Adolescent Perceptions of Nonverbal Displays
in Mixed-Sex Encounters

by

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We accept this thesis as conforming
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ABSTRACT

In this study, the linkages between nonverbal behaviors of adolescents (grades 9 and 10) and sex roles were examined using a quasi-experimental design. The potential meaning of these behaviors was also explored, using the courtship literature and linking nonverbal expressions to partner perceptions of attraction and likeability. Thirty boys (M age of 14.74 years) were paired with thirty girls (M age of 14.73 years) and their interactions were videotaped while engaging in a five-minute discussion. The adolescents' nonverbal behaviors (i.e., hair flips, hair strokes, head tosses, coy smiles, appearing smaller, eyebrow lifts, eyebrow lifts with smiles, face rests, chin touches, backward leans, and head akimbos) were examined for sex differences. The nonverbal behaviors were then categorized into "masculine" or "feminine" behavior, on the basis of meeting one or both of two criteria. First, sex differences in the expression of the behavior had been identified in prior research. Second, extant literature had theoretically or empirically linked the behavior to an expressive function that could be categorized as "agentic" or "communal." These sets of behaviors were then examined for their associations with the adolescents' perceptions of their partners' personal characteristics (i.e., social and physical attractiveness, likeability, competence, maturity, masculinity, femininity, self-reported pubertal status and babyfacedness).

Sex differences in the displays of the nonverbal behaviors were found: when compared to boys, girls engaged in more hair strokes, coy smiles, eyebrow lifts with smiles; and boys, relative to girls, engaged in more chin touches. Correlational

analysis of the nonverbal behavior and partner perceptions revealed that girls engaging in feminine-congruent behaviors (i.e., head tosses, coy smiles, and appearing smaller) were perceived favorably by their male partners (e.g., perceived as socially and physically attractive) and boys engaging in masculine behaviors (e.g., chin touches) were perceived favorably by girls(e.g., likeable). When girls engaged in masculine behaviors (e.g., chin touches), they were perceived as masculine. However, boys engaging in feminine behaviors (e.g., hair strokes, head tosses, and appearing smaller) were not only perceived as less masculine, but they were also seen as less likeable and less attractive. When these associations were examined in relation to the perceiver's sex role attitudes, several significant relations were found between the gender-congruent display of behaviors (i.e., girls engaging in feminine behaviors, boys engaging in masculine behaviors) and partners' favorable perceptions.

Other associations indicated that boys who were rated as more physically attractive by independent judges were rated by their female partners as more socially attractive; girls rated as more physically attractive by judges were rated as more mature by their male partners; and girls who perceived their partners as more masculine also perceived them as more mature.

When the possible meaning of these behaviors were examined, only one significant association was found: when girls perceived their partners as likeable, they engaged in more appearing smaller. Discussion of these findings centers on the dialectic processes of sex roles and generalizability of adult nonverbal behaviors to dolescents. Potential directions for future research are also suggested.

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CHAPTER I

INTRODUCTION

The nature of nonverbal expressive behavior in adult interactions has received much empirical attention. This research has shown that in mixed-sex interactions, nonverbal cues (e.g., smiling) can serve many functions, from establishing dominance hierarchies to signaling interest in another individual (Fast, 1970; Henley, 1977; Patterson, 1988). Meta-analytic studies of nonverbal behaviors have found significant sex differences that are often of substantial magnitude relative to psychological sex differences (e.g., spatial abilities) (Hall, 1984; Hall & Halberstadt, 1986). Research indicates, for example, that women are more involved and more open (e.g., less masking) nonverbal interactants, that they are better senders and receivers of nonverbal cues, and that they smile, laugh, and gaze at their partners more often than do men. Women also engage in more self-touching, approach others more closely, and touch others more often than do men (DePaulo, 1992; Dovidio, Brown, Heltman, Ellyson, & Keating, 1988; Eagly, 1987; Hall, 1979, 1984; Hall & Halberstadt, 1986; Kennedy & Camden, 1984; LaFrance & Carmen, 1980). On the other hand, men engage in more chin thrusts, assume more relaxed and open postures (e.g., are less likely to cross their arms and legs), and take up more space than do women (Aries, 1982; Dovidio et al., 1988; Hall, 1984).

Why do sex differences in nonverbal behavior exist? Some researchers believe that these differences are behavioral manifestations of societal inequality between the sexes, reflecting male dominance and the oppression of women (cf. Henley, 1977).

Others believe that the differences are internalized societal expectations for appropriate masculine and feminine behavior (cf. Eagly, 1987). Referring to these differences as "tertiary sexual characteristics", Birdwhistell (1970) asserted that they are socially learned and situationally specific. Additionally, his cross-cultural informants indicated that these behaviors follow a developmental pattern, first increasing (i.e., that children "mature into" these behaviors) and then decreasing with age (i.e., an "aging out" of stereotyped behavior).

Our understanding of the development of nonverbal behaviors across the life span, however, is hindered by the paucity of such empirical research in late childhood and adolescence. In one recent attempt to fill this void, Kolaric and Galambos (1995) studied nonverbal behaviors in mixed-sex adolescent dyads, finding several behaviors ("display" behaviors) that discriminated between adolescent boys and girls. In this study, pairs of unacquainted adolescents discussed three topics. The results indicated that boys engaged in more chin stroking, whereas girls engaged in more hair flipping, appearing smaller, and coy looks. The authors suggested that these behaviors indicated that the boys and girls had incorporated gender-congruent roles into their behavioral styles. According to the researchers, chin stroking was consistent with the masculine sex role because males are seen as more decisive and competent. Chin-stroking gave the boys the appearance of being engaged in decision-making or thought processes. Girls, however, appeared to be adhering to the feminine sex stereotype of passivity by appearing smaller, and "woman as seductress" by flipping their hair and casting coy looks.

Kolaric and Galambos (1995) proposed that the developmental task of establishing opposite-sex relations during adolescence might motivate adolescents to adhere to sex-typed behavior. Additionally, they speculated that the hair flipping and coy looks of the girls might be attempts to elicit their partners' attention.

Is there empirical evidence for such claims? Many researchers believe that such behaviors, displayed in adult mixed-sex encounters, are aimed at attracting sexual partners (Givens, 1978; Grammar, 1990; Muehlenhard, Koralewski, Andrews, & Burdick, 1986). Givens' (1978) case studies indicate that coy looks and automanipulations such as hair fingering and chin touching are seen in flirtatious and courting contexts, displayed by men and women signaling their interest.

Describing some of these behaviors under the general rubric of courtship behavior, Givens (1978) outlines five phases of the courtship process: attraction, recognition, interaction, sexual arousal, and resolution. From Givens' case studies, a vignette of an adult couple strikes a familiar chord. A woman smiles coyly at a potential mate, and the male, recognizing the signal of interest, orients his body toward her. He smiles while looking at her, averting his gaze downward and begins touching his mouth, cheek, and neck while listening to her speak, all signaling reciprocal interest. It stands to reason that the behaviors found by Kolaric and Galambos (1995) may also be courtship displays.

In an interesting ethological twist, Givens (1978) notes that certain courtship behavior may be meant to indicate passivity. He compared flirting behavior common to many Western and non-Western cultures with those that children affect when

confronted with strange adults. Such behaviors include hand-to-face automanipulation, coy gaze patterns, and demure facial expressions. As seen in the study by Kolaric and Galambos (1995), girls' attempts to appear smaller could be such a signal. Hass (1970) posits that many display behaviors are purposefully childlike --signals meant to encourage close proximity.

Yet paradoxically, such behaviors, especially when exaggerated, may send signals of incompetence and immaturity. Research suggests that attributions of incompetence are often held about women showing stereotypically feminine behavior, while conversely, stereotypically masculine behavior is seen as indicating competence and maturity (Hyde, 1985). Additionally the perceiver's own beliefs regarding gender roles might influence how such nonverbal displays are perceived (Hall, 1984).

What do the cues (i.e., hair flips, coy looks, appearing smaller, and chin touches) given by Kolaric and Galambos' (1995) adolescents mean? Could they perhaps signal interest and/or attraction? Are the senders perceived as more attractive (in other words, do the cues serve a dual purpose)? Are such cues linked to likeability? Self-presentation theory proposes that individuals are motivated to portray a particular type of individual and behave in ways they perceive to be in accordance with that role. This includes behavior that the individual believes is socially acceptable or desirable. In other words, people are motivated to present themselves as socially acceptable and desirable by behaving in ways they perceive to be socially acceptable and desirable (DePaulo, 1992). In accordance with self-presentation theory, if Kolaric and Galambos' (1995) participants were trying to attract their partners' attention, then their

behavior could be attempts at presenting themselves as attractive and likeable.

Moreover, empirical research indicates that nonverbal cues such as positive facial expressions, eye contact, and sex-typed gestures can influence an individual's perceptions of another. For example, positive facial expression has been linked to higher judgments of competency (Burgoon, Birk, & Pfau, 1990; Lee, McGill, & Uhlemann, 1988), composure (Burgoon et al., 1990), likeability, and high motivation (Anderson, 1991). Maintained eye contact or high levels of gaze have been associated with perceptions of higher competence and strength of character (Anderson, 1991). One study found that men judged to be more masculine and femininely-judged women were rated as being more attractive (Lippa, Valdez, & Jolly, 1983). Pejorative perceptions (e.g., "sissy" males and "butch" females) are often held about individuals who engage in behavior incongruent with their gender (i.e., cross-sex behavior).

However, as with most of the literature on nonverbal behavior, little research addresses these behaviors in adolescence. Why study such behavior in adolescents? Adolescence is a period of experimentation with new behavior, a time of sexual maturation and the concomitant burgeoning of sexual attraction to others (Katchadourian, 1990). It is during adolescence that North American society consents to dating -- the learning context in which culturally appropriate behavior and interpersonal skills needed for intimate, sexual relationships may be developed (McCabe, 1984).

Thus, adolescence may be an optimal time for studying nonverbal behaviors, given that physical maturation and endocrinological changes accompanying pubertal

development may be indirectly related to a stronger adherence to sex-typed behavior. According to Hill and Lynch's (1983) "gender intensification hypothesis," the physical maturation that occurs at the onset of puberty (e.g., breast development in girls and facial hair in boys) signals socializing agents (e.g., parents, teacher, and peers) that the adolescent is approaching adulthood, and should begin to behave accordingly, that is, in ways congruent with sex-role stereotypes (Galambos, Almeida, & Petersen, 1990). Increased pressure from socializing agents should result in increasing sex differences, in behaviors and attitudes, in adolescence. Increasing pressure could also lead to a reduction of cross-gender behavioral displays and devaluation of individuals engaging in such behaviors.

Lastly, physical characteristics of individuals are known to influence the perceptions of others. Physical attractiveness, for example, produces a well-known "halo effect," where individuals who are judged to be more physically attractive are rated more positively on a host of dimensions, including intelligence, maturity, and competence (Berry & McArthur, 1985; Dion, Berscheid, & Walster, 1972). Conversely, babyfaced individuals (i.e., individuals with baby-like facial features such as large eyes, round faces, and small chins) are rated as less competent (Berry & McArthur, 1985).

Objectives and Research Questions

The objectives of this study are to provide evidence as to the meaning of selected display behaviors in adolescence, and to look at possible perceptions that adolescents might have of such displays. Specifically, this research will focus on the

following nonverbal behaviors: hair flipping, hair stroking, head tosses, coy smiles, appearing smaller, chin touching, head akimbos (i.e., back neck touches), backward leans, and eyebrow lifts. The following research questions guide the study:

1) In girl-boy dyads, what is the relation between a target's selected nonverbal behaviors (i.e., hair flips, head tosses, coy smiles, appearing smaller, eyebrow lifts, eyebrow lifts with smiles, face rests, chin touches, backward leans, and head akimbos) and partner ratings of the target's personal characteristics (i.e., attractiveness, likeability, competence, maturity, masculinity, and femininity)? Are there sex differences in these relations?

2) Do physical features of the target (i.e., physical attractiveness, babyfacedness, and pubertal status) influence the nature of the relations between a target's nonverbal behavior and partner ratings of the target's personal characteristics?

3) To what extent are partner ratings of the target's masculinity and femininity associated with partner ratings of the target's competence and maturity?

4) What is the relation between the partner's own nonverbal behaviors and his or her ratings of the target's personal characteristics?

5) Is the relation between the target's nonverbal behavior and partner ratings of the target's personal characteristics affected by the partner's sex role attitudes?

CHAPTER II

LITERATURE REVIEW

This chapter will review literature on the development of nonverbal expressive behavior in children, including gender differences in such behavior and how these relate to the nonverbal expressive behavior of adolescents and adults. Literature regarding the nonverbal behavior found in adult courtship contexts will also be reviewed, as it applies to the nonverbal behaviors selected for study. Also included in this review is literature regarding sex roles and nonverbal expressions, emphasizing sex-typing and the development of sex role attitudes in adolescents. Finally, perceptions of nonverbal expressive behaviors will be reviewed.

The Development of Nonverbal Behavior

Although much empirical attention has been given to the development of expressive behaviors in children, little has been directed to the development of gender differences in these displays and virtually none has been directed at their contextual expression in adolescence. As Givens (1978) points out, many of these expressions are rooted in childhood development.

It is generally agreed that the basics of the nonverbal repertoire are present at birth (Hass, 1970; Mayo & LaFrance, 1978). Eibl-Eibesfeldt's work (1971) with blind and/or deaf children lends credence to this view. He demonstrated that children born blind and deaf will smile, laugh, frown, cry and stomp their feet in anger, just as sighted and hearing children do. Others have found the same rudimentary configurations of positive and negative expressions in both blind and sighted children

(Mayo & LaFrance, 1978).

Innate components of nonverbal expression can be modified, reduced, or eliminated from the behavioral repertoire (Feuerstein, 1981). Taboo behavior is especially evident in the class of nonverbal behavior called body manipulators (i.e., where one part of the body does something to another part of the body) (Hoffer, 1981). It is easy to imagine, for instance, a parent scolding a child for picking his/her nose in public.

