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RESOLUTION OF INCONSISTENT MESSAGES,
ROLE-TAKING ABILITY, AND DISTRACTIBILITY
IN NORMAL AND DELINQUENT ADOLESCENTS

by

Frank Lani

A Dissertation Submitted to the Faculty of the Graduate School
of Loyola University of Chicago in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Philosophy

April

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VITA

Frank Lani, the son of Frank B. Lani and Frances (Grimaldi) Lani, was born in New York City on December 27, 1949.

The author graduated from Fordham Preparatory School, Bronx, New York in June, 1967. At Northeastern University, Boston, Massachusetts, he was a student in civil engineering and a laboratory technician from September, 1967 until June, 1969. In June, 1972 he graduated Magna Cum Laude from Tufts University, Medford, Massachusetts with a Bachelor of Science degree in civil engineering and a Bachelor of Arts in psychology.

Since September, 1972 the author has received graduate training in clinical psychology at Loyola University of Chicago. During his first year of training he served as a teaching assistant and subsequently received clerkship training at the West Side Veterans' Administration Hospital, Chicago, Illinois. From August, 1974 until December, 1977 he served a clinical and administrative internship at the Loyola Guidance Center and Day School. He has been employed as a psychologist and treatment team leader in the Adolescent Program at the Illinois State Psychiatric Institute from December, 1977 until the present. In January, 1978 he was awarded the Master of Arts degree in clinical psychology.

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CHAPTER I

INTRODUCTION

Adolescence as a period of life is ushered in by the sudden and dramatic physical changes which accompany puberty. It is a highly significant period in that it presents the adolescent with the developmental task of integrating not only new physical and sexual capacities, but also the concomitant emotional disequilibrium and reorganization of the psychological structures and the self-image. The ease and efficiency with which these tasks are mastered determines whether the process of adolescence results in a successful psychosocial adaptation, earmarked by the formation of a stable sense of ego identity (Erikson, 1968), or whether its end result is some form of psychopathology.

Normal Adolescence

Within the cognitive sphere, adolescence is marked by the acquisition of the ability to manipulate ideas and hypotheses as well as objects and concrete propositions. The development of abstract thinking is central to Piaget's stage of formal operations, which begins by age 11 or 12 and reaches a stable equilibrium by 14 or 15. Parallel to the emergence of the ability of adolescents to conceptualize their own ideas and thoughts, is the ability to conceptualize

the thought of others as well, a development which leads to the dissolution of childhood self-centeredness or egocentrism. However, owing to the efficacy and allure of these new cognitive abilities, adolescents tend to attribute undue significance to their own thinking. They are at times unable to distinguish the ideas and events which are the focus and concern of their own thoughts from those which are of concern to others. Adolescence, therefore, is characterized by a form of cognitive egocentrism, which appears as a result of the conditions created by the development of formal operations (Inhelder & Piaget, 1958). The dissolution of this form of egocentrism, which is the final goal in the transition to adult thinking, is accomplished when adolescents come to differentiate their own preoccupations and ideas from those of others. While this is in part a cognitive process, it is also influenced by affective processes, in that the recognition of the feelings and concerns of others and the ability to differentiate them from one's own are mediated by social interactions and affective experiences (Looft, 1972). As Piaget has emphasized, then, the cognitive and the social-emotional acquisitions of adolescence constitute parallel processes, each exerting causal influence upon the other. Thus, in order to fully understand the role of formal operations in the life of the adolescent, these cognitive capacities must be viewed within the context of the adolescent's social and emotional functioning, and vice versa.

With respect to social and emotional development, the period of adolescence is likewise extremely productive. Adolescents gradually acquire the ability to view both themselves and others from a broader social perspective, they become more interested in thoughts, feelings, motivations, and other aspects of one's subjective or inner experiences, and they are also more accurate and discriminating in their perceptions of these experiences (Shantz, 1975). Simultaneously, adolescents are in the process of integrating themselves into the world of adults. One aspect of this process involves the formation of new peer relationships and the establishment of relationships with a wider range of adults. Another aspect entails a gradual disengagement from earlier involvements with parents, which Blos (1967) has referred to as the "second individuation process" of adolescence. These changes in social perceptions and experiences, like the physical and cognitive developments of adolescence, exert significant influence upon the adolescent's emotional equilibrium and self-image.

Due partly to the fact that adolescence is marked by a reawakening of sexuality and by a reorganization of one's intrapsychic and interpersonal life, it has attracted the interest of a number of psychoanalytic investigators, beginning in 1905 with the last chapter of Freud's "Three Essays on the Theory of Sexuality." A majority of psychoanalysts have viewed adolescence as a time of normative upheaval and tur-

moil. In the view of Anna Freud (1958), one result of the rapid physical, cognitive, and social changes which occur during adolescence is that the adolescent is engaged in an emotional struggle of extreme urgency and immediacy. Due to the massive reorganization of the intrapsychic structures necessary to integrate such changes, she views adolescence as a period of inevitable upset and disturbance, which resembles in appearance, and is difficult to distinguish from, a variety of more permanent and pathological emotional and structural disturbances. Blos (1962) points to the recapitulation of childhood needs and conflicts as responsible for the bizarre and regressive character of adolescent behavior.

In contrast to this view of adolescence as a period of great storm and stress, a more recent view maintains that for the great majority of adolescents this period is undergone with a minimum of inner turmoil and behavioral disequilibrium. This perspective is best represented by Offer (1969), who has demonstrated in extensive investigations of normal adolescents that, while adolescence may be characterized as a period of "normative crisis," it is not necessarily one of regression, upset, and distress.

The Delinquent Adolescent

Among those youngsters who during adolescence experience a level of stress and turmoil which exceeds normative expectations, there exists a large subgroup whose difficulties are expressed via delinquent behavior. The concept of

delinquency is essentially a legal one, referring as it does to behaviors which are prohibited by law. Viewing delinquency from a psychological perspective, therefore, poses some problems in conceptualization, but it serves to enrich and refine the understandings obtained from a purely sociocultural perspective. Since the present paper investigates a variety of affective and interpersonal attributes of normal and delinquent adolescents, delinquency will be conceptualized from a primarily psychological perspective. This perspective does not presume, however, to deny the importance of either sociocultural or biological factors in the etiology of delinquent behavior.

In viewing delinquency from a sociological viewpoint, as many authors have, Clausen (1957) pointed out that many traits ascribed to delinquent youth are pervasive among impoverished American adolescents, e.g., "inability to form deep and lasting attachments, overevaluation of immediate goals, lack of concern with the rights of others, and emotional poverty" (p. 267). Since delinquency is less likely to be "norm violating" in lower-class groups, it is less likely to be indicative of emotional disturbance when it occurs in these groups. However, when middle- or upper-class children become involved in delinquency, according to Kvaraceus and Miller (1959), they are more apt to be emotionally disturbed.

Weiner (1970) considered both psychological and sociological determinants of delinquent behavior. He distinguished

between adaptive and maladaptive delinquency, with adaptive delinquency defined as motivated, goal-directed activity and maladaptive delinquency as frustration-induced behavior which is rigid, stereotypic, and resistant to punishment. Weiner also pointed out a distinction between social vs. solitary delinquents. Social delinquents commit crime in the company of their peers, with the delinquent acts being both endorsed by the peer group and essential to the attainment of status within it. In contrast, solitary delinquents act alone, for idiosyncratic reasons, and their acts are usually unacceptable within their milieu. The solitary delinquent is more likely, therefore, to evidence psychopathology. Weiner regarded adaptive social delinquency as largely characteristic of lower-class youngsters and maladaptive solitary delinquency as largely a phenomenon of the middle- and upper-classes.

There exists some research to indicate that isolated delinquent acts may be quite common during the normal process of adolescent development. Offer, Sabshin, and Marcus (1965) have, for example, reported unusually high rates of undetected delinquency among middle-class suburban youth who had been identified as psychologically "normal." In general, however, there is much support for the view that those adolescents who evidence a fairly stable pattern of repetitive delinquent acts, for which they may be appropriately labelled "juvenile delinquents," do indeed reveal a variety of psycho-

logical deficits. One particularly comprehensive and well controlled study of the antecedents of delinquency was conducted by Conger, Miller, and Walsmith (1965). These investigators found that even during their early school years delinquents revealed clear signs of psychological difficulties. After controlling for sex, social class, intelligence, and ethnicity, the investigators found that from ages 5 to 8 future delinquents showed a greater incidence of unacceptable social behavior, academic difficulty, and emotional disturbance than did their nondelinquent counterparts.

Though psychological factors are clearly involved in the etiology of delinquency, there are few psychological formulations which are descriptive of the entire class of individuals defined as delinquents. Clinical conceptions have generally focused upon the delinquent's underlying characterological problems and defective ego controls, which manifest themselves in low frustration- and anxiety-tolerance, incapacity to regulate affective fluctuations, impaired impulse-control, and transient disturbances in reality perception (Blos, 1963; Eissler, 1949; Friedlander, 1945; Redl & Wineman, 1951). However, since delinquency is essentially a legal, and not a psychological concept, there exists no meaningful one-to-one correspondence between those persons labelled delinquent and any particular clinical entity or syndrome (Trujillo-Gomez & Marohn, 1979). Delinquent behavior is associated with a variety of personality types

and psychological deficits. It must also be acknowledged that the type of delinquents one is likely to encounter is highly dependent upon the milieu in which they are found. For example, hospitalized delinquents, like those of the present study, are likely to have engaged in more solitary, maladaptive, and norm-violating behavior than non-hospitalized delinquents. They are less likely to have been motivated by socioeconomic and cultural concerns, and more by their individual psychopathology.

