 6.9%). Half again as many parents in the MEAS sample as in the Michigan census had some college education (29.4%, 20.5%). Thus, less sample parents had a high school education only (31.9%, 43.1%); had attended some high school only (8.0%, 17.1%); or ended their education at the eighth grade (5.2%, 7.0%).

#### MEASUREMENT PROCEDURES

A parent questionnaire and child interview schedule were the two major instruments used to collect data for this project. Each parent in the household (whether there were one or two) responded to the questionnaire while the interviewer interviewed the child. Other data gathering documents were the Household Questionnaire and the Interviewer Observation Sheet. The Household Questionnaire provided household

demographic information. The Interviewer Observation Sheet provided pubertal age information, ethnicity, and interviewer subjective information regarding the family and the interview process. Items in the interview schedule and parent questionnaire items came, for the most part, from sources used in other studies.

### Instruments

None of the assessments used to measure independent and dependent variables for this study were adopted in their entirety from the original assessment from which they were taken. The primary reason for this is that few assessments were available which were appropriate for this age group. Most assessments have been developed for younger children, or high school, college and adult populations. This is another indication of the lack of research which has been conducted on early adolescents.

All scales were created using a ten percent rule with regard to missing data. This meant that when scales had less than ten items, when one item was missing, the scale was not created for that person. The result of this was that a reduction in the number of subjects in the analyses.

### Parents' sex role attitude scales (SCMATTG, SCMATTB, SCDATTG, SCDATTB)

Mothers' and fathers' sex role attitudes were independent variables assessed by an adaptation of the Sex Role Questionnaire developed by Broverman et al. (1972). In the original Broverman et al. scale, male and female college students were in almost perfect agreement about the items as

descriptors of feminine or masculine traits ( $r=.95$ ,  $r=.96$ ). Because of this, originally, the parents' sex role attitudes were to be measured by reversing the scores if the attribute was for the opposite gender of that cited by Broverman et al. and totaling the responses. Scores were to range from nontraditional to traditional. Inclusion of items was based upon the anticipation of understanding by a ten year old of the attribute and language used to describe the attribute. The scale was pretested for understanding by early adolescents in an informal pilot conducted in December, 1982.

The scale was conceptualized as the absolute difference between each parent's responses to the feminine and masculine subscales. The range remained non-traditional to traditional. That is, if parents responded in the same manner to items about feminine traits as they did about masculine traits, the absolute difference between the total scores for the subscales would be small, indicating a more nontraditional attitude. Reliability scores for the feminine and masculine subscales were in the .50 to .70 range (see chart below). Considering that half of them were four item scales, these subscales were respectable and could be used.

Unfortunately, difference scores are less reliable than single scores (Mehrens and Lehmann, 1978). This means that the reliabilities of these scales are somewhat less than the reliabilities of the subscales on which they were scored. How much less is difficult to assess since there is no SPSS program that computes difference reliabilities.

## Reliabilities of Parental Attitudes Subscales

For boys:

Fathers' feminine attitudes subscale score	.59
Mothers' masculine attitudes subscale score	.64
Fathers' feminine attitudes subscale score	.58
Mothers' masculine attitudes subscale score	.69

For girls:

Fathers' feminine attitudes subscale score	.55
Fathers' masculine attitudes subscale score	.71
Mothers' feminine attitudes subscale score	.48
Mothers' masculine attitudes subscale score	.54

Pubertal age (CHANGM50, CHANGD50)

The indexes used to assess mothers' and fathers' perceptions of their early adolescents pubertal age were based upon Tanner's work (1978). This index is an attempt to locate early adolescent females and males on a developmental continuum based upon physical body changes as rated by parents. As such, it measures parents' perceptions of their early adolescents' pubertal ages. It should be considered exploratory.

Early adolescent sex role behaviors scales (SCGSXBHV, SCBSXBHV)

The dependent variables, level of traditionalism of male and female early adolescent sex role behaviors, were measured by examining in which household tasks boys and girls were engaged and which leisure activities they said that they liked to do or were interested in learning. These activities were coded traditional or nontraditional based upon the gender of the early adolescent. Resources for the coding of behaviors were Medrich et al. (1982); Cogle, Tasker, and Morton (1982); Dellas et al. (1979); Propper (1972), Jones (1981), and Eagly and Anderson (1978). The Girls' Sex Role Behaviors Scale had

a reliability of 0.97; the Boys' Sex Role Behaviors Scale had a reliability of 0.95.

Early adolescent sex role attitudes scales (SCGSXATT, SCBSXATT)

Male and female early adolescent sex role attitudes were the other dependent variables. Youths were asked how important twelve of the Broverman et al. (1972) attributes were for men and for women. Scores were formed by totaling the differences between each set of parallel statements and dividing by the total number of items. These scales have the same drawbacks as the difference scales discussed previously. Conceptually, they are more reliable than the parental scales because the difference between the items was used as opposed to the difference between the totals for the subscales. This was possible because the items were parallel. The subscale reliabilities are reported below.

#### Reliabilities of Early Adolescent Attitudes Subscales

For boys:

Masculine Attitudes Subscale	.59
Feminine Attitudes Subscale	.69

For girls:

Masculine Attitudes Subscale	.63
Feminine Attitudes Subscale	.67

#### OVERVIEW OF STATISTICAL METHODS

The major purpose of this study was to examine the relationship of selected maternal employment (exosystem), parental (microsystem), and early adolescent (human) variables and their relationship to the development of male and female early adolescent sex role development. The specific types of sex role development were sex role attitudes and sex role

behaviors. Multiple regression analysis was the major statistical tool used to examine these relationships.

Cohen and Cohen (1975) state that "Multiple regression/correlation analysis (MRC) is a highly general and therefore very flexible data analytic system that may be used whenever a quantitative variable (the dependent variable) is to be studied as a function of, or in relationship to, any factors of interest (expressed as independent variables) (p.3)." The general equation for multiple regression as provided by Lewis-Beck (1980) is:

$$Y = a + b_1x_1 + b_2x_2 + b_3x_3 + \dots + b_nx_n + e$$

where Y represents the dependent variable; a, the intercept or constant; b, the slope; and X the independent variables.

Like all statistical analysis techniques, multiple regression has a set of assumptions that necessarily must be met if it is to be considered "robust." (Although how violation of the assumptions affects robustness is open to interpretation and debate.) Lewis-Beck (1980) lists the following assumptions of bivariate regression, of which multiple regression is an elaboration:

1. No specification error
  - a. The relationship between X and Y is linear.
  - b. No relevant independent variables have been excluded.
  - c. No irrelevant dependent variables have been included.
2. No measurement error
  - a. The variables X and Y are accurately measured.
3. The following assumptions concern the error term:
  - a. Zero mean: For each observation, the expected value of the error term is zero.
  - b. Homoskedasticity: The variance of the error term is constant for all values of X.



- c. No autocorrelation: The error terms are uncorrelated.
- d. The independent variable is uncorrelated with the error term.
- e. The error term is normally distributed. (p.26)

In the following chapter the application of this statistical technique to the data collected for this study will be discussed. Significance levels of individual variables are reported if they are at or above the probability level of 0.10 due to the relative newness of the testing of Bronfenbrenner's theory.

#### LIMITATIONS OF THIS STUDY

The following limitations are organized and discussed in order of descending importance.

##### Measurement

The area of this study that limited it the most was measurement of sex role attitudes. This was true for both parents and early adolescents. In both cases the reliabilites of the scales were somewhat less than .50 to .80. This has implications for the reliability of the entire study. This problem is not confined to this study, as a survey of available assessments and scales for this age group will confirm. However, until sex role attitudes can be measured with more consistent reliability, the knowledge gained through their use can be seen only as tentative.

##### Survey research

Survey research has its own limitations. The assumption must be made that the self-reports made in both the parental questionnaires and the early adolescent interviews reflect

the attitudes and opinions of the respondents. Related to this limitation is that of controlling for interviewer and respondent gender. There is some indication that the gender of the interviewer is related to differential information shared by the respondent. There was no attempt, in this study, to control for the gender of the interviewer and the respondent. This should be a consideration in another study.

### Analysis

Although hierarchical multiple regression was, for the most part, adequate to analyze the data for this study, it was not entirely satisfactory. This is due to the three-dimensional ecological nature of the study and the two dimensional nature of multiple regression. Multiple regression assumes a linear model. An ecological model does not. At present, a linear model must be used, but hopefully in the future analysis methods will be created which will allow for a "better fit" between humans, who live in a holistic world, and the statistical models used to study them.