In general, the development of nonverbal behavior in children can be conceptualized in terms of biological maturation, cognitive development, and exposure to a specific culture (von Raffler-Engel, 1981). In other words, children must be capable of reproducing and coordinating the motor movements involved in nonverbal behavior, cognitively link those movements to their communicative functions, and relate these communicative functions to a specific cultural context. Thus, development is associated with an increasing range in the repertoire of nonverbal expressions, greater integration and coordination of communicative channels, and greater differentiation of behavior according to social context (Mayo & LaFrance, 1978).

Through observational learning and imitation, children begin the developmental process with their primary care giver, mimicking the expressions of an adult (Mehrabian, 1972; von Raffler-Engel, 1981). Like the words they imperfectly pronounce, the nonverbal expressions of children are at first, imperfect replicas of the expressions of adults. They learn to relate the expressions to increasingly dissimilar and more distal components of their communicative environment (Mehrabian, 1972).

That is, children progress from interacting with a few individuals (e.g., their primary caregiver, siblings) and regarding objects that are spatially and temporally present, to a wide variety of people with a great degree of variation in their expressive behavior and objects that are not present. Their nonverbal behavior becomes more refined and complex, demonstrating more advanced expressions derived from expressions already present in the child's nonverbal repertoire. For example, an infant first reaches for a toy, expressing a desire for that object. Later, this same child, now a toddler, points at a toy, expressing a companion's desire for that object.

Along with the cognitive development that shapes the behavior's expression, the child will be learning the cultural rules regarding the nonverbal behavior. For example, differential social rules for eye gaze are reflected in a Native American child's avoidance of eye gaze, in the African-American child's gaze while speaking, and in a Caucasian child's gazing while listening (von Raffler-Engel, 1981). These display rules are cultural guides, specifying where and when an individual does and does not engage in certain expressions (Mayo & LaFrance, 1978), including the masking and exaggeration of affective expressions.

Thus, developmental changes are seen in differential displays, and vary in different contexts. For example, indiscriminate smiling in infants stops when they reach their fifth or sixth month (Mayo & LaFrance, 1978). The "social smile" (where only the upper teeth are exposed), considered the most appropriate display when in the presence of another is increasingly displayed (in contrast to other types of smiles) between the ages of 2 and 4 (Cheyne, 1976). Another example is found in a study of

children engaged in conversation. In a sample of children aged 3 to 15, von Raffle-Engel (1981) found sex differences in posture: boys had more relaxed body postures than girls, leaning forward with their knees spread, whereas the girls were more stiff. This differential display was more pronounced in the older children, suggesting a developmental trend.

Undeniably, children are exposed to a wide range of nonverbal expressions, have the physical capability to reproduce many of those expressions, and likely associate many of these expressions with intimacy and attraction. For example, coy behavior (i.e., smiling, followed by downward aversion of the eyes and/or covering the face with the hands) is often seen throughout the second year and beyond (Saarni, 1982) and in a variety of cultures and contexts (Eibl-Eibesfeldt, 1971). Children will exhibit this when in the presence of a strange adult (Eibl-Eibesfeldt, 1971) and when interacting with family members (Saarni, 1982).

In terms of nonverbal expressions of intimacy, Eibl-Eibesfeldt (1971) proposed that individuals are exposed to such behaviors as children. He contends that Freud's observation that mothers lavish their children with sexual behavior patterns is "topsy-turvy"; that in fact, the caring behavior of parents is repeated in later courtship rituals and when establishing intimate bonds. For example, he argues that by means of maintained eye contact and smiling, infants establish contact with their mothers, unconsciously and automatically. This same expression (i.e., eye contact and smiling) is seen later in courtship and other contexts of intimacy and affiliation.

It is important to remember that communicative meanings are rarely expressed

as single gestures, and are more often expressed as a cluster of motor movements. Therefore, production of the appropriate motor combinations plus the "gestalt" understanding of these combinations is necessary before the behavior is fully developed (von Raffler-Engel, 1981).

Although little is known regarding the expression of nonverbal behaviors in adolescence, limited support for developmental trends into adolescence exists. In a cross-sectional study of adolescents, Montemayor and Flannery (1989) demonstrated that within mixed-gender dyads, touching, smiling, and gazing showed dramatic differences in frequency, increasing between early and middle adolescence. They found mixed results for same-sex dyads: the probability of smiling increased between childhood and early adolescence for both females and males, but decreased in middle adolescence for girl-girl dyads only; touching increased in girl-girl dyads between childhood and adolescence, but decreased in boy-boy dyads.

Nonverbal Behavior in Courtship and Flirtation

Within the literature covering expressive behavior in adults, the context of courtship and flirtation is one in which the behaviors selected for this study (i.e., hair flipping and stroking, head tossing, coy looks, coy smiles, appearing smaller, chin touches, head akimbo, eyebrow lifts with smiles and backward leans) are often expressed. The work on nonverbal behavior in courtship contexts can be divided into ethological and psychosocial perspectives. Drawing parallels from comparative zoology and ethological work, Givens (1978) uses case studies of adult humans to demonstrate that a "universal, culture-free, nonverbal sign system" (p.346) exists for

negotiating sexual relations. According to Givens, expressive behavior in sexual relations (including flirtation, seduction, and courtship) consists of exaggerated cues of affiliation (that is, willingness to establish a social bond) and submissiveness (i.e., meekness, harmlessness). Givens states that these behaviors often appear "silly, awkward, and childish" (p. 357), are rooted in early childhood development, and are used in the same

affiliative-submissive posture by both children and adults.

Givens outlines five phases of courtship, of which the first two (attention and recognition) are relevant to this discussion. Givens states that the key feature of the first phase (attention) is ambivalence, characterized by cues signaling a tentative and hesitant approach. Those cues include hand-to-body automanipulations (e.g., touching the face or neck), displacement-like activities (i.e., out-of-context activities related to eating, grooming, and so on, in socially tense settings, e.g., scratching and fingering the hair), coy gaze patterns, and demure facial expressions. Submissiveness, according to Givens, is the primary message sent during the recognition phase. These cues include shoulder flexing, lateral head tilts, patterns of self-clasping, and downward gaze aversion.

Other researchers have empirically studied the nonverbal behavior of adult courtship through naturalistic observations. Moore (1985) catalogued the nonverbal solicitation behavior of 200 adult females, and then validated the catalogue by providing contextual evidence of their expression. She found 52 different behaviors that elicit male attention, which she grouped into three categories: facial and head

patterns, gestures, and posture patterns. Facial and head patterns found to elicit male attention included various patterns of glancing, eyebrow flashes, head tossing, hair flips, neck presentations, lip licks and pouts, laughing, smiling in general, and coy smiles. Hand and arm gestures involved palming (hand extended, palm presented), exaggerated gesticulation (usually accompanying speech), hand holding, primping, and object caressing. Posture patterns included inward leaning, sometimes followed by a brush or brief breast touch and other bodily contact. Whole body movements consisted of parading (walking across the room with an exaggerated swaying motion of the hips) and approach (walking up and standing very close, within 2 feet of the man).

Moore (1995) attempted to establish a developmental link by looking for these same behaviors in the interactions of adolescent girls, judged to be between the ages of 13 and 16. The most frequently exhibited behaviors (room encompassing and short, darting glances, prolonged gazes, head tosses, hair flips, smiles, coy smiles, laughter, giggles, primping, playing or teasing) reflected the importance of visual contact, positive expressions of emotion and head/hair movements. Particularly worthy of note is the finding that the flirting behavior of adolescent girls had a "playful, teasing" quality to it. Further, although girls engaged in much the same flirting behaviors as adult women, the girls' behavior appeared to be more exaggerated and pronounced (e.g., broader movements, taking longer to complete the action).

Investigating the nonverbal flirtation behavior of adult couples in bars, McCormick and Jones (1989) found that women appeared to initiate and maintain flirtatious encounters by using nonverbal signals. Women used such signals as eye

contact, smiling, brief touches, and grooming behaviors. Women were also more likely to exhibit closed body postures, possibly in an attempt to control the escalation of the flirtation. Men were more likely to use intimate touching (e.g., touching two or more parts of the partner's body, kissing, hugging, rubbing against partner), but only after such advances were solicited by the women. These findings suggest that women are more likely to initiate contact, and for this reason, some researchers have paid closer attention to the behavior of women in these contexts.

Other researchers have also found both men and women signal interest by inward body postures, smiles, eye contact, touch, laughter, and attentiveness (Fitchen, Tagalakis, Judd, Wright, & Amsel, 1992; Grammar, 1990; Perju-Liiceanu, 1978). Prolonged eye contact, or gazing, appears to be an especially potent signal. The familiar expression "He's making eyes at me" reflects what researchers call "overgaze" (LaFrance & Mayo, 1980). This refers to the increased maintenance of eye contact between two people who are highly attracted to each other.

The Development of Sex Roles

How, then, do nonverbal expressive behaviors become gender specific? One answer to this question can be cast in terms of sex role socialization. Sex roles are shared societal expectations regarding the appropriate attributes and behaviors of males and females (Hyde, 1985). One aspect of sex roles includes nonverbal and paralinguistic behavior (e.g., speech and language patterns) (Huston, 1983).

In Western societies, sex role differentiation generally falls along two dimensions: the communal and the agentic (Bakan, 1966). The communal dimension

is comprised of attributes that show a primary concern for others, such as caring, nurturance, empathy, emotional expressiveness, gentleness, and being soft-spoken. Conversely, the agentic dimension stresses assertiveness and active striving for control. The dimension is characterized by independence, self-confidence, self-reliance, self-sufficiency, persistence, and decisiveness. Females are typically believed to possess the attributes of the feminine sex role (the communal dimension) and males are believed to possess the characteristics of the masculine sex role (the agentic dimension).

The process of being socialized into the appropriate masculine and feminine behavior (i.e., sex-typing) occurs through a number of agents, including parents, siblings, teachers, and peers (Huston, 1983). With respect to gender-specific nonverbal behavior, some believe that the primary socializing agents are parents (Gilligan, 1982), while others point to experiences within same-sex peer groups as a realm of influence (Maccoby, 1990). Empirical research on sex-typing in general lends support to both positions. For example, researchers have found that parents treat their children differentially, based on their sex. Experimental studies show that when an infant's "gender" was manipulated, adults offered sex-typed toys to infant girls and boys, and encouraged gross motor activity for boys (Huston, 1983). Other studies show that parents react favorably when children engage in sex-congruent play and punish sex-inappropriate play, particularly when boys engage in it. Mothers rewarded girls' sex-appropriate play (Langlois & Downs, 1980). It appears that fathers feel a special responsibility for socializing their sons into masculine behavior patterns. They

differentiate between boys and girls more than mothers do, and their absence has an impact on the development of boys' masculinity (Huston, 1983).

Research also indicates that socialization occurs in peer contexts. For example, children are more attentive to same-sex peers and the positive and negative reactions of those peers have more impact on the child's behavior than the reaction of opposite-sex peers. That is, children tended to continue a behavior when a same-sex peer reacted positively, and discontinue the behavior when the peer reacted negatively. No such difference occurred with the feedback of an opposite-sex peer (Fagot, 1982). By age 3, children reinforce one another for sex-appropriate play and punish each other for deviating from sex stereotypes (Huston, 1983).

These social learning positions, however, are probably too simplistic. Cognitive social learning theorists believe that sex role socialization occurs through the interaction of the child's cognitive development and the socializing milieus. These researchers have shown that sex-typed behaviors, as well as the beliefs and attitudes regarding sex roles, are heavily influenced by a child's cognitive development. For example, Carter and McCloskey (1983-84) found age-related increases in elementary school children's recognition of flexibility in sex-role stereotypes. They attributed these increases to a cognitive change in children's understanding of the nature of social regulations, as opposed to a change in their beliefs about the appropriateness or inappropriateness of sex-typed behavior. Nearly all the children spontaneously reported that cross-gender behavior was not wrong, but rather "strange" or "weird", while indicating that they would punish or avoid children who engaged in cross-gender

behavior. With age, the children were increasingly staunch defenders of normative, sex-typed behavior, using ridicule to enforce what they felt was appropriate behavior.

Information-processing theorists (Bem, 1981; Martin & Halverson, 1981) primarily use the construct of gender schema--a cognitive structure consisting of expectations and associations that guide and organize an individual's perception of gender. A schema serves as an anticipatory structure, leading an individual to search for and be ready to receive information congruent with the schema. Incongruent information may be ignored or transformed (Huston, 1983).

In a five-year, longitudinal study, Trautner (1992) started with 5-year-olds and charted the developmental course of their sex-typing. Between the ages of 4 and 7, gender became an increasingly important dimension of distinguishing self and others. By 7, all participants had adopted a highly rigid, either-or absolutist conception of sex roles, which was later replaced by more flexible sex role concepts (i.e., sex role stereotypes). Between the ages of 7 and 10, the children became increasingly aware that there is considerable variation within each gender as well as similarity between the two. Trautner suggested that this reflected cognitive developments in classification abilities. Strict adherence to sex roles in the form of self-concept, peer references, and play behaviors had also weakened, but were statistically unrelated to cognitive development. Developmental trends for sex-typed behavior appeared to be similar for boys and girls; however, girls tended to be more advanced in developing flexible sex role concepts. Additionally, both sexes valued the masculine sex role more, reflecting a society-wide standard (Hyde, 1985).

Katz and Ksansnak (1994), extended these studies to early and late adolescence, attempting to determine if this trend towards flexibility continues, and to what extent changes in parental and peer influence affect cognitive flexibility regarding gender constructs (i.e., gender-schema flexibility). They found that flexibility in self and tolerance for others engaging in gender-atraditional (or cross-sex) behaviors increased from middle childhood through late adolescence (at least until the senior year of high school). Additionally, these researchers also found that, overall, girls tended to be more flexible than boys in both self-preferences and attitudes toward others. For adolescents, having opposite-sex friends with flexible attitudes was a significant predictor of their own flexibility. These results, however, contradicted some previous studies. For example, Emmerich and Shepard (1982) found developmental trends suggesting increasing intolerance for atraditional behavior, until early adolescence, followed by increasing flexibility. Katz and Ksansnak point out that this discrepancy in findings may be dependent on the domain in question, the formatting of the items assessed (i.e., forced-choice versus open-ended formats), and the age range studied.