Many authors have attempted to identify a number of psychologically meaningful subgroups into which the larger group of delinquents may be divided. Glover (1950), for example, distinguished structural delinquents, for whom delinquency represents a symptom of a lasting unconscious conflict, from functional delinquents, whose delinquency represents a pathological discharge of the stress and excitation of adolescence. Aichorn (1965) identified three delinquent subgroups: borderline neurotics with internal psychic conflicts, dissocial youth in conflict with their external environment, and primarily narcissistic youth. Redl (1945), on the other hand, divided delinquents into four subgroups according to whether their delinquency was a function of impulsivity, neurotic conflicts, growth confusion, or defensive behavior within a normal range.

Quay (1972) has also argued against the notion of delinquency as a monolithic form of psychopathology charac-

terized by uniform personality characteristics. Using a factor analytic methodology, he helped lend support to the theoretical and clinical conceptions of authors such as those cited above. Quay's investigations revealed three distinct types of delinquents: a psychopathic type, exhibiting impulsivity, rebelliousness, and lack of emotional involvement; a neurotic type, characterized by tension, guilt and discouragement; and an inadequate type, reflecting failure and general inability or incompetence in life. He further hypothesized that the psychopathic type is associated with parental rejection, the neurotic type with parental overcontrol, and the inadequate type with parental neglect and permissiveness. In a similar investigation, Offer, Marohn, and Ostrov (1979) uncovered four personality types associated with hospitalized, adolescent delinquents. They described an impulsive delinquent, whose antisocial behavior derives from a propensity to discharge affects via action; a narcissistic delinquent, for whom delinquent acts regulate self-esteem and fuel grandiose self-representations; an empty-borderline delinquent, who experiences relief from pessimism, emotional emptiness, and depletion through delinquent acts; and a depressed-borderline delinquent, for whom delinquent acts serve to relieve guilt, depression, and psychic conflicts.

CHAPTER II

REVIEW OF RELATED LITERATURE

It is the aim of the present study to investigate a number of constructs which are related to the social and emotional functioning of both normal and hospitalized delinquent adolescents. The constructs under investigation include: the ability to decode affective cues (affective role-taking), the resolution of inconsistently communicated affects, distractibility and its relationship to the relative salience of verbal and nonverbal affective cues, socialization or role-taking ability, Machiavellianism, and various components of the self-image. It is the premise of this investigation that, although normal adolescents do experience a good deal of cognitive, affective, and social upheaval, they can be meaningfully and significantly differentiated from delinquent adolescents on the basis of their characteristic modes of perceiving and interacting with their social and affective milieus.

Role-Taking

Role-Taking in Normal Development. The concept of egocentrism, which refers to the inability to view the world from the frame of reference of another, has played an important role in Piaget's theory of cognitive development. Much

of the normal developmental process, according to Piaget, is geared toward overcoming precisely this constricted view of the world. However, Piaget did not view egocentrism as a unitary concept. He saw the child evolving from a basic egocentric state, in which the concepts of self and other are not differentiated, through progressively higher forms of egocentrism.

Piaget has also placed a good deal of emphasis upon the concept of decentering. While the preoperational child (approximately 2 to 7 years) has achieved an adequate self-other differentiation and displays a capacity for representation (i.e., language), he is still unable to attend simultaneously to more than one aspect of any situation. (Piaget's studies of conservation of mass have provided graphic evidence for the inability of young children to attend to more than one dimension -- they can consider the height or width of a container, but not both.) The inability of children to decenter, to view two aspects of the same situation, renders them unable to differentiate their own viewpoint from that of another. It is the concept of decentering which is pivotal to the child's development of role-taking ability. As children develop the cognitive capacity to decenter or to consider multiple perspectives, they correspondingly develop the capacity to understand the thoughts, emotions, intentions, and viewpoints of persons other than themselves. Thus, as Piaget has repeatedly emphasized, the same process which

bring about cognitive development are responsible for affective development as well (Inhelder & Piaget, 1958).

Role-taking, as defined by Shantz (1975), is an amalgam of cognitive processes which constitutes the means by which one person comes to know and understand another. This understanding is due to the ability of the role-taker to infer the perspective of another and to conceptualize the relationship between this perspective and his own. Shantz (1975) cautioned that the term "role" in this context does not refer to the common sociological usage, but is used to refer to the brief, even momentary, positions which people occupy with respect to one another (p. 264).

Various developmental stage models of role-taking have been proposed (Feffer, 1970; Flavell, 1974). The model of Selman (Selman, 1973; Selman & Byrne, 1974) is perhaps the most extensive and well known, and will be reviewed below. Selman's Stage 0 is called "Egocentric Role-Taking" and occurs between birth and approximately 6 years of age. At this stage, prior to the development of the ability to de-center, children are unable to differentiate their own perspective from that of another. Between 6 and 8 years of age, children arrive at State 1, which is called "Subjective Role-Taking." Children are then able to infer the thoughts and feelings of another, but unable to judge themselves from the other's perspective. Stage 2 develops between 9 and 10 years and is called "Self-Reflective Role-Taking." At this

stage, children are capable of viewing themselves as others do. Stage 3 occurs by age 10 or 11 and is called "Mutual Role-Taking." By this time children are able to understand that both self and another can mutually and simultaneously consider the other's perspective. By age 12 role-taking ability extends beyond the two-person system in that adolescents are able to view themselves and others from the perspective of the wider social system. While Selman's model has some implications for role-taking ability in adolescence, few investigations have been conducted beyond the childhood years.

Shantz (1975) has exhaustively reviewed the role-taking literature. With regard to role-taking in adolescence, she states

In social episodes, the adolescent is much more oriented toward and accurate in making inferences about the thoughts, intentions, and feelings of each participant in the episode. Particularly, there is a spontaneous tendency to try to explain such thoughts and feelings, not merely to describe them. Likewise, the descriptions of others show much greater subtlety and refinement in the use of traits, the recognition of contradictory tendencies within an individual, and relating situational factors to another's behaviors. (pp. 312-313)

Beyond Shantz's summary, however, little can be said with certainty about the role-taking skills of the adolescent.

When role-taking is defined as an "ability to take the position of another person and thereby infer his perspective" (Shantz, 1975), it is clear that the construct may be viewed very broadly and therefore lends itself to a variety of modes of measurement. As a result, the develop-

mental literature abounds in labels for this particular skill, with such terms as empathy, social cognition, social intelligence, and person perception frequently used interchangeably with role-taking. In an attempt to lend some clarity to this conceptual clutter, Irwin and Ambron (1973) have indicated that the ability to assume the perspective of another is not a unitary skill. They identified three dimensions of role-taking ability, based upon the similar, but distinct abilities to assess the thoughts, feelings, and perceptions of another. Role-taking may then be viewed as a social or interpersonal skill with cognitive, affective, and perceptual components.

The present study views role-taking in two different ways. First, since subjects are asked to determine, on the basis of verbal and nonverbal cues, how another person might be feeling, it is clear that what is being measured is the affective component of role-taking ability. Previous authors have defined this particular form of affective role-taking as empathy (Borke, 1971) or social cognition (Shantz, 1975), that is, the ability to understand or infer the inner feelings of another. For the purposes of the present investigation, the term "affective role-taking" will be employed in order to underscore that the ability to infer the feelings of another requires a particular form of role-taking, and that this ability is only one component of all that is implied by role-taking. Second, the present study also mea-

sures role-taking via a self-report questionnaire, the Socialization Scale. The basic assumption of such a scale is that certain attitudes are dependent upon the ability to assume the perspective of another and that, therefore, the endorsement of such attitudes reveals the presence or operation of role-taking abilities. Measured in this manner, role-taking is not assessed directly, but is inferred from the presence or absence of attitudes which presumably would not have developed without role-taking ability. Examples of such attitudes would be: "Before I do something I try to consider how my friends will react," "I often think about how I look and what impression I am making upon others," "I think I am stricter about right and wrong than most people." This particular measure, then, taps into role-taking ability in a general, global manner, with no differentiation between affective, cognitive, or perceptual components. One can certainly presume, as this study does, that the two aspects of role-taking which are assessed by the methods outlined above are related, but not identical. In order to avoid the conceptual confusion which presently exists within the role-taking literature, however, it must be reiterated that role-taking is not a unidimensional construct and no single scale has proven adequate to its measurement. The particular measures employed in the present study illuminate separate components of the construct of role-taking, but they by no means encompass the entire amalgam of skills and

processes which constitute role-taking ability in the broadest sense.

Role-Taking and Delinquency. Role-taking has been viewed as an essential concept for understanding the delinquent or psychopath. It is important to note that while these two terms are not synonymous, the assumption is made that the delinquent population is comprised of a large enough proportion of psychopathic or sociopathic types to justify consideration of both simultaneously. In addition, the psychological literature has tended to employ the term psychopath in a broadly defined manner to describe all individuals who consistently violate the law or values of the dominant culture, i.e. delinquents.

In the first edition of his pioneering work, Cleckley (1976) published the earliest and most comprehensive clinical description of psychopathic personalities. He viewed psychopaths as persons who lack empathy and concern for others, who manipulate others for their own interests, and who are able to simulate emotional reactions and attachments without a capacity to experience them deeply and genuinely. Cleckley observed a number of additional attributes of the psychopath, including: superficial charm and intelligence, unreliability, insincerity, lack of remorse or shame, pathologic egocentricity, poor judgment, inability to profit from experience, lack of insight, and an absence of psychotic or neurotic manifestations such as delusions or anxiety. The psychopath's ten-

dency to verbalize many standard moral, ethical, and social codes without understanding them or observing them as do others was also noted. Cleckley viewed this tendency to erect a verbal facade or a "mask of sanity" as central to psychopathy and he termed it "semantic dementia." Cleckley went on to note "that the psychopath's disorder, or defect, or his difference from the whole or normal or integrated personality consists of an awareness and a persistent lack of ability to become aware of what the most important experiences of life mean to others" (p. 371). In this formulation, then, Cleckley postulates a deficit in role-taking, an inability to assume the viewpoint of other persons, as the central defect of the psychopath. It is this defect, which Cleckley viewed as frequently absolute and unmodifiable, which precludes the possibility of the psychopath experiencing genuine love or concern for another.