## CHAPTER 4 ANALYSIS AND FINDINGS

### Overview of Analysis

The overall purpose of this research was to examine the relationship between selected exosystem, microsystem, and human variables and early adolescent male and female sex role attitudes and behaviors. It was necessary to chose an analysis method for examination of each environmental variable and its relationship to the dependent variables, a set of environmental variables and the interactions between these variables, and the relationships between all variables in the study.

SPSS Multiple Regression was the statistical tool chosen to analyze the data. Specifically, hierarchical multiple regression was chosen as the most appropriate analysis method due to the theory on which this study was based. There are two important reasons for the selection of hierarchical multiple regression as opposed to simultaneous multiple regression. One is that Bronfenbrenner (1979) hypothesized that the direction of influence in learning is from the top down, that is, from the macrosystem, through the exosystem, mesosystem, and microsystem to the individual. This implies a causal direction. Hierarchical multiple regression is the appropriate statistical tool when causal direction is implied.

The second reason to employ hierarchical multiple regression analysis is because of the ecological nature of the study. One of the assumptions of an ecological approach is

that each variable is related to all the other variables, that indeed, true independence in the statistical sense does not exist. When variables are too highly correlated, the problem of multicollinearity exists. Multicollinearity is a problem because it presents serious estimation problems. Parameter estimates become unreliable (Lewis-Beck, 1980). In order to partial out the influence of one variable from another, hierarchical multiple regression is employed. It has the capacity to examine the influence of each variable after the influence of the variables which were entered before it have been taken into account. Thus, it relieves the problem of multicollinearity.

The multiple regression equations tested in this study were:

$$Y_1 = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + b_8x_8 + b_9x_9 + b_{10}x_{10} + e$$

$$Y_2 = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + b_8x_8 + b_9x_9 + b_{10}x_{10} + e$$

Where  $Y_1$  = early adolescent sex role attitudes  
 $Y_2$  = early adolescent sex role behaviors

and  $x_1$ =maternal employment;  $x_2$ =duration of maternal employment;  
 $x_3$ =father's attitude toward mother's work;  $x_4$ =(mother's sex role attitude with time spent the early adolescent);  
 $x_5$ =(father's sex role attitude with time spent with the early adolescent);  $x_6$ =(early adolescent's report of level of closeness to mother with mother's sex role attitude);  
 $x_7$ =(early adolescent's report of level of closeness to father with father's sex role attitude);  $x_8$ =chronological age;  
 $x_9$ =mother's perception of the child's pubertal age;  $x_{10}$ =father's perception of child's pubertal age

and  $x_2$ ,  $x_4$ ,  $x_5$ ,  $x_6$ , and  $x_7$  were interactive variables.

#### Preparation of Data

These data were part of a larger study, the Michigan Early Adolescent Survey. A separate file for variables in

this study was produced and frequencies were run; any outliers or unexplainable values were checked and corrected. Scales, indexes, and interaction variables were created in accordance with the SPSS manual (Nie, Hull, Jenkins, Steinbrenner, and Bent; 1975). The development of these scales, indexes, and interaction variables is found in Figure 3.

The formulation of scales was discussed earlier in the methodology section on measurement. The creation of interaction variables was addressed in the manner prescribed by Kleinbaum and Kupper (1978). (For conceptual rationale, see p.45). In their discussion of the concept of interaction related to multiple regression, they define an interaction as the situation where the relationship between a given independent variable (a) and the dependent variable is dependent upon the second independent variable (b). Nie et al. (1975) describe the interaction process in their SPSS manual (p.372-373). It is a multiplicative process that allows the interaction between two independent variables to be examined resulting in a better fit of the regression model. A new variable is created whose values are the products of two other variable values. One of the interactive variables in this study was the interaction of the level of traditionalism of the mother's sex role attitudes with the level of closeness that the son reported for the mother. The new variable is created by multiplying the values for these two variables. This means, in this data set, that when the mother's level of traditionalism was high and the relationship with her son was

high (positive), the new variable carried a high score. When the mother's level of traditionalism was low and the relationship with her son was low (not close), the new variable carried a low score. Combinations of opposite extremes or middle level values are middle level scores in the new variable.

#### Meeting the Multiple Regression Assumptions

It was assumed that the data in this study met the assumptions for multiple regression analysis discussed earlier with the exception of the assumption of linearity. The SPSS test for linearity as provided by the breakdown program was conducted on all variables except those that were continuous. The variable, maternal employment, was found to be non-linear (F-ratio significant at the .05 level) and was converted into a dummy variable. This was significant because the maternal employment variable was the first to be entered into the hierarchical multiple regression equation and had implications for how all other variables would be analyzed. It was also used to compute the interaction variable: Fathers' attitude toward mothers' work (FATTMW). Once the variable was transformed into a dummy variable, it passed the test for linearity.

#### Testing for multicollinearity

Multicollinearity is often looked at after the statistical analysis has been completed in order to understand the data, especially when few or any variables approach significance (Lewis-Beck, 1980). In this study, the presence

of multicollinearity was assumed because of the ecological nature of the study and the creation of interactive variables for the original multiple regression equation. These interactive variables were developed based on Bronfenbrenner's theory (1979).

In order to assess multicollinearity, each independent variable was regressed on each of the other independent variables, as suggested by Lewis-Beck (1980). Those variables for whom the explained variance approached 1.0 were considered problematic. This method is more satisfactory than the usual examination of bivariate correlations between the independent variables because it takes into consideration the relationship of an independent variable with all the other independent variables. The following chart shows the variables which were highly collinear in the female and male early adolescent models.

#### Highly collinear variables

<u>Variable</u>	<u>R</u>	<u>Females</u>	<u>R</u>	<u>Males</u>
Maternal employment		.89		.79
Father's attitude toward mother's work		.89		.79
Interaction variable: mother's sex role attitude with time spent with child		.91		.91
Interaction variable: father's sex role attitude with time spent with child		.90		.88
Interaction variable: child's level of closeness to mother with mother's sex role attitude		.92		.92
Interaction variable: child's level of closeness to father with father's sex role attitude		.91		.90

## FINDINGS

In the following sections, the findings for female and male early adolescents will be reported. Frequencies for the dependent variables will be addressed first. Then the independent variable frequencies, grouped by environment, will be addressed. Next, the multiple regression models will be discussed. Because these models are exploratory, variables will be considered significant with an alpha level of .10 or less. Hypotheses findings will be discussed in relation to the multiple regression models. (Relationships were considered significant at the alpha level of 0.05 or less.) Finally, differences between the two genders will be compared and contrasted.

### FEMALE EARLY ADOLESCENTS

#### The dependent variables: frequencies

##### Sex Role Attitudes

There were two dependent variables for female adolescents: level of traditionalism of sex role attitudes and level of traditionalism of sex role behaviors. Table A-1 (appendix) provides the frequencies for the female adolescent responses for the subscale items used to compute scores for these variables. Over eighty percent of the female early adolescents reported that it was important or very important for both men and women to have seven of the twelve attributes: to be gentle, able to make decisions easily, neat in their habits, well educated, independent, able to express their tender feelings, and self-confident.



The similar responses that females had for both men and women is apparent in the dependent variable scale- a scale based on twelve statements about what men should be like and twelve parallel statements about what women should be like (see Figure 3). The scale was created by finding the total of the absolute differences between the parallel items and dividing that total by the number of items. The potential range of the scale is 0-4. The actual range was from 0 to 1.25 with a mean of 0.314. This means that the attitudes of female early adolescents lay on the nontraditional end of the continuum of this scale.

#### Sex Role Behaviors

The frequencies for the items in the sex role behaviors scale are found in Table A-2 in the appendix. In general, female early adolescents performed traditionally feminine household tasks and were involved in traditionally feminine leisure activities. These activities were coded non-traditional or traditional and the sex role behavior scale was created by adding the responses and dividing by the number of responses. The potential range for this scale is 0 to 1. The actual range was 0.1333 to 0.7647 with a mean of 0.516.

#### The exosystem (maternal employment) frequencies

Thirty-five percent of mothers of the early adolescent females studied were not employed; sixty-five percent were employed either part-time or full-time. About half of employed mothers had entered the work force before their daughter entered school. The other half had entered after

that time.

Fathers of daughters were supportive of the mothers' work (either at home or outside of the home). There was no significant difference between fathers' attitudes toward wives who were employed and wives who were at home. Ninety-one percent indicated that they were happy or somewhat happy with what their wives were doing. Only nine percent indicated that they were not. When this variable was combined with maternal employment to form the interaction variable father's attitude toward the mother's work, a continuous variable was formed with a range of 0 to 4.