For example, Ullian (1976) examined sex role stereotypes and attitudes as well as the basis for such judgments in children ranging from 6 to 18 years of age. She found a wave-like pattern of rigidity followed by attitudinal flexibility that was repeated over the range of her cross-sectional study. Based on the rationale for the judgments given, Ullian demonstrates that these three "waves" represent levels of cognitive development with regards to the children's conceptualizations of femininity and masculinity. Six distinct levels (two per "wave," each associated with a specific

age group) emerged from the analysis, the first "wave" (ages 6 and 8) representing a biological orientation toward understanding stereotypes, the second (ages 10 and 12) a societal orientation, and the last (ages 14-16 and 18) a psychological orientation. Within the age groups relevant to this study, Ullian found that the 12-year olds (level IV) viewed sex roles as stemming from socio-historical functions, and sex roles were not seen as inevitable or immutable (as younger children believe). Children this age believed that individual needs and preferences governed behavior, and although they were aware of standards for socially accepted behavior, they believed deviation was permissible.

Adolescents aged 14 to 16 (level V) viewed sex differences as the result of externally imposed social standards, that could, be discrepant from the true nature of men and women. Nonetheless, these adolescents differentiated between male and females on the basis of internal psychological attributes (e.g., women are more sympathetic, more dependent, more emotional; males are more protective, less emotional). Although they believed these characteristics to be the result of habit or cultural conditioning, the adolescents in this age group indicated a strong insistence on conformity to social and cultural norms. Such conformity became the basis for moral evaluations of self and others.

Ullian's 18-year olds (level VI), representing the final measured trend toward flexibility, acknowledged stereotyped differences, but did not believe these differences are basic to personal identity or necessary for optimal heterosexual functioning. These differences were viewed as a product of conventional norms and expectations

internalized by children. These adolescents recognized the moral dilemma in making judgments of others based on societal standard, and in general, used principles of equity and freedom as proposed standards of behavior, defining an ideal model of personal and interpersonal functioning.

Developmental Changes in Adolescence

Although research has begun on developmental trends in sex role orientation and attitudes in adolescence, virtually no research focuses on developmental trends in nonverbal behavior, or its contextual expression during this period of the life span. Why should we expect any changes regarding nonverbal behavior during adolescence? Adolescence is a period of tremendous change, in terms of biological maturation, cognitive development, changing social milieus, and social expectations for behavior. Puberty ushers in a host of physiological changes, from increases in height and weight to the maturation of the sex organs to breast development in girls and voice change in boys (Brooks-Gunn & Reiter, 1990).

These last characteristics (e.g., breast development, growth of facial and pubic hair, voice changes), referred to as the secondary sex characteristics, are implicated in the shift in adults' attitudes toward adolescents. As previously stated, according to the "gender intensification hypothesis" (Hill & Lynch, 1983), socializing agents' awareness of the development of these secondary characteristics triggers an increased pressure to conform to societal expectations of adult behavior, including behaving in ways congruent with sex role stereotypes.

Peer contexts now take on more influence than in previous periods of life.

These peer contexts and peer influences foreshadow the interactions of independent adulthood. The same-sex segregation of childhood yields to more complex patterns of social interactions -- peer groups become larger and more elaborate, more time is spent with peers, and one-on-one interactions with both same- and opposite-sex individuals increase (cf. Brown, 1990; Savin-Williams & Berndt, 1990). Additionally, in adolescence society consents to heterosocial interactions, more informally known as dating (McCabe, 1984; Spreadbury, 1982). Adolescents encounter these new social situations and must learn the behavior appropriate to each new context.

New cognitive developments also influence the behavior of adolescents. Formal operations brings with it increased ability to take another's perspective, as well as the ability to plan for the future (Keating, 1990). Increased differentiation in social situations will undoubtedly bring new meaning to nonverbal behavior, requiring reordering and reconstruction of schemas regarding social behavior; these new contexts may require integrating new information regarding how one behaves (e.g., new social rules).

Perceptions of Gender Differences in Nonverbal Behavior

An important aspect of interpersonal functioning is the impression left on others. Various nonverbal behaviors are differentially perceived by those they target, as well as those they do not. One aspect of nonverbal expression is linguistic patterns or speech styles, sometimes referred to as paralinguistics. Quina, Wingard, and Bates (1987) document a hypothesized "feminine speech style" that includes hedging (e.g., "I may be wrong, but..."), indecisiveness, overgeneralizations, the use of incomplete

sentences, indirect statements, and the absence of expletives. These researchers were able to provide evidence that, in general, women use a different speech style from men. Moreover, they found that individuals using such speech patterns were seen as less competent, but higher in social warmth. Unexpectedly, however, they found that those making the judgments did so regardless of the sex of the speaker. Thus, it was not the speaker's sex, but the speech pattern, that was found to reflect a lack of competence.

Stoppard and Kalin (1983) found that when subjects rated written descriptions of males and females said to possess masculine or feminine personality characteristics, masculine descriptions received higher ratings of adjustment and competence. In contrast, feminine descriptions were rated more positively on measures of interpersonal functioning. Another study found that men judged to be more masculine and women judged to be more feminine were rated as more attractive (Lippa et al., 1983).

Also relevant to perceptions of sex-typed behavior is the impressions of cross-gender behavior. Females engaging in sex-incongruent (or stereotyped "masculine") behavior have been perceived as "sick" or "maladjusted" (Page, 1987; Rachkowski & O'Grady, 1988). Until recent revisions to diagnostic manuals, clinicians still used "effeminate" behavior in boys as diagnostic of future homosexuality (Hockenberry & Billingham, 1987).

Sex Roles and Perceptions of Nonverbal Behavior

Hall (1984) proposed that sex stereotypes can create a bias that could be expected to inflate sex differences. She argues that such exaggeration could result from the infusion of stereotypes into the observer's descriptions. Although she was

referring to scientific observers, this could apply to not-so-scientific observations as well. With respect to nonverbal behavior, there is some, albeit very limited support for such a position.

In one of the few studies examining body movements, Frable (1987) used "point light displays." These displays allow the examination of perception of movements without the presence of other gender cues. Individuals were videotaped walking across a dark background, while wearing dark clothes with reflective tape at the joints. These videotapes were described by individuals who were classified on the basis of sex role orientation. When sex-typed and cross-sex-typed subjects (representing extremes in adherence to sex stereotypes) described the display movements, they spontaneously generated gender-connoting terms. However, these individuals were also more accurate at identifying the sex of the videotaped individual.

It could be that the individuals who are more extremely typed (i.e., traditionally- and cross-sex-typed) may be using gender schema more than those who are not strongly sex-typed (i.e., androgynous or undifferentiated individuals). Those who use gender schema may be more attuned to behavior related to sex roles. The "lenses" through which they view the world are more colored by "gender" than others. Whether this results in biased perceptions or more accurate perceptions remains to be seen.

Other Perceptions of Nonverbal Behavior

Empirical research indicates that perceptions of likeability, attractiveness, maturity, and competence can be influenced by nonverbal behavior. Likeability and

attractiveness have been attributed to people who have positive facial expressions (e.g., those who smile more frequently) (Anderson, 1991; Reis, Wilson, Monestere, Bernstein, Clark, Seidl, Franco, Gioioso, Freeman, Radoane, 1990). Competence has been attributed to individuals with positive facial expressions (Burgoon, Birk, & Pfau, 1990; Lee, McGill, & Uhlemann, 1988) and with high levels of gaze or eye contact (Anderson, 1991). Males and females rated opposite-sex confederates more favorably when the confederates smiled and gazed (Kleinke & Taylor, 1991).

Physical Attributes and Perception

Physical characteristics have also been known to influence other's perceptions. Individuals endowed with physical attractiveness are generally perceived more positively on a host of variables. This well-known "halo effect" was demonstrated in a classic study by Dion, Berscheid, and Walster (1972). Female targets who were judged to be more physically attractive were also judged to be significantly better adjusted socially, to have better personalities, and to be more competent on a variety of tasks. None of these attributions were rationally linked to the target's physical attractiveness. Dion and his colleagues argued that such biases appear when positive external, physical characteristics serve as the basis for inferring internal, invisible personality attributes. When the cuing traits (e.g., physical beauty) are enduring, permanent personal features, these "halo effects" may also reveal the underlying belief in people's implicit theories of personality (Schneider, 1973). As Dion et al. (1972) put it, "What is beautiful is also good."

Another cuing trait found to have a similar effect is babyfacedness. Individuals

judged to have babyfaced features (i.e., people with large eyes, low vertical placement of features, and short features, either singly or in combination) were also rated as less competent (Berry & McArthur, 1985), less physically strong, less socially dominant, and less intellectually astute (McArthur & Apatow, 1983-84). Looking childlike, thus is equated with being childlike.

The Present Study

Little research examines nonverbal behavior among mixed-sex, same-age dyads in adolescence. Two studies (Kolaric & Galambos, 1995; Montemayor & Flannery, 1989) are examples of such research during this period of the life span. The present study is an attempt to provide evidence as to the meaning of the display behaviors found in the Kolaric and Galambos study: the hair flipping and attempts to appear smaller in girls and the chin touching in boys. They posited that these behaviors may be behavioral expressions of adolescents' adherence to sex roles.

Several additional nonverbal behaviors were chosen for analysis, on the basis of two strands of research: a) behaviors expressed in courtship contexts and b) behaviors linked to sex roles. These behaviors are: hair strokes (i.e., stroking, touching, smoothing the hair), head tosses (flipping hair by head movements), coy smiles (as opposed to coy looks, adding the component of a half-smile), face rests (resting the face on the palm of the hand), backward leans, eyebrow lifts (coded first alone and also when accompanied by a smile) and head akimbos (touching the back of the neck with extended arms, such that the chest is exposed or displayed). These behaviors were selected using one or both of two criteria. First, sex differences in the expression of the

behavior had been identified in the literature. Second, a theoretical or empirical link had been made in the literature between the behavior and an expressive function that could be categorized as "agentic" or "communal."

For example, on the basis of sex differences, Kolaric and Galambos identified hair flips, coy looks and appearing smaller as possible "feminine" behavior. Other identified sex differences included the tendency for men to take up more space and for women to use closed body postures (Eagly, 1987; McCormick & Jones, 1989). Because appearing smaller is a closed posture, it was categorized in the present study as "feminine." According to McCormick and Jones (1989), women in comparison to men use more grooming gestures including smoothing the hair and self-touching. Grammar (1990) found that sex differences in head tossing and hair flips were more frequently engaged in by women and were associated with demonstrating interest in a partner. Face rests appear to be the "feminine" equivalent of chin touching. This action places the head in a "cant position," where the head is slightly tilted. "Cant positions" are interpreted as signaling general submission (Goffman, 1976), and are generally associated with the feminine sex role.

Eyebrow lifts were identified by Hass (1970) and Eibl-Eibesfeldt (1971) as courtship behavior. They describe a widening of the eyes that is accompanied by the lifting of the eyebrows as a "greeting with the eyes," meant to signify pleased surprise at seeing someone. Hass stated that this behavior is often accompanied by a smile and engaged in by flirting women. Moore, who refers to this behavior as an eyebrow "flash," documented women in flirting contexts engaging in this behavior. Although

these researchers have asserted that females engage in eyebrow lifts, their studies are mainly ethological and no attempts to investigate a sex difference have been documented. Based on the characterizations by Hass and Eibl-Eibesfeldt, however, eyebrow lifts (for the purposes of this study, both eyebrow flashes and lifts will be known hereafter as lifts) were assigned in the present study to the "feminine" category. Additionally, these researchers and others (Moore, 1985; 1995) have commented that this "eyebrow lift" is often displayed accompanied by smiling. This compound behavior was considered in the present study as "feminine." "Feminine" behaviors, then, are: hair flips, hair strokes, head tosses, appearing smaller, face rests, eyebrow lifts and eyebrow lifts accompanied by a smile.

Kolaric and Galambos (1995) also identified sex differences in chin touching. Because this behavior was engaged in more by boys, it was categorized as "masculine" behavior. Additionally backward leans and head akimbos tend to take up more space, so these were considered in the present study as "masculine" behaviors. The behaviors categorized as "masculine," then are: chin touches, backward leans, and head akimbos.

Although there is some evidence to suggest that the above behaviors may be "feminine" or "masculine," at this point it is important to note that these are tentative delineations, used to categorize the behaviors for testing hypotheses.

This study aimed to examine these behaviors through the perceiver's attributions of their partners and their own attitudes toward sex roles. Additionally, an attempt was made to explain variance in these perceptions using the adolescents' self-rated pubertal development and judges' ratings of physical attractiveness and

babyfacedness.

In this study, unacquainted boys and girls met and discussed a hypothetical scenario so that their nonverbal behavior could be recorded. The dyad members were then asked to rate their partner on several dimensions of personal characteristics (i.e., social attractiveness, likeability, competence, maturity, masculinity, and femininity). They also rated their own pubertal development and attitudes toward sex roles. Additionally, judges rated the adolescents' physical attractiveness and babyfacedness.

Hypotheses

From the literature review, the following hypotheses were developed:

Sex Differences in Nonverbal Behaviors

1. Girls, relative to boys, will engage in higher frequencies and/or durations of hair flips, hair strokes, head tosses, coy smiles, appearing smaller, face rests, and eyebrow lifts (coded alone and when accompanied by smiling).

2. Boys, relative to girls, will engage in higher frequencies and/or durations of backward leans, chin touches, and head akimbos.