Many of Cleckley's views have become widely known and shared. In his conceptualization of the psychopath, Buss (1966), for example, stated that "the basic problem is an inability to extend the self-interest beyond the self . . . this extreme vanity prevents the psychopath from having any empathy. Unable to extend his self, he cannot place himself in the position of the other person. . . . He does not have the empathy that would allow him to anticipate how others might react to this unusual behavior. . . . The psychopath, having no empathy, cannot see himself as others do" (p. 434).

One of the most cogent theoretical conceptions of the etiology of psychopathy has been set forth by Gough (1948). Like the authors cited above, Gough viewed the primary defect of the psychopath as an inability to take the role of another. Relying heavily upon concepts derived from the work of Mead (1934), Gough hypothesized that the psychopath has both an inadequately developed "self," which normally arises from social interaction when the individual possesses the capacity to view himself as others do, and an underdeveloped conception of the "generalized other," which is a common and consistent view of people and of social reality in general. These inadequate role-taking experiences and abilities were presumed to render psychopaths incapable of sharing another's perspective and of evaluating the impact of their own behavior upon others. These role-taking deficits, then, were felt by Gough to be responsible for the psychopath's inability to adapt and cooperate in a social situation, for deficiencies in self-understanding and self-control, and for the inability to act in accordance with the expectations and anticipated reactions of other individuals as well as of society-at-large. Gough stated

The psychopath cannot grant the justice of punishment or deprivation, because this involves an evaluation of his behavior from the standpoint of the "generalized other," or society. The psychopath will violate others' wishes and desires because he does not conceive of his own actions as inimical to their wants. He forms no deep attachments because he does not know how to identify himself with another or to share another's viewpoint. He lacks control because he cannot anticipate objections which others will make to his behavior. (p. 364)

Gough and Petersen (1952) undertook the development of an assessment based upon Gough's theory of role-taking, which would yield reliable and valid predictions of delinquent and criminal behavior. This delinquency (De) scale was comprised of empirically selected items pertaining primarily to social interactions and role-taking situations. Subsequently, the De scale was modified to encompass the full range of the continuum of socialization. Rather than considering only a delinquent-nondelinquent dichotomy, this revised scale was intended to locate persons along a scale of varying degrees of socialization, and as such it was renamed the Socialization (So) scale (Gough, 1960). The So scale has been the subject of considerable research, including longitudinal and cross-cultural investigations. It has consistently demonstrated its efficacy for distinguishing delinquents from controls, as well as for identifying subgroups within delinquent populations of more and less psychopathic individuals. The impressive evidence for the scale's construct validity, as well as for Gough's role-taking theory of psychopathy, are attested to by Schalling's (1978) view that "the Gough role-taking factor, as measured by his Socialization (or Delinquency) scale is the most salient among the self-report variables related to psychopathy" (p. 102).

Though Gough has postulated role-taking deficits to be central to the etiology of psychopathy, he did not offer a rationale for the existence of such deficits, beyond the

notion that they may be reflective of negative experiences in early interpersonal interactions. Schalling (1978), however, has conducted several investigations of the psychophysiological correlates of high So scores, which shed an interesting, and perhaps unexpected light upon this issue. These studies have demonstrated that low So scorers evidence low levels of skin conductance with few spontaneous fluctuations and slow recovery rates, as well as low catecholamine (adrenaline) excretions under conditions of stress. Schalling hypothesized that these psychophysiological findings reflect the psychopath's deficiency in level of cortical arousal or level of alertness. That is, the evidence suggests a physiological defect resulting in the psychopath's having a lower than normal level of signal anxiety, a tendency to screen out stimuli, and a relative insensitivity to sensory cues. Furthermore, the finding of a clear correlation between these psychophysiological measures and a scale (So) which is concerned with interpersonal attitudes and interactions was highly noteworthy. It suggested to Schalling that role-taking deficits in psychopaths may be due to a constitutional weakness in the regulatory neuroendocrinological and autonomic systems which govern cortical arousal and input regulation or, alternately, that the psychophysiological disturbances may be due to inadequate interpersonal experiences which might be necessary for their development.

This recent and important work suggests that investigations of psychopathy might best be conducted from a biopsychosocial or interactive perspective. Additionally, as Hare (1970) has indicated, the psychopath's cortical under-arousal or tendency to attenuate sensory input has a number of interesting implications with respect to the psychopath's role-taking ability. According to Hare

First, many of the cues essential for adequate social functioning are subtle and of low intensity. The psychopath's tendency to attenuate sensory input would mean that some of these cues would be below threshold and relatively ineffective. Further, in an attempt to attain an optimal level of arousal, the psychopath is likely to actively seek intense stimulation or at least stimulation that has "exciting" or arousing qualities. In scanning the environment for such stimulation, however, he would probably miss, or perhaps simply ignore, many social cues -- cues that have important informational and emotional content and are needed for the guidance of behavior. As a result, he would ordinarily be little influenced by many of the cues emanating from other individuals. If, however, these cues had special significance for him -- as would be the case if he were trying to use others for his own purposes -- we might expect that a special effort would be made to attend to them. (p. 69)

The work of both Hare (1970) and Schalling (1978), then, points to the presence of physiological deficits which may be related to the psychopath's impaired role-taking ability.

In spite of the widespread clinical and theoretical consensus that the primary deficit of the psychopath is in the area of role-taking, there exists very little empirical validation for such a notion. A study conducted by Chandler (1973) provided compelling evidence for the importance of role-taking in delinquency. Using a cognitive, rather than an affective measure of role-taking, Chandler found marked

differences between chronically delinquent and nondelinquent early adolescent males. In comparison with their more highly socialized counterparts, the delinquents exhibited a far greater degree of egocentrism and a significant lag in their ability to assume the role or perspective of another. Furthermore, delinquents who were subsequently included in a program of training in role-taking skills, exhibited substantially improved role-taking ability with respect to a placebo and a control group of delinquents. And, most impressively, as compared to the combined placebo and control groups, 18 months after the intervention these observed increases in role-taking skills were associated with significant reductions in the number of police and court-recorded delinquencies.

Although Chandler's investigation is quite compelling, it is to date the only investigation of its kind. Beyond the work of Gough and studies utilizing the So scale, the hypothesized relationship between role-taking deficits and delinquency or psychopathy has not been adequately supported, but neither has it been supplanted by alternate views. The current status of the hypothesis is well summarized by Smith (1978), who states that "although the psychopath's empathic skills may indeed be impaired when compared with some normative average for this capacity, it is only an assumption to believe so. I do not know that such a hypothesis has been meaningfully tested since 1973" (p. 64).

An additional hypothesis regarding role-taking and delinquency, which has also been the subject of very little empirical investigation, is the hypothesis that the role-taking skills of the delinquent are highly variable and dependent upon the particular component of role-taking under consideration. As quoted above, Hare (1970) has pointed out that the delinquent's or psychopath's role-taking ability may vary according to the utilitarian values of different social cues. Guterman (1970) has also noted that the delinquent may often be highly skilled in discerning the attitudes and feelings of others. A study conducted by Rosenthal, Archer, Koivumaki, Di Matteo, and Rogers (1974) bears some relevance to this issue. The authors found that when non-verbal expressions were presented to subjects for two seconds, the most accurate judges of these stimuli were persons high in role-taking (So) ability. However, when presentation was only one quarter of a second, the most accurate judges were the low So scorers. The authors concluded from these findings that persons with delinquent tendencies may actually be keen and sensitive judges of emotional cues. They hypothesized that the longer exposure to the nonverbal cues may have had a detrimental effect upon the performance of the low So scorers due to the fact that they became flooded with data. That is, since these persons were highly sensitive to very brief nonverbal cues, it was presumed that longer exposure to the stimuli caused them to perceive very

subtle and perhaps contradictory cues, which might lower the accuracy of their judgments with respect to the high So scorers, who were presumably unable to discern as many subtle cues.

Though few such studies have been conducted and delinquent subjects have been tested only minimally, there does exist some consensus that delinquents may be skilled readers of other people. It is important, however, to distinguish the ability to judge the emotions of another from the ability to "decenter" or assume the perspective of another. Though even very young children are capable of inferring affective states from emotional expressions (Borke, 1971; Dimitrovsky, 1964), this does not necessarily demonstrate their ability at role-taking. As has been mentioned earlier, it is the contention of the present study that the abilities to assume the perspective of another (role-taking) and to accurately infer the affective states of another (affective role-taking) are not identical or synonymous. Selman (1973) has, for example, stated that the ability to judge the affective states of others is necessary, but not sufficient evidence for decentration or role-taking ability. One might, therefore, expect to find many persons who are primarily egocentric (Selman's Stage 0), and yet capable of identifying the affective expressions of others. This situation might be reflected in the present study, for example, by a finding of delinquents performing

commensurate with normal adolescents on the simplest measures of the affective component of role-taking while showing a decrement in overall role-taking ability as measured by the So scale. Such an outcome is entirely consistent with the view of Guterman (1970), who states that while the delinquent is able to discern the feelings of others, "this type of sensitivity . . . evidently differs from sympathy in that, even though the delinquent may accurately perceive the attitudes of others, he probably does not affectively experience these attitudes" (p. 46). Also relevant in this context is the distinction made by Ullman and Krasner (1969) between the psychopath as a skilled "seducer" or manipulator, as opposed to a "genuine lover," that is, one who is truly sensitive to and concerned about the welfare of the other.