#### The microsystem (parent-child dyad) frequencies

There were four microsystem variables. All were interactive variables. Two concerned the amount of time that daughters spent with their parents in interaction with the parents' sex role attitudes. The other two concerned the level of closeness the daughter reported toward her parents in interaction with the parents' sex role attitudes.

Both interaction variables were created using one of two scales: the level of mother's sex role traditionalism and the level of father's sex role traditionalism. These scales were based on the same twelve items as the early adolescent sex role attitude scales (Broverman et al., 1972). The frequencies for these items can be found in Table A-3 of the appendix. In general, mothers were less traditional in their attitudes than were fathers. Over ninety percent of mothers and fathers said that it was important or very

important that their daughters develop nine of the twelve attributes listed. They said they wanted their daughters to be gentle, able to make decisions easily, well educated, ambitious, able to express their tender feelings, very independent, and self-confident. The exceptions to these attributes were never crying, making a lot of money and always acting as a leader.

The interaction variables (mother's amount of time spent with her daughter with the level of traditionalism of the mother's sex role attitudes) and (father's amount of time spent with his daughter with the level of traditionalism of the father's sex role attitudes) were computed using the parental attitude scale scores and a time index. The time index was the total of the responses that reflected the amount of time that the early adolescent spent with her mother and father.

The frequencies for the items that made up the time index can be found in the appendix in Table A-4. Fathers were less likely than mothers to eat breakfast, do homework and attend sports events with their daughters than were the mothers.

The potential range for the time index was 1 to 6; higher numbers indicated more time. The actual range for the mother's amount of time spent with her daughter was 1.5 to 4.4 with a mean of 3.1. The actual range for the father's amount of time spent with his daughter was 1.5 to 3.8 with a mean of 3.0.

The interaction variables (mother's amount of time spent with her daughter with the level of traditionalism of the mother's sex role attitudes) and (father's amount of time spent with his daughter with the level of traditionalism of the father's sex role attitudes) were continuous variables. The range for the mother's variable was 0 to 27.8 with a mean of 9.7. The range for the father's variable was 0 to 23.3 with a mean of 7.8.

The interaction variables (level of feeling child reports for mother with the level of traditionalism of the mother's sex role attitudes) and (level of feeling child reports for father with the level of traditionalism of the father's sex role attitudes) were computed using the parental attitude scale scores and a one item variable that measured how close the child felt to the parent. Female early adolescents reported the following levels of closeness to their mothers: very close, 66 percent; close, 30 percent, not close, 4 percent; and not close at all, 0 percent. For fathers, the responses were: very close, 46 percent; close, 42 percent; not close, 11 percent; and not close at all, 1 percent.

The interaction variables (level of feeling daughter reports for the mother with the level of traditionalism of the mother's sex role attitudes) and (level of feeling daughter reports for her father with the level of traditionalism of the father's sex role attitudes) were continuous variables. The range for the mother's variable was 0 to 40 with a mean of

12.3. The range for the father's variable was 0 to 36 with a mean of 9.3.

#### The human system (early adolescent) frequencies

Three variables made up the human system set of variables: female chronological age, the mother's perception of her daughter's pubertal age, and the father's perception of his daughter's pubertal age.

Approximately three-fourths of the girls in this study were evenly distributed over the chronological ages of eleven, twelve, and thirteen. The other one-fourth were divided between ages ten and fourteen.

Parents assessed their daughter's pubertal age on a continuum from 10 (physically a child) to 50 (physically an adult). This assessment was discussed under the Measurement section in Chapter 3. Mothers reported that 8 percent of the daughters were physically still children; 25 percent of the fathers reported this level of pubertal age. Approximately 30 percent of mothers and 32 percent of fathers assessed their daughters as close to physically an adult. The remaining percentages (mothers, 60%; fathers, 45%) reflect females who were between these ends of the continuum.

#### The multiple regression model

The findings for the female early adolescent regression were based on 83 cases. The hypotheses tests of significance using Pearson correlations were based on 95 to 154 cases. It is important to note that while several relationships were found to be significant, all correlations were low, with none

exceeding 0.34.

#### Sex Role Attitudes

The explained variance for the multiple regression model which looked at the relationships between the selected exosystem, microsystem, and human variables and their relationship to female early adolescent sex role attitudes was 0.21829. This means that this model accounted for about one-fifth of the variance in the dependent variable female early adolescent sex role attitudes. The model had an overall F-ratio of 2.01058 with a significance level of .044. (See Table 3.)

When the variables as clusters were examined by subsystem, the exosystem accounted for almost half of the variance (9.4%). The microsystem variables accounted for 6.6 percent of the variance and the human variables accounted for 5.8 percent of the variance.

Three variables within the model achieved a probability of less than or equal to 0.10. Those were maternal employment ( $p=.012$ ); the interaction (level of traditionalism of father's sex role attitudes with the amount of time that the father spends with his daughter) ( $p=0.100$ ); and chronological age ( $p=.027$ ). These variables accounted for 8 percent, 5 percent, and 3 percent of the variance in the dependent variable, respectively. They were all inversely related to the level of traditionalism of female early adolescent sex role attitudes.

Post hoc examination of the data for the meaning of the

TABLE 2.  
Pearson Correlation Coefficients for Hypotheses for  
Female and Male Early Adolescents

	Sex Role Attitudes		Sex Role Behaviors	
	Females	Males	Females	Males
Maternal employment (DEMOM80)				
Duration of maternal employment (DEMOM81)	-.1984**	-.1095	.0544	.0275
Fathers' attitudes toward Mothers' work (FATTMW)	-.1094	.0615	-.0218	.0773
Mothers' sex role attitudes (SCMSXATG/B)	-.3407***	-.0543	.0050	.0170
Fathers' sex role attitudes (SCDSXATG/B)	-.1376*	.0632	.0944	.0751
Interaction: (Level of traditionalism of parental sex role attitudes with amount of time parent spends with child)	-.1103	.1185	.1805*	.0981
Moms (SCMINTG/B)				
Dads (SCDINTG/B)	-.1590*	.0586	.1066	.1189
Interaction: (Level of traditionalism of parental sex role attitudes with level of closeness child feels for parent)	-.1074	-.0270	.1977*	-.2982**
Moms (SCMRESXG/B)				
Dads (SCDRESXG/B)	-.1273	.0137	.0678	.0549
Chronological Age	-.1066	.0813	.1203	-.1451*
Mothers' perception of child's pubertal age	-.1846*	-.2226**	.0495	-.0557
Fathers' perception of child's pubertal age	-.0969	.0983	.1291	-.0910
	-.1433	-.1799*	.2141*	-.0025

\* indicates  $p > .05$

\*\* indicates  $p > .01$

\*\*\* indicates  $p > .001$

TABLE 3.  
Hierarchical Multiple Regression Analyses with  
Female Early Adolescent Sex Role Attitudes  
as the Dependent Variable

Independent Variable	Significance	R <sup>2</sup>	R <sup>2</sup> Change	r	Subsystem R <sup>2</sup>
Exosystem					
Maternal employment	.012	.07535	.07535	-.27451	.09440
Duration of maternal employment	.744	.07659	.00124	-.10907	
Father's attitude toward mother's work	.216	.09440	.01781	-.29822	
Microsystem					
Interaction: (Mother's sex role attitudes with amount of time)	.950	.09445	.00005	-.03843	.06638
Interaction: (Father's sex role attitudes with amount of time)	.100	.12593	.03148	-.16556	
Interaction: (Mother's sex role attitudes with child's level of closeness)	.205	.14432	.01839	.00797	
Interaction: (Father's sex role attitudes with child's level of closeness)	.229	.16078	.01646	-.11600	
Human					
Chronological Age	.027	.21446	.05370	-.28501	.05751
Mother's perception of pubertal age	.882	.21472	.00024	-.20100	
Father's perception of pubertal age	.568	.21829	.00357	-.23479	

Overall F - ratio 2.01053 Significance 0.044



significant interaction variable produced the following observations. The group of daughters who spent the most time with their fathers held the least traditional attitudes, regardless of the level of traditionalism of the father's sex role attitudes. Those daughters who spent the average amount of time in comparison with their peers grew less traditional as their fathers grew more traditional.

It is interesting to note that three relationships which attained significance in the hypotheses testing using Pearson correlations were not included in the model. The three inverse relationships were father's attitude toward mother's work ( $p=0.001$ ), mother's level of traditionalism of sex role attitudes ( $p=0.032$ ), and the interaction of the mother's level of traditionalism of sex role attitudes and the amount of time mothers spent with their daughters ( $p=0.030$ ). These findings have implications for the concept of maternal employment as a proxy and will be discussed later.