Gender-Congruent Nonverbal Behaviors and Partners' Ratings of Personal Characteristics

1. Girls engaging in high frequencies (and/or durations) of hair flips, hair strokes, head tosses, coy smiles, appearing smaller, face rests, eyebrow lifts and eyebrow lifts accompanied by smiling will receive higher ratings of social and physical attractiveness, likeability, and femininity from their male partners, as well as lower ratings of competence and maturity.

2. Boys engaging in high frequencies (and/or durations) of chin touches, backward leans, and head akimbos will receive higher ratings of social and physical attractiveness, likeability, competence, maturity and masculinity from their female partners.

Gender-Incongruent Nonverbal Behaviors and Partners' Ratings of Personal Characteristics

1. Girls engaging in high frequencies (and/or durations) of chin touches, backward

leans, and head akimbos will receive higher ratings of competence, maturity and masculinity from their male partners. No associations with likeability, social, or physical attractiveness were hypothesized.

2. Boys engaging in high frequencies (and/or durations) of hair flips, hair strokes, head tosses, coy smiles, appearing smaller, face rests, and eyebrow lifts (alone and with smiling) will receive lower ratings of social and physical attractiveness, likeability, competence, maturity, and masculinity.

Physical Features and Partners' Perceptions

1. Targets judged to be more physically attractive will receive higher partner ratings of social and physical attractiveness, likeability, competence, and maturity.

2. Targets judged to be more babyfaced will receive lower ratings of competence and maturity. No associations between babyfacedness and attractiveness or likeability were hypothesized.

3. Targets reporting more advanced pubertal development will receive higher ratings of social and physical attractiveness, likeability, competence, and maturity.

Sex Roles and Partners' Rating of Personal Characteristics

1. Boys rating their female partners as more feminine will also rate them as less competent and mature.

2. Girls rating their male partners as more masculine are expected to also rate them as more competent and mature.

Attraction to and Likeability of Partner and Own Gender-Congruent Nonverbal Behavior

1. Girls who find their partners attractive and likeable will engage in more hair flips, hair strokes, head tosses, coy smiles, appearing smaller, face rests, and eyebrow lifts (with and without smiles).

2. Boys who find their partners attractive and likeable will engage in more chin touching, backward leans, and head akimbos.

Sex Role Attitudes and Ratings of Partners' Personal Characteristics

1. Girls reporting more traditional sex role attitudes, when compared to girls reporting less traditional attitudes, are expected to find chin touches, backward leans, and head akimbos more socially and physically attractive, likeable, competent, mature, and masculine when exhibited by the boys.

2. Boys reporting more traditional sex role attitudes, when compared to boys reporting less traditional attitudes, are expected to find hair flips, hair strokes, head tosses, coy smiles, appearing smaller, face rests, and eyebrow lifts (alone and with smiling) more social and physical attractive, likeable, and feminine when exhibited by the girls. There are no hypothesized associations for competence and maturity.

CHAPTER III

METHOD

This chapter describes the participant sampling procedures, the procedures used to collect the data, the specific nonverbal behaviors chosen for analysis, the instruments used to assess the participants' perceptions of their partners, and the procedures and instruments used to assess the participants' physical characteristics.

Participants

Participants were drawn from two sources: invitations to participate through the Greater Victoria School District (see Appendix A and B) and to participants of the Youth Experience Survey (YES, a research project previously conducted at the University of Victoria). From the local schools, a total of 191 9th and 10th graders were invited to participate. Out of that number, 103 students agreed to participate (54% response rate); 52 students were actually used (27% of total available). From the YES project, 57 9th and 10th graders were invited to participate, out of which 13 students accepted (22% response rate) and 8 students were actually used (14% of total available). Overall, the study had a 47% response rate and 24% of the students available were utilized.

Participants included 30 males and 30 females from the 9th and 10th grades. Participants were paired with an unacquainted partner prior to their arrival, based on the following criteria: a) they had been given parental consent (see Appendix C), b) they were from different schools, c) both were in the same grade, and d) they had coinciding times available for participation.

Procedures

To prevent participants from becoming acquainted before data collection, members of each dyad were escorted, by the researcher, from separate waiting areas to the Human Interaction Laboratory. In the center of this room was a table with a removable partition intended to obstruct visual contact. After seating one member of the dyad behind the partition, the second member was brought into the room and seated on the other side of the partition, across from the first participant. In this way, the dyads had no verbal or visual contact prior to discussion -- a necessary precaution to preclude even brief interactions that might have led to the establishment of power relationships (Rosa & Mazure, 1979).

Once participants were seated, they were briefed regarding the purpose of the study and told that they would be asked to talk to each other for 5 minutes, that a hypothetical scenario was being provided to get them started, and that their interactions during the discussion would be videotaped. Specifically, while the experimenter pointed out each video camera, they were told that they were being recorded from the waist up. They were informed that they had the right to end their participation at any time and that they could ask to have any portion of their videotaped segment erased at any time without repercussions. They were also informed that they would be asked to fill out a short questionnaire and have their photograph taken. Following this, they would be brought into the control room to view their taped interaction. They were informed as to the expected length of the procedures and requested to read and fill out a consent form (Appendix D) if they still chose to participate.

Before the discussion, each dyad member was given a 4 X 11 sheet of paper, placed face down on the table in front of them, providing the selected discussion scenario and questions. They were directed to use a hypothetical scenario as a starting point for their discussion. The scenario and questions, provided by the researcher, were given to the dyad to prompt their discussion (e.g., Given unlimited time and money, where would you go? What/who would you take with you? What would you do once you got there?) (See Appendix E). Most dyads used the scenario, although they strayed off into topics of their own choosing later in the taping. The procedure used was very similar to that used by Dovidio and colleagues (1988). Participants were told that they could look at the card as soon as the researcher left the room. The dyad members were instructed to remove the partitions (each had one side) when they heard the signal of three loud knocks on the wall between the control room and the interaction room. Participants were given approximately 15 seconds to study the card before the signal was given.

The researcher reentered the room following the 5-minute session, replacing the partition and handing out questionnaire packages. The partition provided some privacy to the participants for answering the questionnaires. The researcher again left the room and returned in approximately 20 minutes to collect the questionnaire, take their photographs, and take the participants into the control room to view their taped segment. During this time, the participants were debriefed regarding the purpose of the study, and all questions that arose were answered. A video/photo release form (Appendix F) was then explained and voluntary signatures were requested.

Participants were paid an honorarium. Initially, the honorarium was only $10 (12 were paid this amount). Due to the difficulty of recruiting potential participants, the amount was increased to $15 (48 were paid this amount).

Measures

Nonverbal Behaviors

The nonverbal behaviors selected for analysis included:

1. Hair flips: flipping or brushing away the hair with one or more fingers or the whole hand (frequency);
2. Hair strokes: stroking, smoothing hair with fingers or palm of hand (frequency);
3. Head tosses: flipping hair by tossing head (without touching hair) (frequency);
4. Coy smiles: smiling at partner (teeth either not displayed or partially displayed in half smile) while glancing downward/sideways (frequency);
5. Appearing smaller: pulling the body appendages (arms, legs) in towards the torso (frequency and duration);
6. Face rests: holding the face or resting the face in one or both hands (duration) (does not include resting face on chin);
7. Backward leans: leaning the torso backward so that the body forms an acute angle (duration);
8. Eyebrow lifts: Raising one or both eyebrows such as when expressing surprise
    a. Accompanied or unaccompanied by smiling (frequency);
    b. Only when accompanied by a smile (frequency);

9. Chin touches: using the thumb and/or index finger, or fist to grasp, stroke, or rest the chin (duration);

10. Head akimbos: touching the back of one's neck by extending one or both arms such that one's chest is displayed.

Coding of these behaviors was accomplished by one researcher, and by one additional researcher (who was blind to the hypotheses) for the purpose of assessing interrater reliability. For the purpose of establishing reliability, three taped segments (10%) were randomly selected and independently rated for the above behaviors by both raters. Percentage of agreement for each segment were calculated, based on a standard reliability formula (cf. McCormick & Jones, 1989). For each behavior, the lower value of the two raters (frequency or duration) was divided by the higher value and multiplied by 100. The mean of these percentages was calculated across segments, providing an index of reliability.

The overall mean percentage of agreement was 91.33%. The percentage of agreement for each coded behavior is as follows: hair flips, 94%; hair strokes, 97%; head tosses, 100%; coy smiles, 78%; appearing smaller (frequency), 89%; appearing smaller (duration), 99%; face rests, 91%; backward leans, 78%; eyebrow lifts, 85%; eyebrow lifts with smiles, 90%; chin touches, 95%; head akimbos, 100%.

Likeability

The Interpersonal Evaluation Inventory (Kelly, Kern, Kirkley, Patterson, & Keane, 1980), which consists of 26 personality items (e.g., inoffensive, friendly, likeable, attractive, etc.), anchored by 5-point bipolar ratings was used to assess

likeability (see Appendix G). Adolescents were asked to rate their partner on each adjective by responding to the following statement: "I think the adolescent I just met was.... agreeable, friendly, good-natured" (1 = extremely untrue, 3 = neither true or untrue, 5 = extremely true). Twenty-four of these items have been previously validated as sensitive to interpersonal attraction and likeability (Anderson, 1968). Internal consistency of the 24 items in this study, using Cronbach's coefficient alpha, was .79.

Attractiveness

The Interpersonal Attraction Measure (McCroskey & McCain, 1974) was used to assess one partner's rating of the other partner's attractiveness (see Appendix H). This measure contains three scales, two of which were employed in this study: social and physical attraction. The social attraction scale is made up of five Likert-type items, such as "I would like to have a friendly chat with him/her" and "We could never establish a personal friendship with each other (reverse coded)." The physical attraction subscale consists of seven Likert items, such as "I think he/she is quite cute" and " He/She is somewhat unattractive (reverse coded)." Each item is rated using a five-point scale (1 = extremely untrue, 3 = neither true or untrue, 5 = extremely true). The internal reliability of this scale has been adequately established (McCroskey & McCain, 1974). Cronbach alphas for this sample were .67 for social attractiveness and .88 for physical attractiveness.

Competence, Maturity, Masculinity and Femininity

The competence measure, (see Appendix I) developed by the researcher, uses an adjective checklist format, rated with Likert scales ranging from 1 (extremely untrue) to 5 (extremely true). Items included the following adjectives: capable, competent, dependable, responsible, smart, and successful. Cronbach's alpha for the competence scale was .79. Maturity, femininity and masculinity were all assessed with single-item indicators, using the same format as the competence items.

Sex Role Attitudes

Adapted from the Attitudes toward Women Scale (Spence & Helmreich, 1972) for use with adolescent subjects, the Attitudes toward Women Scale for Adolescents (AWSA; Galambos, Petersen, Richards, & Gitelson, 1985) is a 12-item instrument designed to measure the extent to which an individual approves of traditional roles for women (Appendix J). Items (e.g., "Girls should have the same freedoms as boys") are rated on a four-point scale ranging from "agree strongly" to "disagree strongly," which are used to compute a mean score. Evidence of adequate psychometric properties has been provided for several early adolescent samples (Galambos, et al., 1990; Galambos et al., 1985). Internal consistency for this sample was .80.

Pubertal Status

Pubertal status was measured using the Pubertal Development Scale (PDS; Petersen, Crockett, Richards, & Boxer, 1988). The PDS (Appendix K) consists of 5 items on which the adolescent rates the extent of physical maturation. Items address height increases, body hair, and skin changes in girls and boys, voice changes and

facial hair in boys, and breast development and menarche in girls. Pubertal status was the mean of four items. The height item was omitted because of low item-total correlations in previous studies (cf. Brooks-Gunn, Warren, Rosso, & Garguilo, 1987). Cronbach's alphas, calculated separately, were .19 for girls and .54 for boys. These reliabilities are most likely low due to a ceiling effect. Within this age range (14 to 16 years), most girls have already begun to menstruate and are advanced in their pubertal development. The boys' scores indicate a similar trend. However, because the pubertal development of boys lags, on average, two years behind girls (Brooks-Gunn & Reiter, 1990), there is more heterogeneity in boys' developmental status, and the reliabilities are higher, as would be expected.

Babyfacedness

The babyfacedness of each adolescent was judged, using photographs taken from the videos, and procedures similar to Zebrowitz, Kendall-Tackett, and Fafel (1991). The photographs were divided into two gender-based stacks (i.e., one stack for girls, another for boys) and shuffled prior to each judging session, to create a random order of presentation.

Because there is a high degree of consensus among people in general as to what is babyfaced, and the "innocence" effect associated with babyfacedness persists across the life span (Zebrowitz & Montepare, 1992), naive judges were used. Ten university students from the Psychology 100 Subject Pool were utilized as judges.

Prior to judging, judges were told that "babyfaced" meant that an individual had baby-like features (i.e., a round as opposed to angular face, large eyes, and small chin).

Each judge was then presented with a photo and asked to rate the individual's babyfacedness using a 7-point Likert scale (1= babyfaced, 4 = in between, 7 = mature-faced). All photos from one stack were presented, followed by the other stack. Order of stack presentation was counterbalanced. Reliability was calculated by treating each rater as a scale item and calculating Cronbach's coefficient alpha. For this sample, Cronbach's coefficient alpha was .75.

Physical Attractiveness

The physical attractiveness of each of the dyad members was assessed by a separate set of judges from the Psychology 100 pool, utilizing the same system as for babyfaced ratings. A similar 7-point Likert scale was used for the ratings (1 = extremely unattractive, 4 = in between, 7 = extremely attractive). Cronbach's coefficient alphas were calculated in the same manner as for babyfacecedness. Cronbach's alpha was .86.

CHAPTER IV

RESULTS

Prior to conducting statistical analyses, frequencies and durations of the nonverbal behaviors (i.e., hair flips, hair strokes, hair tosses, coy smiles, appearing smaller, backward leans, eyebrow lifts, eyebrow lifts with smiles, chin touches, face rests, and head akimbos) were examined in order to determine whether the behaviors were frequent enough and had enough variability to include in further analyses. As shown in Table 1, there were low occurrences of hair flips (boys, $\underline{M}$ = .00; girls, $\underline{M}$ = .30) and head akimbos (boys, $\underline{M}$ = .46; girls, $\underline{M}$ = .00). Therefore, these nonverbal behaviors were dropped from further analysis.