Inconsistent Communication

Decoding Inconsistent Messages. Research on the affective component of role-taking has generally involved subjects being presented affective expressions from which they are required to infer what the stimulus person is feeling. In general, these expressions have been relatively clear and unambiguous. Adding additional complexity to the issue, however, a number of investigators have been interested in the response of persons to stimuli which present blatantly inconsistent or contradictory data. Studies of this latter sort have presented two types of stimulus inconsistency. The first type is represented by the work of Fridja (1969)

and his associates. In these studies, stimulus materials consisted of a number of photographs of facial expressions presented in conjunction with a short description of the context in which these expressions might have occurred. The stimuli were inconsistent in that one would not normally expect the emotional expressions to have occurred in the contexts with which they were paired. The results of a number of such studies indicated that affective cues were approximately four times as important as contextual cues in determining the overall evaluation of the inconsistent stimuli. According to Fridja, therefore, "if someone behaves happily or sadly when circumstances make us expect otherwise, we believe his behavior rather than our expectations" (p. 197). In a second type of study, these stimulus inconsistency occurs, not between affective expressions and contexts, but between different channels of affective expression (i.e., facial or postural cues, vocal intonation, and verbal content). This latter type of study is better represented in the literature and is more pertinent to the present investigation, and will be described in detail below.

Some of the earliest investigations of the process of decoding inconsistent messages were conducted by Mehrabian and Wiener (1967) and Mehrabian and Ferris (1967). In these studies college students initially rated the degree of positive or negative affect they perceived in facial, verbal (content), and vocal (intonation) expressions of emotion.

Subsequent to these ratings the same stimuli were paired to form two-channel messages. Subjects then reevaluated these stimuli in the form of two-channel messages which were at times consistent and at times inconsistent across channels. From the result of these two studies, Mehrabian derived the following equation to represent the relative contributions of each of the three affective channels toward the overall evaluation of an inconsistent message: $\text{Attitude} = .07 \text{ Verbal Attitude} + .38 \text{ Vocal Attitude} + .55 \text{ Facial Attitude}$ (Mehrabian, 1971). From this he concluded that when the verbal and non-verbal (facial and vocal) parts of a message are inconsistent, people rely on the nonverbal part and make their judgment accordingly.

Argyle, Salter, Nicholson, Williams, and Burgess (1970) expanded upon the work of Mehrabian in two ways. Using videotape equipment they were able to present more naturalistic three-channel stimuli which varied along a dominant-submissive, rather than a positive-negative dimension. In spite of these differences, Argyle et al. found regression weights for the facial, vocal, and verbal channels which were very similar to those found by Mehrabian. Utilizing inconsistent stimuli which varied along a relaxed-tense dimension, Kestenbaum (1977) also demonstrated that the nonverbal channel of communication predominated over the verbal channel.

De Paulo, Rosenthal, Eisenstat, Rogers, and Finkelstein (1978) reported the results of two studies on the pro-

cess of decoding inconsistent affective cues. They developed a nonverbal discrepancy test, a film consisting of 128 nonverbal stimuli of which one-quarter were consistent and three-quarters inconsistent across channels. These stimuli varied along both positive-negative and dominant-submissive dimensions. The results of the first study revealed that normal college-aged subjects decoded inconsistent messages by relying more upon facial and postural cues than upon vocal intonation. In the second study, the nonverbal discrepancy test was administered to three samples with average ages of 12.8, 16.4, and 20.0 years. For all three samples there was again a clear primacy for facial and postural cues over vocal cues, especially for decoding inconsistencies along the positive-negative dimension rather than the dominant-submissive dimension. In decoding highly inconsistent messages, as opposed to messages in which the inconsistency across channels was slight, however, subjects attended relatively more to vocal intonation than to facial expressions and postural cues. Finally, there were no significant differences in decoding strategies across the three age groups. Drawing developmental conclusions from this work would not be warranted, however, since the range of ages studied was quite narrow and the age differences were confounded by social class and I.Q.

The work of De Paulo et al. expands upon the studies cited above and is congruent with their findings. These studies are also congruent with the cognitive psychology

literature on modality (channel) primacy. A review of this work by Posner, Nissen, and Klein (1976) showed that visual (facial and postural) cues tend to dominate other modalities in a wide variety of perceptual, memorial, and speeded tasks. They hypothesized that the primacy of visual channels of communication may be related to the relatively weak signaling capacity of the visual channel requiring subjects to compensate by tuning their attention more strongly to visual cues.

Whether visual primacy in decoding inconsistent affective messages is related to increased attention to these cues or simply to their being given a greater subjective weighting than verbal cues, is a question that must await further research. Also, while the evidence to date clearly indicates that adults rely most heavily upon facial expressions, then vocal intonation, and then verbal content in decoding inconsistent communications, the picture is very different with respect to children.

The Child's Response to Inconsistent Messages.

Bugental, Kaswan, Love, and Fox (1970) endeavored to study age trends and child-parent differences in the decoding of various three-channel messages. They videotaped acted scenes in which systematic variation of positive, neutral, and negative affect was represented in facial, vocal, and verbal channels. Each of the three channels was rated independently for degree of positive or negative affect and then the combined three-channel videotapes were presented to children of three

age groups (5 to 8, 9 to 12, and 13 to 18) and to their parents. Bugental et al. found that children, as well as adults, were able to perceive evaluative meaning in all three communication channels, whether they were consistent or inconsistent. In addition, children tended to place less weight, relative to the adults, upon facial cues than upon verbal and vocal cues. This study was replicated by Bugental, Kaswan, and Love (1970), with similar results. This study also found that when vocal and verbal channels were inconsistent, children tended to discount the channel communicating the positive affect and inferred the overall affect on the basis of the negative channel. The authors concluded that, "children, when confronted with a conflicting message, resolve the incongruity by assuming the worst" (p. 655).

Solomon and Yaeger (1969) investigated the decoding strategies employed by fourth-grade boys for resolving inconsistencies between affects communicated via vocal intonation and verbal content. The personality variables of anxiety, need for achievement, locus of control, need for approval, and intelligence were also assessed in order to determine their relationship to the ability to decode inconsistent messages. For the fourth-grade boys studied, verbal content exhibited clear primacy over vocal intonation when the two channels were inconsistent. Solomon and Yaeger also found that latency (in seconds) of the subjects' responses was greater for inconsistent than for consistent messages. The

authors postulated that their subjects perceived the inconsistency, had difficulty reconciling it, and finally resolved it by discounting the vocal component of the message. With the exception of the anxiety measure, the personality variables were found to have no relation to the perception of the inconsistent messages. Anxiety, however, was found to be positively related to sensitivity to vocal intonation which was seen to be consistent with the view that anxiety may tend to foster greater vigilance. Solomon and Ali (1972) replicated the above study using college students and children of various ages. They found that in decoding the overall impact of affects expressed in two-channel inconsistent messages, vocal intonation exhibited clear primacy for adults, while the verbal content was predominant for children. This study revealed that the effect of the verbal content increased until about the fourth grade, and declined thereafter, while the effect of the vocal intonation component increased from about the eighth grade. Thus, at about the twelfth grade, a crossover occurred, at which time verbal primacy as a strategy for decoding inconsistent messages gave way to vocal primacy.

In a previous study by the present author (Lani, Doheny, & Curtiss, 1979), facial and verbal messages and consistent and inconsistent pairs of two-channel messages were decoded by college students and second-, fifth-, and eighth-grade subjects. The results of this study indicated

that while second- and fifth-graders relied on verbal content to decode inconsistent communications, eighth-graders and adults relied on facial expressions.

The results of these studies and those reviewed above demonstrate that adults and children use quite different strategies for resolving inconsistency across channels. While adults exhibit a clear reliance upon facial and then vocal cues, children rely much more heavily upon verbal cues. It appears, then, that the processes whereby inconsistent channels of communication are decoded follow clear developmental lines. There is some evidence which suggests that this shift from verbal to nonverbal primacy is related to the shift from concrete to formal operations (Lani, Doheny & Curtiss, 1979). However, such a hypothesis should be the subject of future research and is beyond the bounds of the present investigation.

Inconsistent Messages and the Double-Bind Hypothesis.

The studies of inconsistent communications undertaken by Mehrabian and Ferris (1967) and Mehrabian and Wiener (1967) were intended in part to provide a test of the double-bind hypothesis of schizophrenia. The double-bind is a concept which was proposed by Bateson, Jackson, Haley, and Weakland (1956) as a possible etiological variable in the development of schizophrenia. According to Bateson et al., a double-bind can only occur within an intensely important relationship of two or more people. Its essential components are a

primary negative injunction, which, if violated, leads to aversive consequences; a secondary negative injunction, which contradicts the first at a different level of abstraction and like the first is also enforced by punishment; and a tertiary negative injunction, which prohibits the victim of a double-bind communication both from "leaving the field" of the dilemma and from explicitly commenting upon it. The authors pointed out that the victim of repeated double-binds is constantly exposed to situations in which nothing at all can be done (as when one encounters a sign which reads, "Ignore This Sign"). The immediate result may be panic, helplessness, fear, or rage, with continued exposure to double-bind situations being presumed to lead to the development of some form of psychopathology, especially schizophrenia.

Mehrabian postulated that according to the double-bind hypothesis, messages which are inconsistent across two channels of communication (i.e. different levels of abstraction) should be difficult to decode. The results of his investigations led Mehrabian to conclude that, "people do quite readily understand the true meaning when the verbal and non-verbal parts of a message are inconsistent - - they rely on the nonverbal part and make their judgement accordingly" (Mehrabian, 1971, p. 54). From this, then, Mehrabian concluded that his work failed to support an assumption which is basic to the double-bind hypothesis. It is important to

note that Mehrabian's work did not provide a totally adequate test of the double-bind hypothesis. Inconsistency across communication channels is certainly an important aspect of a double-bind, but it does not fulfill all the criteria necessary to constitute a double-bind as specified by Bateson et al. (1956). Likewise, the present study deals with inconsistently communicated affects and does not purport to provide an adequate test of the double-bind hypothesis. Bateson's hypothesis is, however, a compelling one, which provides a conceptual link between the study of how inconsistent messages are decoded (one aspect of affective role-taking) and the development of psychopathology (delinquency). Due to its relevance to the present study, research on the double-bind hypothesis will be briefly reviewed below.