The following variables were inversely, but not significantly, related to the level of traditionalism of female early adolescent sex role attitudes: duration of maternal employment, father's level of traditionalism of sex role attitudes, the interaction of father's level of traditionalism of sex role attitudes with the amount of time that the father spent with his daughter, the interactions of the level of traditionalism of both parents sex role attitudes with the level of closeness that the daughter feels for the parents, and both parents' perceptions of the daughter's

pubertal age.

#### Sex role behaviors

As summarized in Table 4, the explained variance of the multiple regression model which looked at the relationship between selected exosystem, microsystem, and human variables and their relationship to female early adolescent sex role behaviors was 0.14393. Fourteen percent of the variance in the dependent variable was accounted for with this set of variables. The model, however, was not significant. It had an overall F-ratio of 1.21053 with a significance level of 0.299.

There were no significant variables in this model. However, three relationships were found to be significant in the hypotheses testing using Pearson correlations. (See Table 2). They were father's sex role attitudes ( $p=0.014$ ); the interaction (level of traditionalism of father's sex role attitudes with the amount of time that the father spends with his daughter) ( $p=0.020$ ); and the father's perception of the daughter's pubertal age ( $p=0.019$ ). All were positively related to the level of traditionalism of female early adolescent sex role behaviors.

The following variables were positively, but not significantly related to the level of traditionalism of female early adolescent sex role behaviors: maternal employment, father's attitude towards mother's work, level of traditionalism of mother's sex role attitudes, the interaction ( level of traditionalism of mother's sex role attitudes with

TABLE 4.  
Hierarchical Multiple Regression Analyses with  
Female Early Adolescent Sex Role Behaviors  
as the Dependent Variable

Independent Variables	Significance	R <sup>2</sup>	R <sup>2</sup> Change	r	Subsystem R <sup>2</sup>
<b>Exosystem</b>					.00789
Maternal employment	.899	.00020	.00020	-.01408	
Duration of maternal employment	.444	.00754	.00754	-.08095	
Father's attitude toward mother's work	.867	.00789	.00035	-.01288	
<b>Microsystem</b>					.05384
Interaction: (Mother's sex role attitudes with amount of time)	.334	.01975	.01186	.11816	
Interaction: (Father's sex role attitudes with amount of time)	.114	.05122	.03147	.18079	
Interaction: (Mother's sex role attitudes with child's level of closeness)	.482	.05741	.00619	.08552	
Interaction: (Father's sex role attitudes with child's level of closeness)	.560	.06170	.00430	.14862	
<b>Human</b>					.08222
Chronological Age	.745	.06306	.00135	-.00536	
Mother's perception of pubertal age	.141	.11537	.05231	.17146	
Father's perception of pubertal age	.126	.14393	.02856	.23814	

Overall F - ratio 1.21053 Significance 0.299

the amount of time that the mother spends with her daughter), the interactions (level of traditionalism of both parents' sex role attitudes with the level of closeness that the female early adolescent feels for the parent), chronological age, and mother's perception of the daughter's pubertal age. Duration of maternal employment was inversely, but not significantly related this same variable.

#### MALE EARLY ADOLESCENTS

##### FREQUENCIES

The dependent variables: frequencies

##### Sex Role Attitudes

The dependent variables for male adolescents were the same as those for the females: level of traditionalism of sex role attitudes and level of traditionalism of sex role behaviors. They were measured in the same manner that the variables for the female early adolescents were.

Table A-1 (appendix) provides the frequencies for the male early adolescent responses for the subscale items. The frequencies were very similar to those of the females. Over eighty percent of the males reported that it was important or very important that both men and women be gentle, able to make decisions easily, neat in their habits, well educated, ambitious very independent, and self-confident.

The similar responses that males had for both the men and women items is illustrated in the scores for the dependent variable. The potential range of the scale is 0-4. The actual range is from 0 to 1.6 with a mean of 0.4. This means

that the attitudes of male early adolescents lay on non-traditional end of the continuum on this scale.

#### Sex Role Behaviors

The frequencies for the items included in the sex role behaviors scale are included in the appendix in Table A-2. In general, males did the traditionally feminine as well as the traditionally masculine household tasks. They preferred to do traditionally masculine leisure activities.

The sex role behaviors scale measured the level of traditionalism of male early adolescent household work and leisure activities. The scores had a potential range of between 0 (nontraditional) and 1 (traditional). The actual range was between 0.3529 and 1.000 with a mean of 0.714.

#### The exosystem (maternal employment) frequencies

Forty-seven percent of the mothers of male early adolescents were not employed; fifty-three percent were employed. One-fifth of the mothers had been employed since before their son had entered school. Four-fifths had entered the work force since that time.

Fathers of sons were supportive of the mothers' work (either at home or outside of the home). There was no significant difference between fathers' attitudes when their wives were employed or when they were at home. Eighty-nine percent indicated that they were happy or somewhat happy with what their wives were doing. Only eleven percent indicated that they were not. When this variable was combined to form the interaction variable father's attitude toward the mother's

work, a continuous variable was formed with a range of 0-4.

The microsystem (parent-child dyad) frequencies

There were four microsystem variables. All were interactive variables. Two concerned the amount of time that sons spent with their parents in interaction with the parents' sex role attitudes. The other two concerned the level of closeness the son reported toward his parents in interaction with the parents' sex role attitudes.

Both interaction variables were created using one of two scales: the level of mother's sex role traditionalism and the level of father's sex role traditionalism. These scales were the same as those discussed in the female early adolescent section. The frequencies for these items can be found in Table A-3 of the appendix. Over ninety percent of mothers and fathers said that it was important or very important that their sons develop nine of the twelve attributes listed. They said they wanted their sons to be gentle, able to make decisions easily, well educated, ambitious, able to express their tender feelings, very independent, and self-confident. The exceptions to these attributes were never crying, making a lot of money and always acting as a leader.

The interaction variables (mother's amount of time spent with her son with the level of traditionalism of the mother's sex role attitudes) and (father's amount of time spent with his son with the level of traditionalism of the father's sex role attitudes) were computed using the parental attitude scale scores and the time index discussed earlier in the

female early adolescent section.

The frequencies for the items that made up the time index can be found in the appendix in Table A-4. Fathers were less likely than mothers to do homework with their sons and more likely to play games. The potential range of the time index is 1 to 6. The actual range for the mother's amount of time spent with her son was 2.0 to 3.9 with a mean of 3.1. The actual range for the father's amount of time spent with his son was 0.5 to 3.8 with a mean of 3.0.

The interaction variables (mother's amount of time spent with her son with the level of traditionalism of the mother's sex role attitudes) and (father's amount of time spent with his son with the level of traditionalism of the father's sex role attitudes) were continuous variables. The mother's variable had a range of 0 to 34 with a mean of 8.2. The father's variable had a range of 0 to 32 with a mean of 8.1.

The interaction variables (level of feeling that the son reports for mother with the level of traditionalism of the mother's sex role attitudes) and (level of feeling that the son reports for father with the level of traditionalism of the father's sex role attitudes) were computed using the parental attitude scale scores and a one item variable that measured how close the child felt to the parent. Male early adolescent reported the following levels of closeness to their mothers: very close, 64 percent; close, 30 percent, not close, 4 percent; and not close at all, 1 percent. For fathers, the responses were: very close, 52 percent; close, 34 percent;

not close, 12 percent; and not close at all, 2 percent.

The interaction variables (level of feeling that son reports for the mother with the level of traditionalism of the mother's sex role attitudes) and (level of feeling that son reports for his father with the level of traditionalism of the father's sex role attitudes) were continuous variables. The range for the mother's variable was 0 to 40 with a mean of 9.7. The range for the father's variable was 0 to 32 with a mean of 8.5.

#### The human system (early adolescent) frequencies

Three variables made up the human system set of variables: male chronological age, the mother's perception of her son's pubertal age, and the father's perception of his son's pubertal age.

Male early adolescents were distributed over the chronological ages of ten to fourteen in a manner very similar to that of the females. Approximately three-fourths were evenly distributed across the ages of eleven, twelve, and thirteen. The remaining one-fourth was divided between ages ten and fourteen.

The parental assessment of pubertal age for males was also on a continuum from 10 (physically a child) to 50 (physically an adult). Twenty-seven percent of the mothers and 10% of the fathers assessed their son as being close to or physically a child. Both mothers and fathers assessed 16 percent of the sons as being close to or physically a man. The remaining males were somewhere in the middle of puberty



(mothers, 57%; fathers, 74%).

### The Multiple Regression Model

The findings for the male early adolescent regression were based on 77 cases. The hypotheses tests of significance using Pearson correlations were based on 97 to 147 cases. As in the female model, it is important to note that while there were several significant correlations, none had a higher correlation coefficient than 0.30.