Next, paired t-tests were conducted on the nonverbal behaviors to determine whether there were sex differences in these behaviors. Results, including means and standard deviations, are reported in Table 1. The behaviors most frequently exhibited by the girls were eyebrow lifts (alone or with smiles), and coy smiles; for boys, the most frequently exhibited behaviors were eyebrow lifts and coy smiles. Those behaviors exhibited the longest by girls were appearing smaller and face rests; by boys, appearing smaller and chin touches.

With the exception of coy smiles, all the nonverbal behaviors are positively skewed (coy smiles appears to be distributed normally). Further, nearly all the variables show a good deal of heterogeneity of variance across sex (i.e., the standard deviations of appearing smaller, chin touches, and hair strokes are different in magnitude for boys and girls). Although positive skewness and heterogeneity of

Table 1

Results of Paired T-Tests Examining Sex Differences in Nonverbal Behaviors

	Girls		Boys		
Nonverbal behavior	M	SD	M	SD	t
Hair flips[a]	.30	.84	.00	.00	[c]
Hair strokes[a]	2.60	4.64	.50	.90	**2.79****
Head tosses[a]	.20	.48	.57	2.18	-.95
Coy smiles[a]	10.50	6.73	8.03	5.22	**1.85***
Appearing smaller[a]	.93	1.89	.47	.94	1.47+
Appearing smaller[b]	44.04	86.67	17.93	59.04	1.45+
Face rests[b]	16.48	49.92	4.80	11.62	1.34+
Eyebrow lifts[a]	12.03	12.96	8.67	9.37	1.13
Eyebrow lifts/smile[a]	7.33	8.57	3.30	4.91	**2.22***
Backward leans[b]	1.41	2.76	2.96	5.88	-1.51+
Chin touches[b]	.81	2.12	9.65	26.27	**-1.97***
Head akimbos[b]	.00	.00	.46	2.44	[c]

Note. All statistics are one-tailed, paired t-tests, $df = 29$.

[a]Frequency. [b]Duration in seconds. [c]Removed from analyses due to low frequency/durations.

+ $p < .10$, one-tailed. * $p < .05$, one-tailed. ** $p < .01$, one-tailed

Add to result

variance violate two assumptions of dependent t-tests, this statistic is relatively robust to both violations, provided that the n of both groups is the same (Shavelson, 1988). The n of both groups, in this case, is 30.

-tell n. no.

As can be seen from the t-test results, both boys and girls engaged in most of these behaviors, but some were primarily engaged in by boys or by girls. One-tailed tests revealed four significant sex differences: girls engaged in more hair strokes, coy smiles, and eyebrow lifts accompanied by smiling than did boys; boys engaged in more chin touching.

In general, boys and girls perceived their partners to be attractive, likeable, competent and mature (for means and standard deviations of partners' perceptions, see Table 2). With respect to sex roles, ratings appeared to be sex-typed: girls rated boys as more masculine and less feminine; boys rated girls as more feminine and less masculine.

The adolescents rated themselves as likeable, competent, mature, and having nontraditional sex role attitudes (see Table 3 for descriptive statistics of self-perceptions). Their own sex role identity also variance violate two assumptions of dependent t-tests, appeared to be sex-typed: girls rated themselves as more feminine and less masculine; boys rated themselves as more masculine and less feminine. Additionally, the adolescent boys and girls reported that they were, on average, pubertally mature. In fact, it appeared that the pubertal status scale had a ceiling effect, especially for the girls. That is, the mean (girls, M = 3.36; boys, M = 3.11) was very close to the upper limits of the scale's range, and there was little variability in the

Table 2

Ratings of Partners' Personal Characteristics

Partner's personal characteristic	Girls' Rating of Boys			Boys' Rating of Girls		
	M	SD	n	M	SD	n
Social attractiveness	3.60	.78	30	3.58	.54	29
Physical attractiveness	3.47	.82	30	3.47	.85	29
Likeability	4.00	.32	30	3.97	.45	29
Competence	3.74	.52	29	3.97	.59	29
Maturity	3.80	.81	30	3.90	.77	29
Femininity	1.72	.96	29	3.93	.92	29
Masculinity	3.73	.87	30	2.00	1.07	29

Note. Possible range of all variables = 1 to 5.

Table 3

Self-Rated and Judge-Rated Personal Characteristics

	Girls			Boys		
Personal characteristic	M	SD	n	M	SD	n
Likeability	4.09	.42	27	3.71	.45	26
Competence	4.06	.55	27	3.85	.79	26
Maturity	3.96	.71	27	3.92	.81	25
Femininity	4.15	.86	27	1.69	.84	26
Masculinity	1.92	1.20	26	4.08	.93	26
Sex role attitudes	3.74	.22	30	3.40	.48	30
Pubertal status	3.36	.36	29	3.11	.46	29
Physical attractiveness (Judges')	3.99	.86	30	3.63	.73	28
Babyfacedness (Judges')	4.23	.85	30	4.50	.78	28

Note. Possible ranges for scales are as follows: 1 to 4 for sex role attitudes and pubertal status; 1 to 5 for likeability, competence, maturity, femininity, masculinity; 1 to 7 for babyfacedness and physical attractiveness.

scores (girls, SD = .36; boys, SD = .46).

Intercorrelations among the variables were also examined. Ratings of partners' personal characteristics (see Table 4) are highly interrelated. Girls who perceived their partners as socially or physically attractive also rated them as more likeable, competent, mature, and masculine, but less feminine. Boys perceived as being more competent were also perceived as more mature, likeable, and attractive.

Boys who perceived their partners as physically attractive also rated the girls as more socially attractive, likeable, mature, and feminine, but less masculine. Those girls who were perceived as likable were also perceived as competent and mature, but interestingly, girls' perceived competence was unrelated to perceptions of attractiveness (either social or physical). Overall, femininity and masculinity were inversely related: individuals perceived as more feminine were perceived as less masculine and vice versa.

This relationship between femininity and masculinity also held for the adolescents' perceptions of themselves. Boys who rated themselves as more masculine also rated themselves as less feminine and girls who rated themselves as more feminine also rated themselves as less masculine (see Table 5). Boys who rated themselves as more masculine also rated themselves as being more likeable and holding more traditional sex role attitudes. When the boys perceived themselves as competent, they also perceived themselves as more mature, less feminine and more masculine. Girls who rated themselves as mature also saw themselves as more competent; girls who perceived themselves as more likeable also perceived themselves as more feminine.

Table 4

Intercorrelations Among Ratings of Partners' Personal Characteristics

	Personal characteristics[a]						
	Sa	Pa	Like	Comp	Mat	Fem	Mas
Sa	-	**.39***	**.39***	.15	.24	.26+	-.14
Pa	**.68****	-	**.36***	.10	**.31***	**.45****	**-.39***
Like	**.41***	**.63****	-	**.58****	**.58****	**.42***	**-.35***
Comp	**.37***	**.47****	**.54****	-	**.62****	.18	-.04
Mat	**.52****	**.64****	**.40***	**.44****	-	**.49****	-.26+
Fem	**-.32***	-.13	-.06	.08	-.21	-	**-.58****
Mas	**.47****	**.51****	.29+	.30+	**.51****	**-.39***	-

Note. Top half of matrix reports boys' (n = 29) ratings of girls and bottom half reports girls' (n = 29 to 30) ratings of boys.

[a]Sa = Social Attractiveness, Pa = Physical Attractiveness, Like = Likeability, Comp = Competence, Mat = Maturity, Fem = Femininity, Mas = Masculinity.

+ $p < .10$, two-tailed. * $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Table 5

Intercorrelations Among Self-Rated Personal Characteristics

	Personal characteristics[a]					
	Like	Comp	Mat	Fem	Mas	Atw
Like	-	**.43***	.15	-.15	**.59****	-.31+
Comp	.24	-	**.61****	**-.33***	**.67****	-.16
Mat	-.00	**.36***	-	.02	.03	.19
Fem	**.42***	.16	.14	-	**-.58****	.17
Mas	.12	.08	-.00	**-.69****	-	**-.43***
Atw	-.03	-.00	.03	.04	.10	-

Note. Top half of matrix reports boys' (n = 29) ratings and bottom half reports girls' (n = 29 to 30) ratings.

[a]Like = Likeability, Comp = Competence, Mat = Maturity, Fem = Femininity, Mas = Masculinity, Atw = Attitude towards women.

+ $p < .10$, two-tailed. * $p < .05$, two-tailed. ** $p < .01$, two-tailed.

Thus, for both boys and girls being likeable was associated with being more masculine and feminine, respectively.

Correlations among physical characteristics are shown in Table 6. Girls who were pubertally mature were also rated as more babyfaced; boys who were judged to be more babyfaced were also judged to be more physically attractive.

Gender-Congruent Nonverbal Behaviors and Partners' Ratings of Personal Characteristics

With respect to the hypothesized relationship between gender-congruent (feminine) nonverbal behavior and partners' perceptions (e.g., girls engaging in higher frequencies of hair strokes will be rated by their male partners as more socially attractive, and so on), Pearson correlations were calculated. All correlations were considered significant only if the 1-tailed p value was less than .05 and was in the hypothesized direction. Correlations of girls' nonverbal behavior (feminine) and their male partners' perceptions are reported in Table 7. More coy smiling in girls was associated with boys' ratings of them as more socially (r = .38) and physically attractive (r = .43); appearing smaller (frequency) was associated with boys' ratings of them as more physically attractive (r = .41); more hair tossing in girls was associated with being rated as more feminine by the boys (r = .35).

Correlations of boys' nonverbal behavior (masculine) and their female partners' perceptions of them are reported in Table 8. For boys, there was only one significant correlation: more chin touching was associated with girls' ratings of them as more likeable (r = .33).

Table 6

Intercorrelations Among Physical Characteristics

	Physical characteristics		
	Pubertal status	Physical attractiveness	Babyfacedness
Pubertal status[a]	-	.10	.15
Physical attractiveness[b]	.27+	-	**.36***
Babyfacedness[b]	**.37***	-.11	-

Note. Top half of matrix reports correlations for boys (n = 29) and bottom half reports correlations for girls (n = 29 to 30).

[a]Self-rated. [b]Judge-rated.

+ p < .10, two-tailed. * p < .05, two-tailed.

Table 7

Correlations Between Girl's Gender-Congruent (Feminine) Nonverbal Behavior and Boy's Ratings of Her

	Girl's nonverbal behavior							
Boy's rating	Hair stroke	Head toss	Coy smile	Appear small	Appear small[a]	Face Rest[a]	Eyebrow lift	Eyebrow lift/smile
Social attractiveness	-.08	.20	**.38***	.25+	.09	-.10	.11	.21
Physical attractiveness	.16	.17	**.43***	**.41***	.28+	.28+	-.03	.09
Likeability	-.03	.07	.28+	.13	.10	-.01	.25+	.27+
Femininity	.04	**.35***	.15	.30+	.28+	.02	.02	.06
Competence	-.10	.09	.02	.06	-.00	.09	.21	.08
Maturity	-.05	.06	-.19	.14	.04	.28+	.15	.08

Note. $n = 29$.

[a]Duration in seconds. All others values are based on frequencies.

+ $p < .10$, one-tailed. * $p < .05$, one-tailed.

Table 8

Correlations Between Boy's Gender-Congruent (Masculine) Nonverbal Behavior and Girl's Ratings of Him

	Boy's nonverbal behavior	
Girl's rating	Backward lean	Chin touch
Social attractiveness	.07	.01
Physical attractiveness	.14	.18
Likeability	.03	**.33***
Competence	-.04	.04
Maturity	.24+	.09
Masculinity	-.12	-.18

Note. $n = 29$ to 30. Values are based on durations in seconds.

+ $p < .10$, one-tailed. * $p < .05$, one-tailed.

Gender-Incongruent Nonverbal Behaviors and Partners' Perceptions

Pearson correlations, performed separately by sex, were calculated to analyze the hypothesized relationships between gender-incongruent nonverbal behavior and partners' ratings (e.g., boys engaging in more hair tossing, etc., will be rated as less likeable, competent, etc.; girls engaging in more chin touching, etc., will be rated as more competent, mature, etc.). Girls' nonverbal behavior (masculine) and male partners' perceptions of her are reported in Table 9. Only one correlation was significant: more chin touching was associated with boys' ratings of the girls as more masculine (r = .38). Boys' nonverbal behavior (feminine) and partners' perceptions of them are reported in Table 10. Several correlations were significant: more hair stroking in boys was associated with girls' lower ratings of the boys' likeability (r = -.32), more hair tossing in boys was associated with lower ratings of physical attractiveness (r = -.32), and more appearing smaller (duration) in boys was associated with lower ratings of masculinity (r = -.30). One correlation was significant in the direction opposite to that hypothesized: more frequent appearing smaller was associated with the girl's rating the boy as more likeable (r = .37).

Physical Features and Partners' Perceptions

With respect to the hypothesized relationships between physical features (i.e., physical attractiveness, babyfacedness, and pubertal maturity) and partners' perceptions (e.g., attractiveness, competence, likeability, maturity), Pearson correlations were calculated and reported in Table 11. Only one correlation was significant for girls: judges' ratings of physical attractiveness were positively associated with males'

Table 9

Correlations Between Girl's Gender-Incongruent (Masculine) Nonverbal Behavior and Boy's Ratings of Her

	Girl's nonverbal behavior	
Boy's rating	Backward lean	Chin touch
Competence	.07	.19
Maturity	.07	.29+
Masculinity	-.08	**.38***

Note. $n = 29$. Values are based on durations in seconds.

+ $p < .01$, one-tailed. * $p < .05$, one-tailed.