A number of investigators have undertaken to test the double-bind hypothesis by determining whether such situations do indeed occur in the family relations of schizophrenics. The results of these studies have been quite mixed. Of those studies which dealt directly with schizophrenics and their parents some found evidence of double-bind situations (Berger, 1964; Sojit, 1969, 1969, 1971), while another did not (Bailey, 1972). Of those studies pertaining to a variety of disturbed children and their families, two failed to find evidence of double-binds (Beakel & Mehrabian, 1969; Bugental, Love, and Gianetto, 1971), while one found that mothers of disturbed children, but not fathers, produced

messages which were inconsistent across channels (Bugental, Love, Kaswan, & April, 1971).

In general, the empirical literature on the double-bind has demonstrated very little conclusive support for the hypothesis (Abeles, 1976; Gootnick, 1973; Olson, 1972; Schuham, 1967; Vetter, 1969). Many investigators have failed to provide an adequate experimental paradigm to adequately reflect the complex nature of a double-bind situation (Ciotala, 1961; Kingsley, 1969; Potash, 1964). When experimental simulations have been adequate, however, the results have tended to be somewhat more encouraging (Smith, 1972).

Studies which have attempted to find documentary evidence of double-bind situations have also been hampered by a number of conceptual and methodological pitfalls. One of the most disturbing was found to be the difficulty in identifying and quantifying the manifestations of double-binds (Ringuette & Kennedy, 1966). As Schuham (1967) points out, failure to find support for the double-bind hypothesis may be largely attributable to "confusion about its precise definition, the diversity of interactional phenomena to which it has been applied, and the complex methodological task of attempting to measure a subtle phenomenon occurring selectively in the interaction between at least two individuals communicating simultaneously on different levels" (p. 409).

In spite of the fact that the double-bind hypothesis has received minimal empirical support, it continues to be

a compelling and widely held concept in clinical practice and theory, and it continues to stimulate research interest. In pointing the way toward further research on the double-bind hypothesis, Abeles (1976) noted

One difficulty with research into the double bind involves assumptions basic to the experimental method, whose advantages reside in the isolation of critical variables. The double bind was conceived and originally described as an interaction phenomenon. To summarize the issue briefly, and in a shamefully oversimplified fashion, with interactional systems and concepts that explain them, there are no isolates, and etiology is not interpreted in terms of lineal cause-and-effect determinism. This suggests that a more appropriate approach to research would be provided by some model other than that embodied by the experimental method. Methods employed in ethnology, ethology, and in communications research (i.e., a natural history method) all seem more appropriate. (pp. 137-138)

Inconsistent Messages and Delinquency. Since the original publication of the double-bind hypothesis of schizophrenia (Bateson, et al., 1956), numerous attempts have been made to extend the etiological significance of the double-bind. The most prominent of these include Sluzki and Veron's (1971) conceptualization of hysterical, phobic, and obsessive-compulsive neuroses in terms of double-bind antecedents, and Ferreira's (1960) application of the double-bind to describe the interactions in families of delinquents. Ferreira proposed the concept of a split-double-bind to account for a pattern of interaction which seems characteristic of these families. In the split-double-bind the source of the inconsistent communication (the primary and secondary negative injunctions) is not a single person, but is split between

two persons. The delinquent characteristically finds himself caught between conflicting parental expectations. The message from one parent is contradicted at a different level (i.e., communication channel) by the message from the other parent. Ferreira additionally modified the original components of the double-bind by asserting that in a split-double-bind there need not exist an injunction against "leaving the field." In fact, delinquent behavior may be thought of as an attempt at escaping the split-double-bind of conflicting parental communications.

It may be hypothesized from Ferreira's formulations that double-bind or split-double-bind situations would be found in the family interactions of delinquents, and that delinquents would exhibit deficits in their ability to resolve inconsistent communications. Research on these two hypotheses, however, has been meager.

With respect to the interactions of families containing a delinquent member, the work of Sojit (1969, 1971) has some relevance. In these two studies the family interactions of schizophrenics, delinquents, ulcerative colitis patients, and controls were recorded while they attempted to arrive at a consensus regarding the meaning of a number of proverbs. Though the presence in these families of inconsistent or double-binding messages was not directly assessed, the results of these studies tended to confirm Ferreira's hypothesis. The parents of the three pathological

groups were found to violate logic, to draw invalid and tangential interpretations, to make false abstractions, and to make fewer explicit statements about the nature of the binding situation than did parents of normal controls. However, the responses of the parents of delinquents were not found to be significantly different from those of the parents of schizophrenics and ulcerative colitis patients. This research, then, found only indirect and limited support for the hypothesis. Another study which bears somewhat upon the relationship between delinquency and double-binding families is that of Bugental, Love, Kaswan, and April (1971). These investigators found that the sons of mothers who generated inconsistent messages were rated significantly higher in school aggressiveness than were sons of nonconflicting mothers. Again, the results of this study are merely suggestive. They cannot be interpreted as offering either direct support or disconfirmation of Ferreira's hypothesis.

Evidence in support of the hypothesis that delinquents are deficient in their ability to decode inconsistent messages is equally meager. Loeff (1965) demonstrated that delinquent adolescents were as adept as normals in recognizing inconsistent messages. However, delinquents placed greater emphasis upon vocal intonation than upon verbal content for decoding inconsistent messages, while normal subjects did the opposite. Kestenbaum (1977) studied normal subjects and found evidence for the primacy of facial and postural

cues over verbal content in decoding inconsistent messages. It was also found that those subjects whose most elevated MMPI score was on the Psychopathic Deviate scale exhibited an even greater reliance upon nonverbal cues. Finally, Reilly and Muzekari (1979) found that schizophrenic adults, normal children, and acting out children gave greater primacy to verbal content in decoding inconsistent messages than did normal adult subjects.

While the evidence cited above suggests that families of delinquents exhibit a more pathological pattern of interaction than do families of normal adolescents, the persistent appearance of inconsistently communicated affects in these families has not been adequately assessed. Likewise, while there is some support for the view that delinquents and normals do not decode inconsistent messages in a like manner, the evidence is clearly meager and the findings contradictory. It would appear, then, that the current empirical literature has not adequately ascertained whether delinquents are impaired in their ability to decode inconsistent messages and in what ways their strategies for decoding such messages differ from those of normal adolescents.

Machiavellianism

Machiavellianism in Social Adaptation. The study of the tendency to view social interactions in terms of tactics of power and manipulation was introduced into the psychological literature by Christie and Geis (1970). In order to mea-

sure this concept, which has been termed Machiavellianism (Mach), Christie and his associates devised a 20-item inventory based upon the writings of Niccolo Machiavelli.

Christie hypothesized that the Machiavel, being a person adept at manipulation in social contexts, could be characterized by: a) a relative lack of affect in interpersonal relations, b) a lack of concern with conventional morality, c) a lack of gross psychopathology, and d) a low commitment to ideological values. Though based upon a 16th-century conception of social and political manipulation, the Mach scales have demonstrated excellent criterion and construct validity in a variety of modern day settings.

Christie and Geis reported that their initial predisposition, as well as that of society-at-large, was to evaluate Machiavellianism, and high Mach scorers, in a negative or derogatory fashion. They discovered, however, that this bias was not at all justified by the data. In fact, numerous zero-order correlations were found between the Mach and other scales. Christie and Geis understood this finding to be related to the fact that, "most measures of individual differences commonly used by psychologists have been devised to measure deviant behavior and our focus was in the opposite direction since we were concerned with a measure of effectiveness in manipulating others" (p. 35). Christie and Geis reviewed numerous studies which demonstrated essentially no significant relationship between Machiavellianism and intel-

ligence, socio-economic status, anxiety, and other measures of psychopathology (for example, the MMPI). One variable which did show a significant relationship with Machiavellianism was age. The studies reviewed indicated that Mach scores increased throughout childhood and adolescence before leveling off after the onset of maturity. Though no longitudinal data were available, Christie and Geis interpreted this and similar findings as indicative of a growing tendency in modern society to socialize its youth for increasing politicalization and manipulation. The highest correlations of Machiavellianism with any other personality measure was found to occur with Siegel's Hostility Scale. This scale measures self-reported feelings of hostility, rather than overt expressions of hostility. In fact, there is no evidence to suggest that high Mach scorers are more prone to aggressive behavior than are low Mach scorers.

A number of studies have been summarized by Christie and Geis which demonstrate impressive validity for the concept of Machiavellianism in relation to a number of relevant behavioral indices. In game situations high Mach scorers were induced to cheat as often as low Machs, but they were able to look their accuser in the eye and deny cheating much longer than did the low Machs. In numerous simulated situations, high Machs were found to be superior to low Machs in their abilities to manipulate and influence others, to succeed at bargaining, to evaluate and test-the-limits of a

social situation, to be decisive and dominant members of a group, and to capitalize on ambiguity in relation to others.

On the basis of a number of empirical investigations, Christie and Geis (1970) arrived at a description of persons high in Machiavellianism as "The Cool Syndrome," reflecting emotional detachment, and persons scoring low on this trait as "The Soft Touch." They identified three dimensions along which high and low scorers could be distinguished: a) while high Machs were "resistant to social influence," as characterized by their suspiciousness, resistance to persuasion, and lack of concern with conventional morality, low Machs were susceptible to such influence; b) while highs exhibit a "cognitive orientation" (i.e., they were political and strategic, viewed others in terms of themselves, were not distracted by irrelevant data or affect, and maintained their own cognitive framework) low Machs were oriented toward persons and emotional encounters; and c) while high Machs were able to "initiate and control group structure," because of their greater persuasiveness. organizational resources, and leadership skills, low Machs tended to accept group structure and follow the leadership of others.