#### Sex Role Attitudes

Twenty-seven percent of the variance in the dependent variable level of traditionalism of male early adolescent sex role attitudes was accounted for by the multiple regression model which included the same selected independent variable as those examined in the female early adolescent models. The overall F-ratio was 2.40210 which was significant ( $p=0.017$ ). (See Table 5.)

More than half of the explained variance was accounted for by the human subsystem variables (16.8%). The exosystem accounted for 2.5 percent of the variance in the dependent variable; the microsystem accounted for 7.4 percent of that variance.

There were three variables which had a significance level less than 0.10. The microsystem interaction variable (the level of traditionalism of mother's sex role attitudes with the level of closeness to the mother reported by the son) was significant at the 0.062 level. It accounted for 4.8 percent of the total variance accounted for in the model.

TABLE 5.  
Hierarchical Multiple Regression Analyses with  
Male Early Adolescent Sex Role Attitudes  
as the Dependent Variables

Independent Variables	Significance	R <sup>2</sup>	R <sup>2</sup> Change	r	Subsystem R <sup>2</sup>
<b>Exosystem</b>					.02529
Maternal employment	.434	.00818	.00818	-.09046	
Duration of maternal employment	.258	.02527	.01709	.08883	
Father's attitude toward mother's work	.968	.02530	.00002	-.08999	
<b>Microsystem</b>					.07358
Interaction: (Mother's sex role attitudes with amount of time)	.986	.02530	.00000	-.00796	
Interaction: (Father's sex role attitudes with amount of time)	.276	.04157	.01627	.10135	
Interaction: (Mother's sex role attitudes with child's level of closeness)	.062	.08835	.04678	-.06900	
Interaction: (Father's sex role attitudes with child's level of closeness)	.372	.09888	.01053	.10854	
<b>Human</b>					.16796
Chronological Age	.481	.10549	.00661	-.13637	
Mother's perception of pubertal age	.077	.14658	.04109	.15788	
Father's perception of pubertal age	.012	.26684	.12026	-.15817	

Overall F - ratio 2.40210 Significance 0.017

The variable father's perception of the son's pubertal age was significant at the 0.012 level and accounted for 12 percent of the variance in the dependent variable. The mother's perception of her son's pubertal age was also significant ( $p=0.077$ ). It accounted for four percent of the variance. The variables which had to do with the mother-son dyad were positively related to the level of traditionalism of male early adolescent sex role attitudes; the father-son variable was inversely related to the dependent variable.

Post hoc examination of the data for the meaning of the significant interaction variable revealed two things. In the group of mothers with the most traditional sex role attitudes, the male early adolescent sex role attitudes became more traditional as the closeness of the mother-son relationship decreased. In the group of males who reported that their relationship with their mother was not close, boys' attitudes were likely to mirror their mothers' attitudes.

It is interesting to note that the interaction variable discussed above was not significant in the hypotheses testing using Pearson correlations. Chronological age was found to be significant in the hypotheses testing ( $p=0.003$ ), but was not significant in the model. The father's perception of his son's pubertal age was significantly related to the level of traditionalism of male early adolescent sex role attitudes in both hypotheses testing ( $p=0.041$ ) and in the model.

The following variables were inversely, but not significantly related to the level of traditionalism of male

early adolescent sex role attitudes: maternal employment, father's attitude toward maternal employment, and the interaction (level of traditionalism of father's sex role attitudes with the amount of time that the father spends with his son). Those variables which were positively, but not significantly related to the level of traditionalism of male early adolescent sex role attitudes were duration of maternal employment, level of traditionalism of both parents' sex role attitudes, the interaction (level of traditionalism of mother's sex role attitudes with the amount of time that the mother spends with her son), the interactions (level of traditionalism of both parents' sex role attitudes with the level of closeness that the child feels for both parents), and the mother's perception of her son's pubertal age.

#### Sex role behaviors

Only 8.1 percent of the variance in the dependent variable male early adolescent sex role behaviors was accounted for in the multiple regression model which had the same independent variables as the female early adolescent model. The model was not significant ( $p=0.820$ ) and had no individual variables which were significant at the alpha of 0.10. (See Table 6.)

Two variables were inversely and significantly related to the level of traditionalism of male early adolescent sex role behaviors when analyzed using Pearson's correlations. They were the interaction of the level of traditionalism of father's sex role attitudes with the amount of time that the

TABLE 6.  
Hierarchical Multiple Regression Analyses with  
Male Early Adolescent Sex Role Behaviors  
as the Dependent Variable

Independent Variable	Significance	R <sup>2</sup>	R <sup>2</sup> Change	r	Subsystem R <sup>2</sup>
<b>Exosystem</b>					.02607
Maternal employment	.926	.00012	.00012	.01081	
Duration of maternal employment	.167	.02578	.02566	.15313	
Father's attitude toward mother's work	.882	.02607	.00029	-.00422	
<b>Microsystem</b>					.04353
Interaction: (Mother's sex role attitudes with amount of time)	.440	.03417	.00810	.08994	
Interaction: (Father's sex role attitudes with amount of time)	.161	.06003	.02585	-.18203	
Interaction: (Mother's sex role attitudes with child's level of closeness)	.421	.06876	.00873	.05070	
Interaction: (Father's sex role attitudes with child's level of closeness)	.803	.06960	.00085	-.17898	
<b>Human</b>					.01085
Chronological Age	.923	.06973	.00013	.01928	
Mother's perception of pubertal age	.377	.08059	.01085	.08172	
Father's perception of pubertal age	.803	.08146	.00087	.04190	

Overall F - ratio 0.58530 Significance 0.820

father spent with his son ( $p=0.001$ ), and the interaction of the level of traditionalism of father's sex role attitudes with the level of closeness that the son feels for his father ( $p=0.046$ ).

The variables which were positively, but not significantly related to the level of traditionalism of male early adolescent sex role behaviors are: maternal employment, duration of maternal employment, father's attitudes toward mother's work, the level of traditionalism of mother's and father's sex role attitudes, the interaction (level of traditionalism of mother's sex role attitudes with amount of time that son spends with mother) and the interaction (level of traditionalism of mother's sex role attitudes with the level of closeness the son feels for the mother). All human system variables were inversely, but not significantly related to the level of traditionalism of male early adolescent sex role behaviors. They are chronological age, and both parents' perceptions of their son's pubertal age.

#### COMPARISONS OF FEMALE AND MALE EARLY ADOLESCENTS

##### The multiple regression models: comparisons

##### Sex role attitudes

Both the male and female multiple regression models for the development of early adolescent sex role attitudes may be considered significant without reservation. The models are very different for male early adolescents and female early adolescents. There were no common significant variables.

The multiple regression model for female early

adolescent sex role attitudes had one significant variable from each subsystem. Maternal employment (exosystem), the interaction (level traditionalism of father's sex role attitudes with amount of time father spends with daughter) (microsystem), and chronological age (human) were the significant variables in the female multiple regression model for sex role attitudes.

The multiple regression model for male early adolescent sex role attitudes had no significant variables from the exosystem. One microsystem variable was significant: the interaction (level of traditionalism of mother's sex role attitudes with the level of feeling the son reports for mother). Both of the pubertal age variables from the human system were significant in the male model.

#### Sex role behaviors

The models for the development of male and female early adolescent sex role behaviors will not be compared because of the lack of significance of either model. There were no significant variables in the male or the female model.

#### The exosystem (maternal employment) hypotheses: comparisons

##### Sex Role Attitudes

The exosystem variables were more important to the female early adolescent sex role attitudes hypotheses than they were to the male hypotheses. Both maternal employment and the father's attitude toward the mother's work were significantly and inversely related to the level of traditionalism of female early adolescent sex role attitudes

in such a way that girls whose mothers worked and whose husband's approved of their employment were more nontraditional. None of the exosystem variables were significantly related to the level of traditionalism of male early adolescent sex role attitudes.

#### Sex Role Behaviors

None of the exosystem variables were significantly related to either male or female early adolescent sex role behaviors.

#### The microsystem (parent-child) dyad hypotheses: comparisons

##### Sex Role Attitudes

The microsystem variables were more important to female early adolescent sex role attitude hypotheses than they were to the male sex role attitude hypotheses. Both the mother's level of traditionalism of sex role attitudes and the interaction variable (mother's level of traditionalism of sex role attitudes with amount of time mothers spend with their daughters) were inversely and significantly related to the daughter's level of traditionalism of sex role attitudes. None of the microsystem variables were significantly related to the level of traditionalism of male early adolescent sex role attitudes.