Table 10

Correlations Between Boy's Gender-Incongruent (Feminine) Nonverbal Behavior and Girl's Ratings of Him

	Boy's nonverbal behavior							
Girl's rating	Hair stroke	Head toss	Coy smile	Appear small	Appear small[a]	Face Rest[a]	Eyebrow lift	Eyebrow lift/smile
Social attractive[c]	.08	-.16	.07	.18	.18	-.03	.25	.24
Physical attractive[c]	.19	**-.32***	-.15	-.02	-.05	.06	.10	.01
Likeability	**-.32***	-.29+	-.26+	.37[b]	.04	-.19	-.09	-.21
Competence	-.22	-.13	-.30+	.27	-.02	-.28+	.05	-.03
Maturity	.14	-.03	-.06	.08	-.13	-.16	.17	.16
Masculinity	.18	-.12	-.20	.03	**-.30***	-.04	-.03	-.05

Note. $n = 29$.

[a]Duration in seconds. All others values are based on frequencies. [b]Correlation significant, opposite to hypothesized direction.

[c]Attractive = attractiveness.

+ $p < .10$, one-tailed. * $p < .05$, one-tailed.

Table 11

Correlations of Judge's and Boy's Ratings of Girl's Physical and Personal Characteristics

	Judges' rating of girl	
Boy's rating	Physical attractiveness	Babyfacedness
Social attractiveness	.11	nh[a]
Physical attractiveness	**.63****	nh
Likeability	.21	nh
Competence	-.12	.01
Maturity	.15	-.24

Note. $n = 29$.

[a]Not hypothesized.

** $p < .01$, one-tailed.

ratings of physical attractiveness (r = .63). That is, judges and male partners had a high level of agreement on the girls' physical attractiveness.

The correlations for boys are reported in Table 12. For boys, judges' ratings of physical attractiveness were positively associated with females' ratings of maturity (r = .37). That is, when a judge rated a boy as being more physically attractive, the boy's partner rated him as more mature.

With respect to the hypothesized relationship between pubertal status and partner ratings, separate Pearson correlations were calculated. No significant correlations were found (see Table 13), most likely due to the ceiling effect and resulting restricted range in pubertal status.

Sex Roles and Partners' Perceptions

With respect to the hypothesized relationship between partners' perceptions of femininity or masculinity and partners' ratings of competence and maturity, separate Pearson correlations were calculated and reported in Table 14. Boys rated as more masculine by their female partners were also rated as being more mature (r = .51). For girls, the relationship between femininity and maturity was significant, but in the direction opposite to that hypothesized: girls rated by their partners as more feminine were also rated as being more mature (r = .49).

Attraction, Likeability and Own Nonverbal Behavior

Regarding the relationship between an individual's rating of partner's attractiveness or likeability and their own nonverbal behavior, Pearson correlations were also calculated. Separate correlations were calculated for each sex; Table 15

Table 12

Correlations of Judge's and Girl's Ratings of Boy's Physical and Personal Characteristics

	Judges' rating of boy	
Girl's rating	Physical attractiveness	Babyfacedness
Social attractiveness	.06	nh[a]
Physical attractiveness	.29+	nh
Likeability	.03	nh
Competence	.24	-.00
Maturity	**.37***	.19

Note. n = 27 to 28.

[a]Not hypothesized.

+ p < .10, one-tailed. * p < .05, one-tailed.

Table 13

Correlations of Self-Reported Pubertal Status with Partner's Ratings

Partner's ratings	Pubertal status	
	Girls	Boys
	(n = 28)	(n = 28-29)
Social attractiveness	-.04	-.10
Physical attractiveness	.30+	-.05
Likeability	.20	-.05
Competence	-.26+	-.10
Maturity	-.22	.14

+ p < .10, one-tailed.

Table 14

Correlations Between Perceptions of Partner's Masculinity/Femininity and Perceptions of Partner's Competence and Maturity

Partner's rating	Girl's femininity (n = 29)	Boy's masculinity (n = 29-30)
Competence	.18	.30+
Maturity	.49[a]	**.51****

[a]Correlation significant, opposite to hypothesized direction.

+ p < .10, one-tailed. ** p < .01, one-tailed.

reports the girls' and Table 16 reports the boys' correlations.

Girls rating their male partners as more likeable also appeared smaller (frequency: $\underline{r}$ = .36; duration: $\underline{r}$ = .30). Six correlations show significant associations, but opposite to the direction hypothesized: the less socially and physically attractive a girl rated her partner, the more she lifted her eyebrows ($\underline{r}$ = -.40, $\underline{r}$ = -.31, respectively) or smiled while lifting her eyebrows ($\underline{r}$ = -.42, $\underline{r}$ = -.41, respectively). The more physically attractive or likeable a girl found her partner, the less she smiled coyly at him ($\underline{r}$ = -.44, $\underline{r}$ = -.39, respectively). For boys, only one correlation was significant, and it was also in the opposite direction than hypothesized: the more physically attractive a boy rated his partner, the less he did backward leans ($\underline{r}$ = -.31).

Sex Role Attitudes, Partners' Nonverbal Behavior and Partners' Perceptions

Sex role attitudes were expected to modify the relationship between an individual's nonverbal behavior and partner's ratings of personal characteristics. Stronger relationships were expected between a target's nonverbal behavior and his or her partner's ratings of the target's personal characteristics when the partner's sex role attitudes were more traditional. For example, a boy with more traditional attitudes would be more likely to rate a girl engaging in hair tosses and coy smiles as socially attractive, yet less competent. To examine these hypotheses, first a median-split procedure was used on the scores for sex role attitudes (within sex). High (less traditional attitudes) and low (more traditional attitudes) groups were therefore obtained. The correlations between one's nonverbal behavior and partner's ratings of personal characteristics were compared for the two (high and low) groups, separately

Table 15

Correlations Between Girl's Perceptions of Boy and Her Own Nonverbal Behavior

Girl's nonverbal behavior	Girl's perception of boy		
	Social attractive	Physical attractive	Likeability
Hair strokes[a]	.01	-.28	-.25
Head toss[a]	-.28	-.11	.04
Coy smiles[a]	-.24	-.44[c]	-.39[c]
Appearing smaller[a]	.19	.22	**.36***
Appearing smaller[b]	.18	.29+	**.30***
Eyebrow lifts[a]	-.40[c]	-.31[c]	-.01
Eyebrow lift/smiles[a]	-.42[c]	-.41[c]	-.07
Face rests[b]	.03	.06	-.25

Note. $n = 30$.

[a]Frequency. [b]Duration in seconds. [c]Correlation significant, opposite to hypothesized direction.

+ $p < .10$, one-tailed. * $p < .05$, one-tailed.

Table 16

Correlations Between Boy's Perceptions of Girl and His Own Nonverbal Behavior

Boy's nonverbal behavior	Boy's perception of girl		
	Social attractiveness	Physical attractiveness	Likeability
Backward lean	-.02	-.31[a]	.26+
Chin touch	-.06	-.06	-.11

Note. n = 29. Values are based on duration in seconds. [a]Correlation significant, opposite to hypothesized direction.

+ $p < .10$, one-tailed.

by sex. Tables 17 and 18 present these results for boy's ratings of girl's nonverbal behavior. To support the hypotheses, there should be a difference in the direction and/or strength of the correlations between the girl's nonverbal behavior and the boy's ratings of her personal characteristics. In other words, for the group of boys with more traditional sex role attitudes (i.e., scores lower than the median), the pattern of correlations should be positive between the girl's nonverbal behaviors and the boy's ratings of her social attractiveness, physical attractiveness, likeability, and femininity. The pattern of correlations between the girl's nonverbal behavior and the boy's ratings of her competence and maturity were expected to be negative. For the group of boys with less traditional sex role attitudes (i.e., scores higher than the median), there should be no correlation or a reverse pattern. Out of 48 pairs of correlations (shown in Tables 17 and 18), only five show such a pattern: coy smiles with femininity, face rests with physical attractiveness, appearing smaller (frequency) with social and physical attractiveness, and eyebrow lifts accompanied by smiling with likeability.

The same comparison was made for girls. The results are reported in Table 19. To support this set of hypotheses, for the group of girls with more traditional sex role attitudes (i.e., scores lower than the median), the pattern of correlations should be positive between the boy's nonverbal behaviors and the girl's ratings of his social attractiveness, physical attractiveness, likeability, competence maturity and masculinity. Four out of twelve pairs of correlations fit this pattern: backward leans with physical attractiveness, maturity and masculinity; and chin touches with likeability.

Table 17

Correlations Between Girl's Gender-Congruent (Feminine) Nonverbal Behavior and Boy's Ratings of Her, Split by Boy's Sex Role Attitudes

	Girl's nonverbal behavior							
Boy's	Hair stroke[a]		Head toss[a]		Coy smile[a]		Face rest[b]	
rating	Hi	Low[c]	Hi	Low	Hi	Low	Hi	Low
Social attractiveness	-.10	-.02	.22	.06	**.52***	-.15	-.31	.23
Physical attractiveness	-.39+	.39+	.12	.19	.42+	.39+	.04	**.48***
Likeability	-.15	.06	.22	-.23	.20	.29	-.36+	.33
Femininity	.14	.05	**.47***	.27	-.25	**.54***	-.09	.10
Competence	-.24	-.06	.39+	-.32	-.13	.17	.10	.09
Maturity	-.32	.09	.28	-.32	**-.79****	.26	.17	.40+

Note. n = 15 (Lo) and 14 (High).

[a]Frequency. [b]Duration in seconds. [c]Hi = higher than median score on boy's sex role attitudes (less traditional), Low = lower than median score on boy's sex role attitudes (more traditional).

+ $p < .10$, one-tailed. * $p < .05$, one-tailed.

Table 18

Correlations Between Girl's Gender-Congruent (Feminine) Nonverbal Behavior and Boy's Ratings of Her, Split by Boy's Sex Role Attitudes

	Girl's nonverbal behavior							
	Appearing smaller				Eyebrow lifts [a]			
Boy's	F[a]		D[b]		w/smile			
rating	Hi	Low	Hi	Low	Hi	Low	Hi	Low
Social Attractiveness	.22	**.45***	.17	.13	.30	-.01	.15	.22
Physical Attractiveness	.34	**.59***	.33	.41+	.08	-.28	-.21	.28
Likeability	.24	.15	.25	.09	**.54***	.02	.09	**.52***
Femininity	.16	.41+	.22	.37+	.35	-.36	-.28	.43+
Competence	.02	.10	-.02	.02	**.45***	.03	-.15	.44+
Maturity	.12	.26	.20	.05	.34	-.05	-.23	.40+

Note. n = 15 (Lo) and 14 (High).

[a]Frequency. [b]Duration in seconds. [c]Hi = higher than median score on boy's sex role attitudes (less traditional), Low = lower than median score on boy's sex role attitudes (more traditional).

+ $p < .10$, one-tailed. * $p < .05$, one-tailed.

Table 19

Correlations Between Boy's Gender-Congruent (Masculine) Nonverbal Behavior and Girl's Ratings of Him, Split by Girl's Sex Role Attitudes

	Boy's nonverbal behavior			
	Backward lean		Chin touch	
Girl's rating	Hi	Low[a]	Hi	Low
Social attractiveness	.16	.17	.13	-.25
Physical attractiveness	.12	**.57***	.24	.10
Likeability	.02	.28	-.03	**.46***
Competence	-.06	-.07	-.02	.07
Maturity	.26	**.45***	.10	.05
Masculinity	-.40	**.47***	-.31	-.27

Note. n = 15 (Hi) or 14 (Low). All values are based on duration in seconds.

[a]Hi = higher than median score on girl's sex role attitudes (less traditional), Low = lower than median score on girl's sex role attitudes (more traditional).

Chapter V

Discussion

The results of this study lead to some tentative conclusions about the communicative meaning of the selected nonverbal behaviors and their relationship to sex roles. The intention of this study was, first, to attempt to determine the meaning of these nonverbal behaviors in adolescent mixed-sex encounters. The behaviors were hypothesized to have communicative functions signaling interest or affiliation. It was proposed that the behaviors would directly communicate affiliation or that they would relate indirectly to self-presentational goals. It was also proposed that the behaviors would be linked to sex roles, either directly, by manifesting sex differences, or indirectly, by evincing a consistent pattern of gender-linked perceptions.

With respect to the first proposal, because there were few significant correlations between individuals' ratings of their partners' attractiveness or likeability and their own nonverbal behavior, there is minimal evidence to suggest that these behaviors directly communicate attraction to or interest in another individual. Only girls' appearing smaller was related to girls' rating their partner as more likeable. This specific finding is consistent with prior research on courtship and flirting behaviors (cf. McCormick & Jones, 1989) and theoretical literature (Hass, 1970). Girls may be pulling themselves into smaller postures in attempts to appear harmless. Such exaggerated cues of submissiveness are consistent with Givens' (1978) depictions of expressive behavior in the initial stages of sexual relations.

However, there is more evidence to indicate that the other behaviors are not

directly related to adolescents signaling interest or affiliation, given the higher number of correlations that were significant in the opposite direction. That is, the nonverbal behaviors were more frequently seen when the individual displaying them indicated a lack of attraction to their partner. For example, girls rating their partners as less socially or physically attractive engaged in more eyebrow lifts (both alone and with smiles) and coy smiling. These findings, however, are not consistent with other reports (e.g., Grammar, 1990; Moore, 1985, 1995).

Another contraindicated finding is that boys who reported finding their partners more physically attractive did less backward leaning. Although the hypothesized relationship (e.g., boys finding their partners attractive would do more backward leaning) was based on the assumption that the boys would try to maintain equilibrium, perhaps the boys were motivated to maintain closer proximity.

These results, taken together, indicate that there is insufficient evidence to argue that these behaviors perform the same communicative functions that they appear to serve in adult courtship contexts. A stronger test of the hypothesized flirting function of these behaviors would probably require more covert observation of adolescents "in situ", much like Moore's (1995) study. It is possible that the quasi-experimental paradigm of this study may have constrained the adolescents' nonverbal behavior. The adolescents may have felt "on display," knowing that they were being videotaped, and may have not felt as free to overtly express an interest in their partners. More naturalistic settings, where adolescents are meeting and actively looking for potential partners may be more suitable for studying flirting behaviors.