Machiavellianism and Role-Taking. The relationship between Machiavellianism and role-taking ability is in all probability not a simple one. As has been discussed above, role-taking is a complex construct having perceptual, cognitive, and affective components. In the view of Christie

and Geis (1970), persons high in Machiavellian qualities are able to devise effective interpersonal strategies based upon accurate appraisals of other persons. With regard to role-taking and Machiavellianism, they state that

both high and low Machs are "sensitive to others" - - but in quite different ways. High Machs appear sensitive to information about the other person. They respond to cognitive, discriminative labels and explicit cues, particularly those that are relevant to planning strategy in the situation. Low Machs appear more sensitive to the other person as a person, from his point of view, and in terms of his feelings, wishes, and expectations. (pp. 304-305)

Based upon this distinction between the cognitive orientation of high Machs and the affective orientation of low Machs, it seems likely that independent measures of the cognitive and affective components of role-taking would show very different relationships to Machiavellianism. Partial support for this view comes from an investigation conducted by Guterman (1970), who devised a sympathy scale to assess subjects' ability to imaginatively place themselves into the affective experiences of another. The results of this study revealed that role-taking defined as an affective process was negatively related to Machiavellianism.

Machiavellianism and Delinquency: Convergent Dimensions? Though Christie and Geis have maintained that Machiavellianism is not in any way related to psychopathology, this is not a universally held notion. While Weinstein (1969), for example, has agreed that persons possessing a moderately high degree of Machiavellianism are more interpersonally com-

petent than others, he has also stated that Machiavellianism in its extreme form is equivalent to psychopathy. Weinstein additionally argued that children begin life as Machiavels and that this tendency is progressively modified by the process of socialization. He viewed Machiavellianism, then, as the result of inadequate socialization (p. 770).

Smith (1978) has also taken issue with the contention that Machiavellianism is unrelated to psychopathy. He argued that, with the exception of the Machiavel's cognitive-rational orientation descriptions such as manipulative, distrustful, self-oriented, convincing, unconcerned with traditional morality, low ideological commitment, and interpersonally successful could as easily be descriptive of psychopaths as Machiavels. Furthermore, Smith criticized the failure of Christie and Geis to find any significant correlations between Mach and any of the MMPI scales, on the basis that Christie and Geis had studied Peace Corps volunteers who, "had been psychiatrically screened and scrutinized for pathology, which would effectively attenuate any correlations that otherwise might have been found" (p. 92). As further evidence for this point of view, Smith and Griffith (1978) reported a significant positive relationship between Mach scores and both the Psychopathic Deviate Scale of the MMPI and Elmore's Social Feeling Index (a measure of anomie) when these scales were administered to 66 American college students. These findings led Smith (1978) to suggest that Machiavellianism and psychopathy are indeed "converging dimensions" (p. 87).

Christie and Geis have, in fact, reported some studies which could be interpreted as consistent with Smith's view. As was mentioned previously, "the correlation of .60 between Mach IV and Siegel's Hostility Scale is the highest known correlation of Mach IV with any other personality measure" (Christie & Geis, 1970, p. 47). In another study, Mach IV (two other versions of the Mach scale are in common usage, Mach V and the "Kiddie Mach") was found to have a significant negative loading on Wrightsman and Cook's (1965) factor "Positive Attitude Toward People" (Christie & Geis, 1970, p. 46). Also, Christie and Geis reported a study by Harris in which it was found that, "in 19 of the 20 possible comparisons they [high Machs] have a less positive view of the fellow students with whom they have just interacted" (p. 50). Finally, Guterman (1970) reported a finding that high Mach V scorers also scored higher on the need Aggression Scale of the Edwards Personal Preference Schedule, while low Mach V scorers were higher on the need Abasement Scale.

These studies are suggestive of a relation between Machiavellianism and a tendency to project blame onto others, to report feelings of hostility, and to devalue other persons. These and other attributes are also descriptive of psychopaths or delinquents. Whether Machiavellianism and psychopathy are indeed "converging dimensions," as Smith (1978) has suggested, remains to be demonstrated. As of the present, there are no reported studies in which the Mach scales have been administered to delinquent subjects.

Distractibility and Delinquency

Recent reviews (Cantwell, 1978; Satterfield, 1978) have strongly suggested that childhood hyperkinesis, minimal brain dysfunction, and learning disabilities are frequent precursors of delinquency. The high incidence of academic underachievement by delinquents, though it may result in part from truancy and low frustration tolerance, also tends to support the notion that information processing dysfunctions may be quite common in this group. Rosenthal (1979) has recently proposed that delinquents may exhibit attention deficits similar to those seen in hyperkinetic children. Such deficits include poor performance on vigilance tasks, slow responses on simple reaction time tasks, and a cognitive style which is more impulsive and more field-dependent than is found with normal controls (Rosenthal & Allen, 1978).

Distractibility is one aspect of the broader concept of attention which has been shown to be a particular problem for hyperkinetics. Distractibility may be defined as a performance decrement which is attributable to the presence of stimuli which are extraneous to the task's requirements. Rosenthal and Allen (1979) have demonstrated, for example, that though hyperkinetics perform as well as normals on simple tasks where no extraneous data are present, they make significantly more errors than controls when extraneous data are available. The authors further demonstrated that the

tendency to be distracted by extraneous stimuli was affected by certain qualities of the stimulus materials, most notably, the relative salience which the distracting stimuli held for the subjects. Salience refers to the likelihood that a particular stimulus dimension will be cognitively observed and evaluated (Odom & Guzman, 1972). In the present study, the salience of a particular stimulus dimension (i.e., communication channel) is indicated by the primacy of that channel (for example, where facial primacy is evident in the process of decoding inconsistent affects, it may be said that facial cues are more salient than are verbal cues, and vice versa). In the study cited above, it was found that the presence of extraneous stimuli of high salience distracted the most from the perception and evaluation of the target stimuli.

The present study investigates the hypothesis that delinquents are more distracted than normal adolescents by extraneous affective cues. That is, it is expected that in their judgments of the affects communicated via either facial or verbal cues, delinquents are more influenced than are normal adolescents by the presence of extraneous cues (i.e., those of the non-target channel). This hypothesis is consistent with the studies cited above, as well as with clinical and research reports that delinquent adolescents are highly impulsive (e.g., Offer, Marohn, & Ostrov, 1979). Impulsive behavior refers to rapid responding to stimuli which, though highly salient to the individual, are extraneous or

inappropriate to the demands of the situation. Hare (1978), in reviewing psychophysiological studies of psychopathic adults, has proposed that such individuals tend, under stress, to tune out certain stimuli, irrespective of their relevance to the immediate situation. Thus, Hare's findings regarding these maladaptive attentional shifts in psychopathic adults and the results of studies of hyperkinetic children may be taken together as support for the possibility of a similar information processing dysfunction in delinquent adolescents. This view has potential relevance for clinical, biological, and social perspectives on delinquency; however, it has not been adequately studied.

Hypotheses

The present study is designed to assess and contrast a number of constructs related to the social and affective functioning of normal and delinquent adolescents. The overall objective is to identify those variables or constructs which are most efficacious for distinguishing these two groups. Within this objective a number of specific hypotheses can be offered:

a) Compared to normal adolescents, delinquents judge the affective communications of others as more negative (or less positive).

b) Inconsistent messages are seen as more difficult to decode than other messages, especially by delinquents.

c) In decoding inconsistent affective messages, normal adolescents rely more heavily upon facial cues, while delinquents tend to give greater emphasis to verbal content cues.

d) In their ratings of target affective stimuli, delinquents are more distracted by extraneous stimuli than are normal delinquents.

CHAPTER III

METHOD

Subjects

The 12 male and 17 female adolescents comprising the delinquent group were selected from a total of 54 delinquents tested. The 12 male and 34 female adolescents in the normal group were selected from a sample of 116 high school students. These groups of 29 delinquent and 46 normal adolescents were selected for further analysis on the basis of their being equated for sex, age, intelligence, race, and socioeconomic status (SES) as determined from the Hollingshead (1957) two-factor index of social position.

The following procedures were used in the selection of the 75 adolescents who participated in the present study. Normal adolescents were selected from among those students in five elective psychology courses at a middle-class, suburban high school who returned signed consent forms. In order to maximize the possibility that all of these individuals were indeed normal (i.e., not psychologically maladjusted), all students were eliminated who met either of the following two criteria: (a) a self-reported history of emotional or behavioral disorder requiring any form of psychiatric treatment, and (b) any history of serious academic or social disruptions as determined from school records and teacher reports.

Delinquent participants were selected from those consenting patients on four Chicago psychiatric inpatient services which specialize in the treatment of delinquent adolescents. All persons were eliminated whose treatment teams reported them to be primarily compulsive drug abusers, mentally deficient, neurologically impaired, psychotic, or otherwise evincing scattered cognitive efficiency or ego impairment of such severity as to preclude a valid sample of performance on the various measures. For the purpose of selection and classification, individuals were considered to be delinquent who had committed infractions of the law or societal norms of such magnitude as to require confinement and treatment in a psychiatric hospital. The designation of delinquency and elimination of those adolescents not satisfying the inclusion criteria of this group were ascertained in consultation with members of the hospital treatment teams.

After the application of the selection procedures described above, the two remaining groups of high-school students and hospitalized delinquents were found to differ somewhat according to mean age, SES, and intelligence. As an initial step toward equating the two groups, all high-school students 18 years old and above were eliminated. Subsequently, those persons most disparate with respect to SES and intelligence were eliminated from the student group. In those instances where a number of students were equivalent on a particular characteristic, their elimination was randomly deter-

mined. Finally, a sufficient number of persons from both groups were eliminated in order to insure that the final groups of 46 normal and 29 delinquent adolescents were equivalent on the basis of all five characteristics listed above.