##### Sex Role Behaviors

The microsystem variables were important to both the male and female early adolescent levels of sex role behaviors. However, this was only the case when the variables involving the father were examined and was in a different direction for



each of the genders. The level of traditionalism of the father's sex role attitudes was positively and significantly related to the level of traditionalism of only the female early adolescent sex role behaviors. The two interactive variables developed from the father's level of traditionalism of sex role attitudes (with the amount of time spent and level of feeling daughter reports for father) were also positively and significantly related to the level of traditionalism of female early adolescent sex role behaviors. The interactive variable using the level of feeling with the father's level of sex role traditionalism was significant at a slightly lower probability ( $p=.079$ ) than was used to assess the other variables, but the potential for the combination of the three variables is too important not to consider.

The two interactive variables were also important to the male early adolescent sex role behaviors hypotheses. They were inversely and significantly related to the level of traditionalism of male early adolescent sex role behavior. The direction of the relationship for girls is consistently positive and the direction of the relationship for boys is consistently negative.

#### The human (early adolescent) hypotheses: comparisons

##### Sex Role Attitudes

The human system variables were important to both the male and female early adolescent sex role attitude hypotheses. Chronological age was inversely and significantly related to the level of traditionalism of both male and female early

adolescent attitudes. In addition, the level of traditionalism of male early adolescent sex role attitudes was also inversely and significantly related to the father's perception of his son's pubertal age.

#### Sex Role Behaviors

Only one variable was significantly related to the level of traditionalism of early adolescent sex role behaviors. The father's perception of his daughter's pubertal age was inversely and significantly related to the level of traditionalism of his daughter's sex role behaviors. None of the human system variables were significantly related to the male early adolescent's level of traditionalism of sex role behaviors.

## CHAPTER 5 CONCLUSIONS AND IMPLICATIONS

### CONCLUSIONS

Early adolescent sex role attitude development is a complex phenomenon in its own right that is only beginning to be studied and understood. One of the most overriding findings of this research was the need for male and female early adolescent sex role attitude and behavior development to be considered as separate and very different processes. This will be highlighted in the following discussion in which the findings will be summarized and put in the context of the current present literature. To understand the meaning of the findings, two steps will be taken: interpretation of the multiple regression models and interpretation of the significant bivariate correlations which were not significant in the models.

It is very important to recognize that, in this study, the findings for early adolescent sex role attitudes are discussed in the context of relative nontraditionalism. Even the youth with the highest score on the dependent variable, traditionalism, was still on the nontraditional end of the continuum.

## The Macrosystem

### Sex Role Attitudes

If the parents of the early adolescents and the early adolescents themselves are considered representative of the society that makes up the macrosystem, it becomes clear that sex role attitudes have changed even in the past decade since the Broverman et al. (1972) studies were done. When Broverman's subjects responded to the same attributes to which MEAS parents and early adolescents responded, clear cut attributes based upon gender were delineated. The parents and early adolescents in this study did not dichotomize the attributes by gender, but seemed to focus on the attribute as a desired quality for a person, and not as a desired quality for a male or female. This is consistent with the outcomes of rapid sex role attitudinal change discussed by Yankelovich (1981), Hoffman (1977), Worrell (1982) and Jones (1981).

### Sex Role Behaviors

In contrast, there is little if any evidence that sex role behaviors have changed very much. Due to the lack of literature on this topic, it is difficult to provide evidence for this statement. However, the moderate to high level of traditionalism found in both the female and male early adolescent sex role behaviors is consistent with Worrell's comments that for most preadolescent children liberated attitudes have not filtered into behavior (1982). Underlying this statement is the assumption that attitudes precede behaviors or that they are interrelated. Woods (1972), too,

makes this assumption when she suggests that we have to look at sex role development as a set of interrelated dependent variables. The correlations between attitudes and behaviors in this study suggested that these are two separate domains that are not related and that there is no reason to expect that one will change because the other has. If this is the case, more work needs to be done to create models of sex role behavior development.

### The Exosystem

#### Sex Role Attitudes

The finding that maternal employment was a significant variable in the female early adolescent sex role attitude multiple regression model and was not in the male early adolescent model has very important implications. Bronfenbrenner (1979) implies that learning occurs from the outside layers of the environment through the inside layers of the environment because of the pervasive nature of the macrosystem. The female early adolescent model of sex role attitude development, with its significant exosystem variable, maternal employment, keeps the option of outer to inner direction of influence open. The male early adolescent model of sex role attitude development, with no significant exosystem variables, tends to dispute the Bronfenbrenner (1979) model. It could be argued that this particular exosystem variable is significant for girls and not boys because the same gender parent is involved. This is possible and needs to be examined.

The argument posited by Rodgon, Gralewski, and Hetzel (1977) and supported by the research of Rollins and White (1982) that maternal employment is a proxy for a variety of other variables is substantiated in the present findings. Although four of the five bivariate correlations related to mothers were significant, when these same variables were put into the hierarchical model, only the first, maternal employment remained significant. It accounted for much of the same variance as did father's attitude toward mother's work, the level of traditionalism of the mother's sex role attitudes, and the interaction of the attitude variable with the amount of time that the daughter spent with her mother. This would indicate that maternal employment is indeed a proxy for those other variables.

When the bivariate correlations were examined, the following conclusions were drawn. The exosystem variable of maternal employment had implications for female early adolescent sex role attitude development in this research, but not for male sex role attitude development. Daughters of mothers who were employed held less traditional sex role attitudes than did daughters of women who were not employed. This is consistent with Gold and Andres (1978a, 1978b); Hoffman (1974, 1979); Marantz and Mansfield (1977); Dellas, Gaier, and Emihovich (1979); Lamb (1982); Chandler, Stawicki, and Styffeler (1981); and Etaugh (1974). What was not consistent with these studies was the lack of difference in this study between sons of employed mothers and sons of

mothers who are not employed. Previous studies found differences between these two groups; sons of employed mothers were more nontraditional. This finding may be due, in part, to the high level of nontraditionalism found in general in the early adolescents.

The exosystem variable father's attitude toward mother's work was not a part of the previous literature, although the suggestion was made that it be examined. This variable was significant for both daughters of employed and non-employed mothers. It was inversely related the level of traditionalism of early adolescent females. This means that the happier fathers were with their wives work at home or not at home, the more nontraditional were the daughters.

#### Sex Role Behaviors

There were no significant exosystem variables in the male or female multiple regression models or hypotheses for sex role behaviors. This would indicate that those exosystem variables which influence the development of early adolescent sex role attitudes are not those that influence the development of sex role behaviors.

#### The Microsystem

##### Sex Role Attitudes

Both the female multiple regression analysis model for sex role attitudes and the male multiple regression analysis model for sex role attitudes included one significant microsystem variable. For the females it was the interactive variable of the level of traditionalism of father's sex role

attitudes with the amount of time that the daughter spent with the father. For the males, it was the interactive variable of the level of traditionalism of the mother's sex role attitudes with the level of closeness the son reports about his mother. The inclusion of one significant microsystem variable in both of the multiple regression models implies that the parents play some kind of mediating function between the other systems and the early adolescent. It is interesting to note that it is the parent of the opposite gender from the child. The research of Orlofsky (1979) and Kelly and Worrell (1976) and recommendations of Block (1976) imply that each parent has a special role to play in the development of sex role behaviors. It would seem that this is true of the development of sex role attitudes, too, given the significant cross-gender relationships in the present study.

It is apparent from the post hoc examination of the data that at least in the development of sex role attitudes with daughters, when the interaction between time and father's sex role attitudes are examined, it is time that is the primary variable and that the level of traditionalism of the father's sex role attitudes enhances this relationship but is secondary to it. The relationships between the significant interaction variable for boys (closeness and sex role attitudes) is more difficult to generalize about and needs to be looked at in other studies. It would seem that the traditionalism of the mother's sex role attitudes and the level of closeness are more equal in their influence. How is not clear.



When the bivariate correlations were examined, the microsystem variable mother's level of traditionalism of sex role attitudes was found to be inversely related to her daughter's level of traditionalism. This means that the more traditional the mothers' sex role attitudes, the more nontraditional were the daughters' sex role attitudes. None of the other relationships between parental and early adolescent levels of traditionalism of sex role attitudes were found to be significant. These findings are directly contrary to the findings of Emmerich, Goldman, and Shore (1971) who found that the relationship between the sex role attitudes of parents and their early adolescents was a positive one, especially for girls. The reason for this is difficult to assess. It may be that the macrosystem is overriding the other systems. Another interpretation is that the reaction of the daughters to their mother's level of traditionalism could be part of a process where a girl's nontraditionalism goes to one end of the continuum, perhaps to an extreme, and then comes back into a more moderate position. A cross-sectional study cannot address this kind of process. Longitudinal data would shed more light on this process.