As seen with Moore's study, however, these naturalistic settings are not as amenable to asking the participants, directly, about their impression of those potential partners are. To demonstrate consequential validity, she noted which females were approached more often by males and differentiated the behavior of these individuals from those females that were not approached or approached less frequently. This required inferring that the females who were approached and the males doing the approaching were attracted to each other. Rather than inferring attraction from the individuals' behavior, getting self-reports of their mutual interest or attraction would provide stronger evidence that their nonverbal behavior was actually flirting or courtship.

Another issue that may have contributed to the lack of more consistent results is measurement error. In this case, the measures of social and physical attractiveness, and likeability may not be refined enough to assess the hypothesized relationships. Close examination of the items for these scales reveals that the adolescents may have tended to rate each other more positively, in general, inflating their responses with a social desirability bias. This inflation would likely make it more difficult to distinguish between real attraction and a social response set. Moreover, the resulting restriction of range would affect the strength of the correlation, resulting in fewer significant relationships.

The meaning of the selected nonverbal behaviors may therefore be more strongly related to presentational goals than serving to signal attraction, in that the individual using the nonverbal expressions may be systematically perceived as

"likeable" or "attractive" by others. Instead of communicating directly a message equivalent to "I like you," it could be that these behaviors are meant to communicate something like "I am likeable." Moreover, the behaviors appear to be sex-typed, in one of two ways. For some of the behaviors (i.e., hair strokes, coy smiles, and chin touches), sex differences in their manifestation are evident. For others (e.g., head tosses, appearing smaller), the behavior is associated with perceptions of masculinity or femininity. Some behaviors also appear to have differential patterns of perception, depending on the sex role attitude of the perceiver (e.g., coy smiles and appearing smaller for girls, and backward leans for boys).

The t-test results indicate that there are sex differences in some behaviors: girls stroke their hair, engage in more coy smiling, and smiling while lifting their eyebrows than do boys; boys touch their chins more than do girls. These results are consistent with research on sex differences in adult behavior (Grammar, 1990; McCormick & Jones, 1989), and nearly replicated the findings of Kolaric and Galambos (1995). The behaviors of hair stroking, coy smiling, and appearing smaller in this study and the Kolaric and Galambos study are, in essence, the same. Whereas Kolaric and Galambos coded only for hair flips, both hair flips and hair strokes were coded in this study, because both are hand-to-body automanipulations that involve touching the hair. Coy looks (from the Kolaric and Galambos study) and coy smiles (from this study) both involve downward (coy) gaze patterns. And although this study did not replicate the sex differences found in appearing smaller (which was coded in both studies), t-test results indicate a trend approaching significance, in which girls engaged in more

appearing smaller than did boys.

Additionally, this may be the first time that a sex difference in eyebrow lifts while smiling has been empirically documented. To this author's knowledge, other accounts have not directly tested this difference nor noted that the smile appears to be an important accompanying component. For this set of data, when all eyebrow lifts were coded, no sex differences are evident. When eyebrow lifts accompanied by smiling were coded, the sex difference then emerged. Ethological research indicates that eyebrow lifts alone connote surprise; whereas with the added component of the smile, the eyebrow lift connotes a "pleasant surprise." This eyebrow lift with smile has been described by ethnographers, who have categorized the expression as flirting behavior (Hass, 1970) and as a greeting "with the eyes" (Hass, 1970; Eibl-Eibesfeldt, 1971).

The adolescents' perceptions of each others' behavior appears to be sex-typed. Three behaviors show direct links: when engaged in by girls, hair tosses are considered more feminine, chin touches are considered more masculine; when engaged in by boys, appearing smaller is considered less masculine.

More indirect links are evident when the socially desirable characteristics are examined (e.g., likeability, competence, maturity). Adolescents engaging in behaviors hypothesized as congruent with their gender (i.e., girls engaging in "feminine" behavior and boys engaging in "masculine" behavior) are perceived more positively. For example, girls that do more coy smiling and appearing smaller are considered by their partners to be more socially and physically attractive. Boys engaging in the

"masculine" behavior of chin touching are considered more likeable.

When the nonverbal behavior is not consistent with their gender, however, (i.e., girls engaging in "masculine" behavior or boys engaging in "feminine" behavior) the valence of the perceptions shifts. For example, among the girls in this study, engaging in masculine nonverbal behaviors (i.e., backward leans and chin touches) was unrelated to the boys' perceptions of their competence or maturity. The only significant relationship found was that girls' chin touching was positively associated with boys' rating them as masculine.

Boys engaging in gender-incongruent behavior, however, are perceived more adversely. For example, girls rate their partners as less likeable when the boys do more hair stroking. And boys tossing their head more often are considered by their partners to be less physically attractive. Only one correlation showed an opposite pattern: boys engaging in higher frequencies of appearing smaller was associated with their partners' rating them as more likeable.

The more negative perceptions of boys engaging in gender-incongruent behavior are consistent with previous literature demonstrating stronger sex-typing among boys than girls (Frey & Ruble, 1992). The lack of similarly punitive perceptions of girls engaging in "masculine" behavior is consistent with the strong societal bias toward the masculine sex role (Kohlberg, 1966; Ruble & Ruble, 1982).

This social bias towards masculine behavior works dialectically for the boys. It appears that when the boys' nonverbal behavior is congruent with their sex role, the behavior is largely ignored and other factors potentially influence the girls' perceptions

(e.g., girls found their partners to be mature if they were physically attractive or if the girls perceived their partners to be masculine). However, when the behavior is incongruent, that is, the boys engage in "feminine" behavior, the nonverbal behavior plays a greater role in the impression process.

Why does a like process not occur with girls? Because our society places more value and prestige on the masculine sex role, girls are not necessarily penalized for behaving in masculine ways. Nor is as much pressure put on girls to behave in ways congruent with their gender (Thorne, 1994). Girls are not as likely as boys to be punished for transgressing gender boundaries. In fact, behaving like a "tom-boy" may in some ways be rewarded (Thorne, 1994). It may also be that the pressure for conformity to behavior congruent with sex roles is not only greater for boys, but that the process begins much earlier. Thus, while there might be indications of conformity in boys, this same process may not be as evident in girls of this age.

More evidence that these nonverbal behaviors may be related to sex roles emerges when their relationship to the perceiver's sex role attitude is scrutinized. And again, expectations for boys' behavior appears to be more stringent. Girls with more traditional attitudes rated their partners more positively when they engaged in the "masculine" behaviors. These girls rated their partners as more attractive, mature and masculine when they engaged in more backward leaning, and more likeable when they engaged in chin touching. The girls with more nontraditional sex role attitudes appeared to disregard these behaviors.

For boys, however, the results are more mixed. The boys' perceptions of their

partners' nonverbal behavior were inconsistently related to their sex role attitudes. Only a few pairs of correlations had the hypothesized pattern. Boys with more traditional attitudes rated their partners as more attractive when the girls engaged in more face rests and appearing smaller and as expected, no such relationship was found for the boys with more nontraditional attitudes.

There were also several pairs that had a pattern opposite to that hypothesized. Boys with more nontraditional attitudes rated their partners as more socially attractive and less mature when they engaged in coy smiles and more feminine when the girls engaged in more head tosses. The nontraditional boys also rated their partners as more likeable when the girls engaged in more eyebrow lifts with smiles. These patterns were unexpected and cannot be explained.

The dialectical perceptions of the girls is consistent with gender schema theory, which proposes that individuals with stronger sex-typing (i.e., someone who has incorporated gender stereotype into their identity and cognitive processing) would be more apt to notice gender-related behavior and to use this information in their attributional and evaluative processes. Gender-aschematic individuals (i.e., those people that are not strongly sex-typed or those that are nontraditionally oriented) would be more likely to ignore gender-related information and focus on other aspects to evaluate individuals (Spence, 1993).

The patterns of perceptions are not as straightforward for the boys' perceptions of the girls' nonverbal behavior. Perhaps the patterns are more consistent for boys' behavior because of the stronger expectations for boys to behave in gender-congruent

ways. These girls may be holding their male partners to more stringent modes of behavior and be less tolerant than their male counterparts of gender boundary transgressions. This difference in evaluating gender behavior would also be consistent with theory and research demonstrating such a bias (Thorne, 1994).

These patterns of gender-typed perceptions of the nonverbal behaviors may provide a clue for future investigations into multidimensional aspects of sex roles. Consistent with a multifactorial theory of sex roles (Spence, 1993), a sex difference in the manifestation of a behavior is insufficient by itself to provide a complete picture of the manifestations of sex roles. Looking for differential patterns in the perceptions of the behaviors and sex-typed attitudes is also necessary.

An interesting extension of this research would be to study these behaviors and perceptions across adolescence, looking for changes in the strength of adherence to sex-typed behaviors, beliefs and attitudes. Other research indicates that adherence to sex roles may follow a curvilinear trajectory across adolescence, with rigidity increasing in early adolescence, followed by increasing flexibility. For instance, evaluation of the gender-related behavior of others (Emmerich & Shepard, 1982) and adherence to gender stereotyped beliefs (Alfieri, Ruble, & Higgins, 1996) follow such a path.

Although changes in adherence to gender stereotypic beliefs and attitudes toward the behavior of others does not necessarily mean an increase in one's own conformity to behavioral prescriptions, similar increases in behavioral conformity might also be seen. More research is needed to clarify both changes across

adolescence within the multiple dimensions of sex roles and changes in the relationships between these dimensions.

Other expected relationships, that is, the "halo" effect expected for physical attractiveness and the "innocence" effect expected for babyfacedness did not emerge from the results. It was expected that more physically attractive individuals would be rated more positively in terms of characteristics such as attractiveness, likeability, and maturity. Individuals with more babyfaced features were expected to be perceived as less mature and competent. Physical attractiveness as rated by a judge was only related to the partner's rating of physical attractiveness. The other relationships were not found. This is not consistent with research demonstrating such effects persisting across the life span. It is not known why these relationships were not replicated.

It was also expected that adolescents who were more physically mature would be rated more attractive, likeable, competent and mature. No such relationships were found. This is probably due, in part, to the restricted range of the pubertal status variable. Using a sample with more variability in pubertal status (e.g., younger sample, or cross-sectional sample) would more likely reveal any existing associations.

Some of the other limitations of this study concern sampling issues. Because the sample was made up almost entirely of Caucasian adolescents, with the exception of two boys and two girls of Asian descent and one girl of part African descent, generalizability may be problematic. Although some of these behaviors (e.g., eyebrow lifts and coy smiles) are seen in a variety of cultures (Eibl-Eibesfeldt, 1971), their relation to sex roles will undoubtedly be culture-specific.

The sample was also relatively small. Information was collected from only 30 dyads, which limited the power of the analyses. This limitation could have affected the number of significant results found.

Additionally, a self-selection bias may be involved, due to the difficulty in recruiting participants. This sample most likely is made up primarily of those adolescents who are more outgoing and more confident in their social interactions. This may have worked in favor of the researcher though, in that other adolescents may have been more reticent and inhibited in their nonverbal interactions.

With these issues in mind, future research should concentrate as much on methodological issues as substantive issues. A larger, more diverse sample may yield more results -- increasing the number of analyzed dyads may increase the ability to find significant relationships, and a more diverse sample (e.g., more variability in pubertal development) would be needed before specific relationships could be demonstrated.

Another pertinent issue that might have impacted this study is the coding of nonverbal behaviors. Empirically defining nonverbal behaviors, such that coding is clear, is often made more difficult because of the ambiguity of the descriptions found in research. Beyond being able to accurately describe what the behavior looks like, when it is displayed and for how long it is displayed, researchers need to be able to define what a behavior is not.

Using the "eyebrow lift" to exemplify this problem, a coding scheme would have to specify how long the eyebrows are lifted, possibly how often lifting occurs,

when brow lifting occurs in concert with smiling, are these combinations concurrent or simultaneous (e.g., Does the individual smile, then lift? Or does the smiling and lifting occur at the same time?). Although several previous researchers have attempted to empirically define eyebrow lifts (e.g., Moore, 1985), a lack of agreement on the specifics of this expression's display leave questions as to how best to operationalize it. For example, some researchers described this behavior as a "lift," whereas others described it as a "flash." Duration of the lift has been described as "brief" by Hass (1970) and Eibl-Eibesfeldt (1971), and operationalized as less than 2 seconds by Moore (1985). Moore specifies an "exaggerated" lifting of the eyebrow, followed by a rapid lowering back to normal level and Hass states that the behavior is often repeated rapidly. Both Hass and Moore note that the behavior is often seen accompanied by a smile, and this study indicates that when combined with a smile, the lifting of the eyebrows takes on a meaning that is not suggested by eyebrow lifting alone. As this illustrates, more information about the specifics of a behavioral display would allow more refined codification of nonverbal behaviors and their combinations. Such refinements would be very useful to future research.

Although this study was exploratory in nature, it represents one of the first attempts to determine if the nonverbal behavior seen in adult courtship contexts generalize to similar situations in adolescence. This goal was left largely unmet, as there is insufficient evidence to support such an extension. The second goal, demonstrating that these nonverbal expressions are the behavioral enactment of adolescents' adherence to sex roles, was tentatively reached. Because this study was

exploratory, however, it would be premature to label the nonverbal behaviors as "feminine" and "masculine," or to conclude that they are all sex-typed behaviors. This exploration indicates that more research would help clarify the behavioral manifestations of sex roles during a particularly interesting period of the life span.

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Appendix A

Recruiting Flyer

WE NEED YOU!

ARE YOU GOING INTO THE 9TH GRADE?

IF SO, YOU'RE ELIGIBLE TO PARTICIPATE IN

THE YOUTH INTERACTION PROJECT

(YIP)!

WHAT IS YIP?