Since the multidimensional nature of delinquency is well established (Peterson, Quay, & Tiffany, 1961; Trujillo-Gomez & Marohn, 1979), it was expected that the delinquent group would be composed of individuals with any number of different personality constellations. In fact, the composition of this group in terms of the diagnostic categories assigned by the treatment team of their respective hospitals was as follows: 17 borderline personality disorders, nine narcissistic personality disorders, one inadequate personality, one group delinquent reaction, and one unsocialized aggressive reaction.

Measures

Affective Role-Taking and Inconsistent Messages.

A method for assessing the relative contributions of facial and verbal cues in the determination of the overall attitude conveyed in two-channel inconsistent messages was developed in a previous study (Lani, Doheny, & Curtiss, 1979). This instrument consists of 16 slides or photographs of two male and two female drama students portraying various positive and negative affects via their facial expression and 16 emotionally-toned verbal expressions. These 16 facial and 16 verbal stimuli may be presented singly, as independent one-

channel communications, or in 16 facial-verbal pairings, representing two-channel inconsistent communications. An inconsistent communication is defined as a two-channel message conveying affective meanings in which the affective attitude (i.e., liking or disliking) conveyed by one channel is perceived to be discrepant with or contrary to the attitude conveyed by the other channel.

All subjects were presented the independent facial and verbal stimuli and asked to rate the affective attitude expressed by the sender toward an imagined receiver. These ratings were made on 7-point scales ranging from "dislikes very much" (1) to "likes very much" (7) with a midpoint of "neutral" (4). In addition, ratings were obtained to indicate the degree of decoding difficulty of each of the stimuli. For this purpose, 5-point scales were employed which ranged from "easy" (1) to "hard" (5) with "average" (3) at the midpoint. A few days after the presentation of the one-channel facial and verbal stimuli, subjects were presented the same stimuli in the form of 16 combined two-channel inconsistent messages. They were again asked to rate the communicated affect (disliking-liking) as well as the relative decoding difficulty (easy-hard).

Since each subject rated both the independent and combined stimuli, it was possible to determine the relative primacy or weight proportioned by each person to the facial and verbal channels in decoding inconsistent messages. For

example, if the rating of each of the independent facial and verbal stimuli is designated F and V respectively, and the rating of each two-channel inconsistent stimuli is designated I, then a measure of the relative primacy of the two channels for decoding each message which is perceived to be inconsistent can be represented as follows: $\text{Weight} = |I - V| - |I - F|$. When this quantity is larger than zero, the primacy of facial cues for decoding inconsistency is indicated, since in this case the rating I would be located closer on the 7-point scale to F than to V. When the quantity, weight, is less than zero, the primacy of verbal cues is indicated since I would be located closer to V than to F. Finally, when weight is equal to zero a situation exists in which I is located midway between F and V on the 7-point scale, indicating the primacy of neither facial nor verbal cues for decoding the particular inconsistent message.

Computing each subject's mean weight across all those messages perceived as inconsistent permits a determination of each individual's implicit strategy for combining the facial and verbal channels of an inconsistent message. It should be noted that the present study requires that only those messages which the adolescent subjectively perceives as inconsistent should be defined as such. Therefore, no rating or weight was recorded for those two-channel messages which, on the basis of the independent facial and verbal affective ratings, the adolescent perceived to communicate either liking or

disliking in both channels. As a result, mean ratings and weights for each item were generally based upon fewer than 46 normal and 29 delinquent adolescents, since all persons did not necessarily perceive each two-channel message as inconsistent.

Role-Taking/Socialization. The Socialization (So) Scale of the California Psychological Inventory (CPI) (Gough, 1975) was empirically constructed to identify individuals possessing asocial or delinquent tendencies. The theoretical framework underlying item selection was Gough's application of the role-taking theory of Mead (1934) to explain delinquency or psychopathy. The scale was later revised to classify persons along a continuum of socialization ranging from highly asocial, impulsive, and insensitive to the feelings of others on one end to highly socialized, circumspect, and interpersonally responsive on the other. This scale, consisting of 54 true-false items, has demonstrated impressive validity in an abundance of investigations (see Megargee, 1972). A number of studies have demonstrated that the So Scale taps a variety of aspects of role-taking and socialization. Rosen and Schalling (1974), for example, arranged 53 So items into six distinct factors which may be assumed to comprise the multidimensional construct of role-taking/socialization. These factors were identified as: Positive Interpersonal Experiences, Conformity and Observance of Convention, Evaluation Anxiety, Low Self-Regard, Superego

Strength, and Poise vs. Dysophoric Moods and Paranoid Attitudes. The present study investigated these various subscales in order to achieve a more refined differentiation of the construct and its relationship to patterns of social adjustment than could be achieved on the basis of the total So score alone.

Self-Image. All subjects were administered the Offer Self-Image Questionnaire (OSIQ), a 130-item self-administered questionnaire measuring 11 content areas considered critical to the psychological understanding of the adolescent. These 11 scales are: Impulse Control, Emotional Tone, Body- and Self-Image, Social Relationships, Morals, Sexual Attitudes, Family Relationships, Mastery of the External World, Vocational and Educational Goals, Psychopathology, and Superior Adjustment. In administrations to over 10,000 subjects, this questionnaire has demonstrated its ability to discriminate adolescents of varying ages, cultural backgrounds, socio-economic statuses, and levels of psychological adjustment (see Offer, Ostrov, & Howard, 1977). In the present study three scales of the OSIQ, Sexual Attitudes, Family Relationships, and Vocational and Educational Goals, were excluded a priori from the statistical analyses due to their psychometric limitations or their lack of theoretical relevance in the present context.

Machiavellianism. The 20-item Nachamie Children's Mach Scale (Kiddie Mach) represents a reconstruction of Christie's Adult Mach IV Scale such that the vocabulary, structure, and content of the items and the response categories are more easily comprehended by children and early adolescents (Nachamie, 1966). The items of this scale may be subdivided according to whether they relate to Views of Human Nature, Attitudes Toward Interpersonal Tactics, or Abstract Moral principles. The Kiddie Mach has shown itself to be more comprehensible than the Mach IV when administered to sixth-graders. Its reliability is consistent with that of the Mach IV with which it is significantly correlated. Finally, Nachamie (1966) has demonstrated that while the endorsement of Machiavellian attitudes is less pronounced among children, such attitudes do exist at this time of life in a sufficiently differentiated form to be measured and to serve as reliable predictors of certain forms of manipulative behavior.

Distractibility. Since distractibility is defined as a decrement or change in one's performance due to the presence of extraneous data, it was assessed in this study by comparing the ratings of the one-channel facial and verbal stimuli discussed above to a subsequent presentation of each of these stimuli accompanied by the other. In both conditions the instructions required a rating of only one channel of the message, but while in the first instance the other channel was

also present, but extraneous to the task. Thus, a measure of distractibility may be obtained by simply computing the difference between ratings of the one-channel stimuli alone (i.e., F or V) and the ratings of the same stimuli accompanied by a distracting stimulus of the other channel (i.e., F_d or V_d). Thus, distractibility would be measured by $|F - F_d|$ with the verbal channel as a distractor and by $|V - V_d|$ with the facial channel as a distractor.

Procedure

All persons participating in this study were tested during two separate sessions in groups small enough (from 6 to 25 persons) to allow adequate supervision by two examiners. During the first session, subjects were first administered a brief demographic data sheet. Then the OSIQ, facial, and verbal stimuli were administered in counterbalanced order. A second session was held from one to seven days later, during which the Kiddie Mach, So scale, and the two-channel inconsistent stimuli were administered, again in counterbalanced order. At the end of this second session, subjects were administered the distractibility task. An additional counterbalancing occurred such that half of the persons in each group were presented the sessions in the order described above, while for the other half the order of the two sessions was reversed.

For the administration of the facial, verbal, and inconsistent affective communications, subjects were told that the experimenter was concerned with how individuals judge the

expressions and feelings of others. All of the facial, verbal, and inconsistent messages were projected on a screen. Subjects were asked to evaluate the degree of positive or negative feelings expressed by the communicator toward an imagined receiver on the 7-point scale ranging from "dislikes very much" to "likes very much." They were also asked to rate the degree of difficulty experienced in decoding all of the affects on the 5-point scales ranging from "easy" to "hard."

The So Scale, Kiddie Mach, and OSIQ are self-administered paper and pencil scales requiring a minimum of supervision. Intelligence scores were obtained from institutional records. Stanine scores were obtained for the normal group on the School and College Ability Test (SCAT), while for the delinquents, IQ scores on the revised version of the Weschsler Intelligence Scale for Children (WISC-R) were obtained and converted to stanine scores. Additional information was gathered on the demographic data sheet, including: sex, age, race, number of parents in the home, parents' occupations and highest educational level, and, in the case of the delinquents, length of hospitalization. Diagnoses, for classification into normal or delinquent groups, were determined from teacher and self-reports for the normal group and from hospital records and staff consultations in the delinquent group.

Methods of Statistical Analysis

The focal concern of the present study was to examine the psychometric responses of two groups of adolescents (normals and delinquents) and to compare these groups on a number of distinct variables in order to determine which of these variables proved most promising for predicting group membership. To accomplish this end, data reduction techniques were employed.

Initially, the variables were conceptualized as falling into three structural or functional sets (see Table 1). The first functional set contained five variables related to Affective Role-Taking and Distractibility: mean ratings of facial, verbal, and inconsistent stimuli, the relative primacy (or weight) of facial or verbal cues for decoding inconsistent messages, and the degree of distractibility due to the presence of extraneous affective cues. The second functional set, Interpersonal Orientation, reflects psychosocial traits which may be presumed to be related to the way in which individuals perceive and interpret affective cues. This set was composed of the measures of Machiavellianism and Socialization, as well as a number of subconstructs subsumed under each. The final grouping of variables was the structural set, Self-Image, which includes eight of the subscales of the OSIQ.