#### Sex Role Behaviors

There were no significant microsystem variables in the multiple regression models for either males or females. When the bivariate correlations were examined, the father's level of traditionalism of sex role attitudes was positively related to his daughter's level of traditionalism of sex role

behaviors. This means that the more traditional the father's sex role attitudes, the more traditional were his daughter's sex role behaviors.

The interactive variable of the level of father's traditionalism of sex role attitudes with amount of time spent with the father was significantly related to both the daughters' and sons' sex role behaviors. However, the relationships work in different ways. For the daughters, the relationship was a positive one. That is, the more time that the daughters spent in company of their fathers' sex role attitudes, the more likely they were to exhibit traditional sex role behaviors. For the sons, it was the opposite. The more time that the sons spent in the company of their father's traditional sex role attitudes, the less likely were the sons to exhibit traditional sex role behaviors.

These interactive relationships are difficult to define. Based on the findings from the female multiple regression model for attitudes, it may be that time is the primary factor in the interactive relationship. This would be consistent with Bronfenbrenner's (1979) theory. That is, the more time the daughter spends in the presence of her father's sex role attitudes, the more likely the level of the traditionalism of her sex role behaviors are to parallel the level of traditionalism of his attitudes. This may be related to the kind of things the father and daughter do during this time. Many of the behaviors that were assessed to examine the amount of time spent could be considered more feminine or nurturing

behaviors. The nature of the things that are done during the time fathers spent with their daughters may account for the difference. Another interpretation is that the amount of time that the father spends with his daughter is dependent upon the father's level of traditionalism of sex role attitudes. While this is not a typical approach, it bears consideration. Why it would have an opposite effect on sons is unclear.

#### Sex Role Behaviors

The son's level of traditionalism of sex role behaviors was also inversely and significantly related to the interactive variable of the level of traditionalism of father's sex role attitudes with child's level of closeness to father. If the examination of this interaction is begun with the acknowledgement that the father's level of traditionalism of sex role attitudes was not significant by itself, this makes consideration of the relationship of this interaction variable a little clearer. It would seem to indicate that increasing level of closeness with the father as perceived by the son in the presence of the father's level of traditionalism is related to less traditional sex role behaviors demonstrated by the male early adolescent. As suggested for the females, the activities in which the father and son are involved in during their time together may also be related to the level of traditionalism of the male early adolescent sex role behaviors.

## The Human System

### Sex Role Attitudes

In the multiple regression analysis models, chronological age was significant for the females and the two pubertal age variables were significant for the males. This points out the necessity of including the human system in a model of sex role attitude development for either gender. This is further reinforced for the male model when it is noted that 17 percent of a total of 27 percent of the variance in the dependent variable male early adolescent sex role attitudes was accounted for by the human system variables. These findings are consistent with Katz's (1979) suggestion that biological factors are the most important source of influence on sex role attitudes (at least, for boys). The implications that these findings pose for Bronfrenbrenner's theory of human development and sex role development theory will be discussed later.

Chronological age was inversely and significantly related to the level of traditionalism of both male and female early adolescent sex role behaviors. This means that as early adolescents grow older they become less traditional in their sex role attitudes. This is consistent with the findings of Payne (1981). It also reinforces the notion, based on the writing of Piaget, that formal or abstract thinking increases with age over early adolescence and that this new level of thinking leads to less rigid stereotyping. Another interpretation could be that age is a proxy for experience,

and that given more experience in the world, youths come to hold less traditional sex role attitudes.

One other significant human system variable was found in this study. The father's perception of the son's pubertal age was inversely related to the level of traditionalism of male early adolescent sex role attitudes. That is, as father's perceived that their sons were becoming more adult, the early adolescent male was becoming less traditional in his sex role attitudes.

#### Sex Role Behaviors

Only one of the human system variables was significantly related to the traditionalism of early adolescent sex role behaviors. This was the father's perception of the daughter's pubertal development. It was a positive relationship which means that as the fathers' perceptions of their daughters' physical maturity increased, so did the level of traditionalism of the daughter's sex role behaviors. This confirms the theory of Hill and Lynch (1983) which is supported by research by Steinburg and Hill (1978).

#### IMPLICATIONS

##### Implications for Bronfenbrenner's Theory of Human Development

The implications of the present study for Bronfenbrenner's (1979) theory of human development need to be limited to a specific kind of development: that of sex role attitudes and behaviors. Sex role development, as shown in the previous discussion, is so dominated by gender that it is difficult to generalize the findings to all humans.

Bronfenbrenner's conceptualization of the environments is a useful and necessary one. Although only the female model in this study had significant variables from both the exosystem and microsystem, that does not mean that given another set of exosystem variables that the male model would not include them. Bronfenbrenner's hypotheses related to time and relationships and their relationship to learning are supported to the extent in this research that they may be considered viable. One of the time variables was included as a significant variable in the female model; one of the relationship variables was included as a significant variable in the male model. In the hypotheses for females, both variables had probabilities at the .10 level, which implies that, at least for females, the model has merit.

This study points out that one of the major considerations of a researcher who would like to apply Bronfenbrenner's theory is the inclusion of human variables. The consistent significance of either chronological or pubertal age in this study implies that learning is an interaction between the early adolescents and their environments, but that human, or individual, variables need to be considered. Other individual traits that may be important to sex role development are temperament and hormonal levels, for example.

The last issue that needs to be considered relative to Bronfenbrenner is that of the top-down nature of influence in learning. The consistency with which more non-traditional sex

role attitudes are found in the macro-, exo-, micro-, and human systems would imply that the macrosystem may be as pervasive as Bronfenbrenner suggests that it is. However, the power of the human variables, especially in the male model, may make null the influences of these systems, at least temporarily. It may be that during puberty, biological considerations are paramount in the growth of the individual and screen out environmental influences to some degree.

#### Early adolescence as a stage of development

The previous discussion points out how important the individual variables of chronological and pubertal age were to this study. This makes it very clear that early adolescence needs to be studied in its own right. Tanner's (1978) suggestion that pubertal age cannot be disregarded is fully supported.

#### Implications for sex role theory and research

Two tenets of life-span sex role theory are the need to examine development in relation to the life stage of the individual and that separate models for males and females need to be developed. The previous discussion supports the first tenet of the necessity for life stage research. An examination of the male and female models developed in this work supports the second tenet of the need for separate models. In the final multiple regression models for male and female sex role attitudes, none of the significant variables were common. In the tests for the hypotheses, relationships that were commonly significant sometimes had opposite

directions.

Another thrust of the sex role development literature has been the need to explore environments other than the ones studied traditionally (Katz, 1979; Block, 1978). This study examined several environments that either had not been studied previously or had not been examined from the perspective taken. The best multiple regression model in this study accounted for approximately one-fourth of the variance in the model for male sex role attitudes. Extending the microsystem to include siblings would most likely increase the explained variance of this system. The inclusion of the mesosystem in this study would have increased that explanatory power. The mesosystem variables related to schools and peers need to be systematically and simultaneously examined.

It may be that the exosystem variables included in this study are weak and that another set would explain both male and female early adolescent sex role attitudes and behaviors more fully. A possibly important variable that has been taken for granted is paternal employment. Because traditionally men were employed and women were not, maternal employment, originating in the deprivation literature, has received the focus of attention. Paternal employment now needs to begin to be addressed as well as the new benefits of flex-time and job sharing by mothers and fathers alike.

Paternal employment is a logical choice as a complement to the maternal employment variables when the importance of the opposite gender parent in the microsystem set of variables



is the focus. One of the major findings of this research was the reinforcement that all of the parent-child dyads need to be examined. This level of complexity is only one that needs to be addressed.

The importance of the interactive variables cannot go unstated. If the need for ecological models is as strong as implied and if the need to look at all of the parent-child dyads is as important as stated, then the creation of interactive variables which carry the essence of what is important to the model need to be utilized. Both the female and male models in this research had one significant interactive variable. This points out the need to think interactively.

Orlofsky (1979) states that what is needed is to get away from correlational studies and move to studies of causality. This study attempted to do that. While a multiple regression model cannot be said to determine causality, it is an important step away from correlational studies on the way to path analysis and other more causal models.

These studies, however, will only be as good as their measures. Finding age appropriate measures with strong reliability and validity is a difficult task and at present, an almost impossible one. Systematic work is needed to develop measures that when used in a life-span ecological approach, with separate models for males and females, using interactive variables that examine all of the parent-child dyads will provide strong, reliable, and valid information

about how early adolescents develop sex role attitudes and behaviors as well as other traits related to their overall sex role development.