THE **YOUTH INTERACTION PROJECT (YIP)** IS A STUDY OF ADOLESCENT COMMUNICATION STYLES.

WHAT WOULD I BE DOING?

YOU WILL MEET ANOTHER ADOLESCENT YOUR AGE AND TALK TO EACH OTHER FOR A FEW MINUTES WHILE BEING VIDEOTAPED. THEN YOU'LL HAVE YOUR PHOTOGRAPH TAKEN AND FILL OUT A SHORT QUESTIONNAIRE.

WHAT THEN?

YOU GET PAID $10 FOR HELPING US COLLECT THIS INFORMATION.

HOW DO I GET TO PARTICIPATE?

TAKE THE ATTACHED LETTER HOME TO YOUR PARENTS. THEN, WITH THEIR PERMISSION, CALL US AT 472-4110, LEAVE THE INFORMATION REQUESTED ON THE TELEPHONE CARD, AND WE'LL MAKE THE ARRANGEMENTS!

Appendix B

Recruiting Letter

THE YOUTH INTERACTION PROJECT

(YIP)

Hi!

My name is Lauree Tilton-Weaver and I am a graduate student at the University of Victoria. I am currently working on my Master's Thesis, under the supervision of Dr. Nancy Galambos and would like to invite you to participate in my study.

My study focuses on how young people get to know each other through conversation and by how they present themselves. Because people convey information about themselves by what they say **and** by what they do, I want to videotape adolescents talking to each other. If you decide to participate, you would come to the university and talk to another adolescent your age for about 5 minutes. This discussion will take place in a family-style room (room A169 in the Cornett building) and will be videotaped. I want to reassure you that this experience is meant to be fun for you, and that you shouldn't be nervous about being videotaped. You will then have your photograph taken, so that your physical appearance and youthfulness can be judged. Then you will fill out a brief questionnaire that asks about your attitudes toward your partner, yourself and other people in general. The questionnaire also has questions about your physical maturity. The whole procedure should only take about 30 minutes to complete, and you will get paid $10 for participating. If you could not get a ride to the university, we would be happy to reimburse you for your bus fare.

If you would like to participate, please sign the enclosed consent form and also have one of your parents sign it. You will need to bring this form with you, when you come to the University for your appointment. Also enclosed is a telephone card. If you will use this when you call us, we can then use this information to contact you. This way, we can answer your questions and make arrangements for you to participate by pairing you up with another adolescent. I have also enclosed a map of the university with the bus stop and the Cornett building marked off.

If you or your parents have any questions about this research, **please** call me at 472-4110 or leave a message for me to call you at 721-8718. A copy of the questionnaire will be made available at our office, in case your parents would like to look at it.

Thank you for your support and we look forward to seeing you.

Yours truly,

Lauree C. Tilton-Weaver — Nancy L. Galambos, Ph.D.

M.A. Candidate — Associate Professor

Appendix C

Parental Consent Form

(University of Victoria Letterhead)

This research project, conducted by Lauree C. Tilton-Weaver under the supervision of Dr. Nancy Galambos, has been approved by your camp director/principal. This project focuses on how young people get to know each other through conversation and through the ways in which they present themselves. Because people communicate through what they say, as well as what they do, we want to videotape adolescents talking to each other. Physical appearance, maturity and youthfulness also changes how we view other people, so we want to take photographs as well.

Participation in this study involves your adolescent talking to another adolescent their age for 5 minutes while being videotaped, having their photograph taken, and filling out a brief questionnaire. After they have finished the questionnaire, we will show them a portion of their videotape and provide them with more information about this study.

Your adolescent's participation in this study is completely voluntary. As their parent, you can withdraw consent at any time. Also, your adolescent can stop participating at any time and request that his/her information be withdrawn and destroyed. Any information collected in this project will stay confidential and special precautions are being taken to ensure your adolescent's privacy, as well as yours.

The videotapes/photographs and questionnaires will be stored in separate,

locked cabinets. Consent forms will also be kept separated from these items. This means that your adolescent's responses to the questionnaire will not be connected to their name or face in any way. Under no circumstances will names be attached to any reports about this study. Whether or not your adolescent participates will have no bearing on their standing at camp or their grades at school.

Your adolescent will be given an opportunity, after viewing his/her tape, to decide if and how we can use it. The same opportunity will be given to them regarding their photographs.

Please note that we are interested in adolescents in general. Therefore, we will not be releasing any individual's responses or ratings. A summarized report of the findings from this project will be made available, through this office, upon the request of any participant or their parent.

By filling out this form and signing your name below you are giving your permission for your adolescent to participate in this research project and letting us know that you understand all of the above information.

Thank you for participating in the **Youth Interaction Project** and helping us to learn more about young people!

Date:_____

Adolescent's Name:_____

Signature:_____ (parent)

Signature:_____ (adolescent)

Appendix D

Adolescent Consent Form

(University of Victoria letterhead)

This research project, conducted by Lauree C. Tilton-Weaver under the supervision of Dr. Nancy Galambos, has been approved by your camp director/principal. This project focuses on how young people get to know each other through conversation and through the ways in which they present themselves. Because people communicate through what they say, as well as what they do, we want to videotape adolescents talking to each other. Physical appearance, maturity and youthfulness also changes how we view other people, so we want to take photographs as well.

Participation in this study involves you talking to another adolescent your age for 5 minutes while being videotaped, having your photograph taken, and filling out a brief questionnaire. After you have finished the questionnaire, we will show you a portion of your videotape and provide you with more information about this study.

Your participation in this study is completely voluntary. You can decide that you don't want to participate at any time and ask us to stop and/or ask us to destroy your information. Any information collected in this project will stay confidential and special precautions are being taken to ensure your privacy.

The videotapes/photographs and questionnaires will be stored in separate, locked cabinets. Consent forms will also be kept separated from these items. This means that your responses to the questionnaire will not be connected to your name or

face in any way. Under no circumstances will names be attached to any reports about this study. Whether or not you participate will have no bearing on your standing at camp or your grades at school.

You will be given an opportunity, after viewing your tape to decide if and how we can use it. The same opportunity will be given to you regarding your photographs.

Please note that we are interested in adolescents in general. Therefore, we will not be releasing any individual's responses or ratings. A summarized report of the findings from this project will be made available, through this office, upon your (or your parent's) request.

By filling out this form and signing your name below you are saying that you are willing to participate in this research project and letting us know that you understand all of the above information.

Thank you for participating in the **Youth Interaction Project** and helping us to learn more about young people!

Date:_____

Name:_____

Signature:_____

Appendix E

Discussion Scenario

Following are the instructions and questions (adapted from Stock, 1987) that were provided to the adolescents, in order to generate conversation.

"Your task is to try to understand where your partner wants to go and why. Here's the scenario:

You have an unlimited amount of time and money.

You can go any place that you chose.

This place can be very close or very far away or imaginary.

You can take anyone or anything you like with you.

Here are some questions to get you started:

Where would you go? Why do you want to go there?

What is special/different about this place?

Who would you take with you?

What would you take with you?

How would you get there?

Where would you stay?

How long would you stay there?

What kinds of things would you do once you got there?

What kinds of things would you **not** do there?

Would you take anything back with you?"

Appendix F

Video/Photo Release Form

THE YOUTH INTERACTION PROJECT

Please indicate below the way(s) in which we may use the videotape and/or the photograph made during this research project. You may select some and not others -- or none at all. Your researcher will explain in detail what each might consist of.

Your tape and photo will each be identified only by a code number. The sheet that connects your name with these numbers will be kept separate, in a secure place. Obviously, however, videotapes and photographs are not anonymous to anyone who knows you.

PHOTO	**VIDEO**	WAYS IN WHICH PHOTO/VIDEO MAY BE USED
_____	_____	analysis of physical appearance, youthfulness, verbal and nonverbal behaviour by the research team
_____	_____	viewing by other subjects who rate various verbal and nonverbal aspects
_____	_____	playing the tape/showing the photo as an example for professional audiences (e.g., at a lecture at another university)
_____	_____	playing the tape/showing the photo as an example for classes at UVic
_____	_____	still photographs in journal articles or books
_____	_____	none of the above, please erase the tape/photo

SIGNATURE: _____

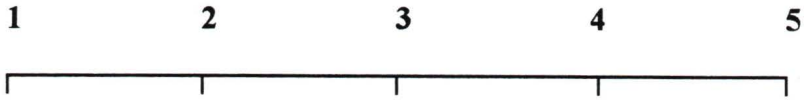
DATE: _____

Appendix G

Interpersonal Evaluation Inventory

(Kelly, Kern, Kirkley, Patterson, & Keane, 1980)

Using the 5-point scale below, indicate how well each adjective describes **your partner** as you perceive **him/her**.



EXTREMELY UNTRUE — NEITHER TRUE OR UNTRUE — EXTREMELY TRUE

I THINK THE ADOLESCENT I JUST MET WAS:

agreeable	
assertive	
athletic	
considerate	
flexible	
friendly	
good-natured	
inoffensive (harmless)	

kind	
likeable	
open-minded	
pleasant	
sympathetic	
thoughtful	
warm	

Appendix H

Interpersonal Attraction Measure

(McCroskey & McCain, 1974)

Think about the **adolescent you just met**. Using the following options, respond to the statements regarding **him/her**.

Scale: **1 = extremely untrue**

3 = neither true or untrue

5 = extremely true

1. I think he/she could be a friend of mine
2. It would be awkward to meet and talk to him/her.
3. He/She just wouldn't fit into my circle of friends
4. We could never establish a personal friendship with each other.
5. I would like to have a friendly chat with him/her.
6. I think he/she is quite cute.
7. I find him/her very physically attractive.
8. I don't like the way he/she looks.
9. He/She is somewhat unattractive.
10. He/She is not very good-looking.
11. He/She wears cool clothing.
12. The clothes he/she wears look good on him/her.

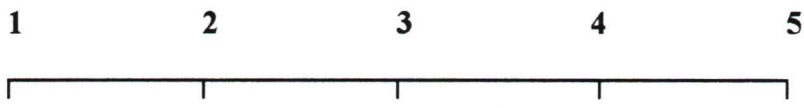
Items 1 through 5 are used for "social attractiveness";

Items 6 through 12 are used for "physical attractiveness".

Appendix I

Competence, Maturity, Masculinity, and Femininity

Using the 5-point scale below, indicate how well each adjective describes **your partner** as you perceive **him/her**.



EXTREMELY UNTRUE — NEITHER TRUE OR UNTRUE — EXTREMELY TRUE

I THINK THE ADOLESCENT I JUST MET WAS:

1. capable
2. competent
3. dependable
4. responsible
5. smart
6. successful
7. mature
8. feminine
9. masculine

Note: The mean of items 1 through 6 created the competence measure. Item 7 was used for maturity; item 8 for femininity; and item 9 for masculinity.

Appendix J

Attitudes Toward Women Scale for Adolescents

(Galambos, Peterson, Richards, & Gitelson, 1985)

Please indicate the extent to which **you** agree with the following statements by circling the number corresponding to the correct answer.

Scale:	Disagree Strongly	Disagree	Agree	Agree Strongly
	1	2	3	4

1. Swearing is worse for a girl than for a boy.
2. On a date, the boy should be expected to pay for all expenses.
3. On the average, girls are as smart as boys.
4. More encouragement in a family should be given to sons than daughters to go to school.
5. It is all right for a girl to want to play rough sports like football.
6. In general, the father should have greater authority than the mother in making family decisions.
7. It is all right for a girl to ask a boy out on a date.
8. It is more important for boys than girls to do well in school.
9. If both the husband and wife have jobs, the husband should do a share of the housework such as washing dishes and doing the laundry.
10. Boys are better leaders than girls.
11. Girls should be more concerned with becoming good wives and mothers than

desiring a professional or business career.

12. Girls should have the same freedoms as boys.

Appendix K

Pubertal Development Scale

(Peterson, Crockett, Richards, & Boxer, 1988)

1) Do you have body hair (underarm and pubic hair) yet?

(circle the appropriate number)

1. No
2. Yes, a little
3. Yes, some
4. Yes, a lot
5. I don't know

2) Has your skin started to change yet (e.g., pimples)?

(circle the appropriate number)

1. No
2. Yes, a little
3. Yes, some
4. Yes, a lot
5. I don't know

3) Have your breasts started to develop (grow) yet? (circle the appropriate number)

1. No
2. Yes, a little
3. Yes, some
4. Yes, a lot
5. I don't know

4) Have you begun to menstruate (have your period)? (circle the appropriate number)

1. No
2. Yes

5) If yes, how old were you when you first began to menstruate?

___years ___months

6) Has your voice started changing (getting deeper) yet?

(circle the appropriate number)

1. No
2. Yes, a little
3. Yes, some
4. Yes, a lot
5. I don't know

7) Do you have facial hair (on chin, above lip) yet?

(circle the appropriate number)

1. No
2. Yes, a little
3. Yes, some
4. Yes, a lot
5. I don't know

Note: Questions 3, 4, and 5 are for girls only.

Questions 6 and 7 are for boys only.

VITA

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Regents' Scholar	1992-1993
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Presentations:

Tilton-Weaver, L. C., & Galambos, N. L. (April, 1997). "Getting to know you": Adolescents' perceptions of nonverbal behavior in unacquainted girl-boy pairs. Poster presented at the Biennial meeting of the Society for Research on Child Development, Washington, DC.

Tilton-Weaver, L. C., & Galambos, N. L. (August, 1996). Why can't I? Adolescents' autonomy expectations and psychosocial maturity. Poster presented at the Biennial meeting of the International Society for the Study of Behavioural Development, Quebec City, QC.

Galambos, N. L., & Tilton-Weaver, L. C. (March, 1996). The adultoid adolescent: Too much, too soon. Paper presented at the biennial meeting of the Society for Research on Adolescence, Boston, MA.

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Title of Thesis:

Adolescent Perceptions of Nonverbal Displays in Mixed-Sex Encounters

Author [redacted]

Lauree Coleen Tilton-Weaver

March 26, 1997