#### Implications for the education of early adolescents

Early adolescent males and females need the opportunity to learn a wide variety of behaviors that will provide them with more options as they move through adolescence and into adult life. Educators of early adolescents need to include these opportunities and keep those options open by their interaction with their students and the kinds of opportunities that are offered, regardless of gender.

#### Implications for parent education

With the increasing probability that many early adolescents will choose to live alone as adults, or be on their own through marriage and divorce, life skills can no longer be looked upon as masculine or feminine, but as human skills that everyone needs to have. Most of those skills are learned in the home.

Parents also need to be made aware of the fact that both parents influence early adolescent sex role development and that if they have values that they want to communicate to their child, both parents are important in this process.

#### Implications for family policy

If it is assumed that sex role development has much in common with other kinds of development, it is imperative that we acknowledge the finding, in this study, that both parents have unique roles to play in the development of their early

adolescent. (The infancy literature also makes this very apparent.) It is important, then, for the creators of family policy to hold this concept in their minds as they work to create environments for strong, healthy families. It is important to note, also, that both time and closeness seem to enhance learning and that families must be helped to find this time and develop these relationships. Certainly flexible work situations, for example could facilitate this. As a country, we need to examine and implement other ways to allow parents of both genders the time to build the relationships that are necessary to learning.

## APPENDIX

Table A-1: Percentages on Items Which Make up the Sex Role Attitudes Scale by Gender of Child

How important is it for MEN to:

Item	Percent of Girls				Percent of Boys			
	1	2	3	4	1	2	3	4
be very gentle	54	43	3	0	43	52	6	0
make decisions easily	38	55	7	1	43	47	8	2
be neat in their habits	60	27	11	2	52	36	11	1
be well educated	67	25	9	0	79	17	4	0
be ambitious	35	48	16	1	50	35	13	1
never cry	6	11	44	39	12	16	39	32
easily express tender feelings	36	49	14	1	33	39	25	4
be very independent	45	44	8	4	49	37	13	1
be interested in how they look	36	40	19	5	33	42	17	7
always act as a leader	20	44	26	9	20	39	31	11
be self-confident	62	32	4	2	65	27	4	3
make a lot of money	19	30	34	18	27	40	27	7

How important is it for WOMEN to:

Item	Percent of Girls				Percent of Boys			
	1	2	3	4	1	2	3	4
be very gentle	57	43	0	0	48	46	5	1
make decisions easily	34	57	7	2	45	41	12	2
be neat in their habits	65	30	5	0	54	40	4	2
be well educated	66	24	7	2	65	28	6	1
be ambitious	39	58	11	3	43	38	17	2
never cry	2	16	36	46	8	18	32	42
easily express tender feelings	34	53	12	1	32	49	13	7
be very independent	41	43	14	3	41	41	16	3
be interested in how they look	46	35	15	4	48	39	10	4
always act as a leader	20	44	26	10	13	33	38	16
be self-confident	54	37	6	3	62	28	9	1
make a lot of money	13	37	31	20	20	37	33	10

(1 = very important; 2 = somewhat important; 3 = not very important;  
4 = not important at all)

Table A-2: Percentages on Items Which Make up the Sex Role Behaviors Scale by Gender of Child

How often do you do the following things by yourself or with your family?

Item	Percent of Girls						Percent of Boys					
	1	2	3	4	5	6	1	2	3	4	5	6
grocery shopping	1	5	6	10	13	65	4	2	9	5	16	64
meal preparation	4	12	18	22	24	20	9	9	14	25	20	23
after meal clean-up	21	22	27	12	8	10	19	18	28	10	13	11
yard work	3	6	22	20	23	26	12	15	25	26	9	13
child care	9	13	26	18	14	20	7	9	10	19	12	44
empty wastebaskets	7	15	22	20	13	24	17	25	39	6	6	7
clean, wax, fix car	0	2	6	20	35	37	2	5	16	23	27	27
laundry	3	7	21	19	18	32	3	4	9	4	8	73

(1 = every day; 2 = most days each week; 3 = once or twice a week; 4 = once or twice a month; 5 = less than once a month; 6 = never)

Which of these things do you like to do?

Item	Percent of Girls			Percent of Boys		
	1	2	3	1	2	3
archery	9	31	60	40	35	25
baseball	69	17	14	83	4	14
cake decorating	40	48	11	16	26	59
cooking	77	20	3	37	32	31
crafts	63	21	16	39	31	30
dancing	47	36	17	17	26	57
electronics	17	36	48	32	51	16
needlework	36	34	30	6	16	78
fishing	40	22	28	74	18	8
knitting	36	34	30	5	13	82
making rockets	6	13	81	34	45	20
model cars, boats, planes	5	16	79	68	23	9
sewing	45	30	26	5	17	78
small engine repair	2	22	76	31	51	18

(1 = like to do; 2 = would like to learn; 3 = not interested)

Table A-3: Percentages on the Items Which Make up the Parental Sex Role Attitudes Scales by Gender of Parent by Gender of Child

Which would you like to see your child (who is being interviewed) develop? Mark how important the quality is.

(1 = very important; 2 = somewhat important; 3 = not very important; 4 = not important at all)

Item	Percent of Mothers of Daughters				Percent of Mothers of Sons				Item	Percent of Fathers of Daughters				Percent of Fathers of Sons			
	1	2	3	4	1	2	3	4		1	2	3	4	1	2	3	4
be very gentle	42	54	3	1	40	56	4	0	be very gentle	34	63	3	0	24	66	9	1
make decisions easily	73	27	0	0	73	24	2	0	make decisions easily	63	35	2	0	70	30	0	0
be neat in their habits	78	20	1	0	67	30	3	1	be neat in their habits	78	22	0	0	75	24	1	0
be well educated	84	16	0	0	84	16	0	0	be well educated	85	15	0	0	80	20	0	0
be ambitious	62	35	3	0	71	26	3	1	be ambitious	72	26	2	0	80	20	0	0
never cry	1	24	30	44	3	22	30	45	never cry	4	28	37	31	2	25	46	26
easily express tender feelings	58	37	3	2	54	43	4	0	easily express tender feelings	31	62	7	0	32	60	7	1
be very independent	56	41	2	1	61	36	3	0	be very independent	46	50	3	1	46	40	4	0
be interested in how they look	64	34	3	0	59	39	2	0	be interested in how they look	66	32	1	1	64	34	2	0
always act as a leader	11	61	25	3	16	60	22	3	always act as a leader	24	59	16	1	19	64	15	2
be self-confident	87	10	3	0	84	15	1	0	be self-confident	81	19	0	0	77	23	0	0
make a lot of money	8	53	28	12	11	58	26	5	make a lot of money	10	58	27	5	14	66	18	2

Table A-4: Percentages on the Items Which Make up the Parental Time Spent With Child Index by Gender of Parent by Gender of Child

How often do you do the following with your child?

(1 = everyday; 2 = less than once a week; 3 = once or twice a week; 4 = once or twice a month; 5 = less than once a month; 6 = never)

Item	Percent of Mothers of Daughters						Percent of Mothers of Sons						Percent of Fathers of Daughters						Percent of Fathers of Sons					
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
	Mothers of Daughters						Mothers of Sons						Fathers of Daughters						Fathers of Sons					
eat evening meal	36	52	11	0	0	1	48	39	9	3	0	1												
eat breakfast	14	19	43	11	5	7	19	14	41	14	5	7	37	47	16	0	0	0	45	42	10	2	1	0
do homework	5	20	34	21	16	4	6	23	31	19	11	17	5	16	50	13	10	7	12	12	50	14	7	5
watch TV	30	40	25	2	1	1	33	37	20	5	2	2	1	8	28	34	16	13	3	9	29	25	21	12
play games	2	7	23	38	25	5	2	7	31	26	23	11	26	44	20	6	2	2	28	40	23	4	3	2
do crafts/hobbies	3	2	13	32	40	10	2	2	19	19	38	20	2	7	24	39	24	4	1	7	44	27	16	5
attend church	0	4	39	20	18	18	5	1	38	18	17	23	0	1	8	28	31	32	0	3	13	33	37	14
go to movies	0	1	0	21	67	15	0	1	3	20	60	16	0	2	31	19	25	23	1	3	32	20	20	24
attend sport activities	1	4	26	20	36	14	3	6	30	24	23	14	0	1	0	9	66	24	0	2	0	12	69	17
attend sport activities													0	2	18	21	46	14	3	4	25	27	29	13



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