A multiple regression analysis was performed on each of the variable sets in order to empirically ascertain the

Table 1
Variable Sets

- I. Affective Role-Taking/Distractibility
 - a. Affective Ratings
 - 1. Facial
 - 2. Verbal
 - 3. Inconsistent
 - b. Channel Primacy
 - 4. Weight
 - c. Attention
 - 5. Distractibility
- II. Interpersonal Orientation
 - a. Socialization/Role-Taking
 - 6. Positive Interpersonal Experiences
 - 7. Conformity and Observance of Convention
 - 8. Evaluation Anxiety
 - 9. Low Self-Regard
 - 10. Superego Strength
 - 11. Poise vs. Dysphoric Moods and Paranoid Attitudes
 - b. Machiavellianism
 - 12. Views of Human Nature
 - 13. Interpersonal Tactics
 - 14. Abstract Morality
- III. Self-Image
 - 15. Impulse Control
 - 16. Emotional Tone
 - 17. Body- and Self-Image
 - 18. Social Relationships
 - 19. Morals
 - 20. Mastery of the External World
 - 21. Psychopathology
 - 22. Superior Adjustment

relative contribution of each variable within the set to discriminate between the normal and delinquent groups. In this manner, the sheer number of variables was reduced thereby enabling further analyses. After the multiple regression techniques isolated the most influential variables within each of the three sets (i.e., those variables with the largest beta weights), these variables were entered into a two-group discriminant analysis which solved for a set of weights producing maximal discrimination between the groups.

The obtained discriminant function was then evaluated as to how accurately it differentiated the normal adolescents from the delinquents. Since the actual group membership was known for each subject, the method of evaluation consisted of predicting group membership based on the just calculated discriminant function and comparing this to actual group membership. In order to obtain the predicted group classification for each adolescent, his or her score on each variable was multiplied by the respective unstandardized discriminant coefficient. These products were then summed, along with the constant for the equation, to form the adolescent's discriminant score. If this score was below a specific optimum cut-off value given by the discriminant function, the subject was classified as a member of the group at the lower end of the discriminant dimension. If it fell above the cut-off value, the group at the higher end was predicted. In this manner, the discriminant function was evaluated in terms

of the numbers of "hits" (correct classifications) and "misses" (misclassifications) that it produced.

In addition to these data reduction techniques, four exact least-squares analyses of variance (ANOVAs) were executed. Separate $2 \times 2 \times 3$ (sex \times group \times type of message) split-plot factorial ANOVAs were performed upon the mean ratings of affect (disliking-liking) and decoding difficulty (easy-hard) of the facial, verbal, and inconsistent messages. The mean facial and verbal ratings were taken across all of the 16 facial and 16 verbal stimuli, respectively, while the mean ratings of the inconsistent messages were taken across only those stimuli where channel inconsistency was perceived by the adolescent. The ANOVAs conducted upon these mean ratings constituted repeated measures ANOVAs due to the fact that all persons were administered each of the three message types (i.e., facial, verbal, and inconsistent), but they did not serve in both levels of group classification (i.e., subjects were nested within groups). A 2×2 (sex \times group) two-way ANOVA was also conducted to identify significant differences between groups in the primacy of facial or verbal cues for decoding inconsistent messages. Finally, a $2 \times 2 \times 2$ (sex \times group \times distractor channel) ANOVA was conducted to detect differences between normal and delinquent adolescents in their distractibility due to extraneous verbal or facial cues. Subsequent to the execution of these ANOVAs, Scheffé's ratios were performed in order to determine the particular sources contributing to the statistically significant F ratios.

CHAPTER IV

RESULTS

Prior to investigating the experimental hypotheses, a number of analyses were conducted in order to select normal and delinquent groups equivalent for sex, age, intelligence, SES, and race. These analyses resulted in the selection of 75 subjects from the 170 adolescents tested. Taken as a whole, this group averaged 16.2 years of age, had a mean IQ score in the Average Range (approximately 99), and was primarily from the lower-, middle-, and upper-middle classes. The male: female ratio of the group was approximately 1:2 and in racial composition there were nearly five white adolescents for every nonwhite.

Comparisons of the Groups

A composite summary of the characteristics of the normal and delinquent adolescents of this study is presented in Table 2. Each of the five demographic variables of this table was subjected to separate statistical analyses to test the null hypothesis that the characteristics of these two groups were not significantly different. The results of a chi-square analysis demonstrated that the relative proportion of males-to-females did not differ significantly across the two groups, $\chi^2(1) = 1.91$. Likewise, with respect to

Table 2
Demographic Characteristics of the
Normal and Delinquent Groups

<u>Characteristic</u>	<u>Normal Group (N=46)</u>		<u>Delinquent Group (N=29)</u>	
	<u>N</u>	<u>Percent</u>	<u>N</u>	<u>Percent</u>
Sex: Male	12	26.1	12	41.4
Female	34	73.9	17	58.6
Race: White	38	82.6	24	82.8
Black	7	15.2	5	17.2
Other	1	2.2	0	0.0
SES: I	6	13.0	3	10.3
II	12	26.1	2	6.9
III	12	26.1	7	24.1
IV	12	26.1	12	41.4
V	4	8.7	5	17.2
Mean Age: (years)	16.3		16.1	
Mean IQ: (stanines)	4.6		5.1	

racial composition, no significant difference was found between the normal and delinquent groups, $\chi^2 (2) = 0.71$. A final chi-square analysis was conducted to detect possible differences between the two groups in proportions of persons represented in each of Hollingshead's (1957) five SES categories, which represent a progression of descending social status. The groups were again found not to differ significantly in composition with respect to SES, $\chi^2 (4) = 6.03$. A comparison of the mean age of the normal and delinquent groups (see Table 2) revealed that they were not significantly discrepant, $t (73) = 1.01$. Finally, no significant differences were found across groups in mean intelligence scores, $t (73) = 1.13$.

Discrimination of Normal and Delinquent Groups

As was described above, each of the three variable sets of the present study was subjected to a multiple regression analysis in order to isolate a reduced variable set for subsequent inclusion in a two-group discriminant function analysis. This method insures a ratio of subjects-to-variables sufficiently large to generate meaningful results from the discriminant function analysis. On the basis of the standardized regression coefficients (i.e., beta weights) listed in Table 3, the variable, Inconsistent Ratings, was isolated from the other variables of the first functional set (Affective Role-Taking/Distractibility) as the strongest predictor of group classification. In the

Table 3
Multiple Regression Analysis of the
Affective Role-Taking/Distractibility Variables

<u>Variable</u>	<u>Regression Coefficient</u>	
	<u>Unstandardized</u>	<u>Standardized</u>
Facial Ratings	.015	.011
Verbal Ratings	-.076	-.058
Inconsistent Ratings	.451	.484
Channel Primacy	-.036	-.091
Distractibility	-.050	-.057
(Constant)	.328	- -
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Multiple R	.496	
R^2	.246	
Standard Error	.441	
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second functional set, Interpersonal Orientation, three variables, Positive Interpersonal Experiences and Superego Strength from the So Scale and Interpersonal Tactics from the Mach Scale, were selected as the strongest predictors of the dependent variable (see Table 4). From the structural set pertaining to Self-Image, the multiple regression analysis identified Emotional Tone and Mastery of the External World as the most influential variables for determining normal and delinquent group classification (see Table 5). It should be noted that the beta weight for the variable Evaluation Anxiety is larger than that for Mastery of the External World, and yet the latter variable was selected for inclusion in the discriminant function analysis while the former was not. This is explained by the fact that beta weights are meaningful only in the context of those variables in relation to which they were derived. Comparison of beta weights derived from separate regression analyses, therefore, is not warranted.

The resultant reduced variable set, consisting of six variables, Inconsistent Ratings, Positive Interpersonal Experiences, Superego Strength, Interpersonal Tactics, Emotional Tone, and Mastery of the External World, was then subjected to a Box's M test. This was done in order to evaluate the equality of the variance-covariance matrices of the normal and delinquent groups, since Gilbert (1969) has shown

Table 4
Multiple Regression Analysis of the
Interpersonal Orientation Variables

<u>Variable</u>	<u>Regression Coefficient</u>	
	<u>Unstandardized</u>	<u>Standardized</u>
Positive Experiences	.041	.215
Conformity	.003	.013
Evaluation Anxiety	.058	.164
Low Self-Regard	-.067	-.142
Superego Strength	.092	.441
Poise	.035	.087
Views of Human Nature	.020	.147
Interpersonal Tactics	.037	.238
Abstract Morality	-.051	-.159
(Constant)	-.295	- -
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Multiple R	.748	
R ²	.560	
Standard Error	.347	
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Table 5
Multiple Regression Analysis of the
Self-Image Variables

<u>Variable</u>	<u>Regression Coefficient</u>	
	<u>Unstandardized</u>	<u>Standardized</u>
Impulse Control	.011	.019
Emotional Tone	-.344	-.551
Body and Self-Image	.040	.057
Social Relationships	.054	.077
Morals	-.067	-.094
Mastery	.128	.160
Psychopathology	.011	.016
Superior Adjustment	-.016	-.020
(Constant)	2.033	- -
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Multiple R	.451	
R ²	.203	
Standard Error	.463	
<hr/>		

that the accuracy of a linear discriminant function is reduced when these matrices are not equal. This test found the variance-covariance matrices of the normal and delinquent groups to be significantly different, $\underline{M} = 49.395$, $\underline{F}(21,13091) = 2.128$, $p < .002$.

In much the same way as a \underline{t} test is adjusted when variances are unequal in a univariate comparison, it was necessary to modify the multivariate discriminant function analysis due to this inequality of the variance-covariance matrices. As a result, a quadratic, rather than a linear, discriminant function analysis was performed in order to compensate for this difference. For this analysis, the prior probability of belonging to either the normal or delinquent group was chosen to be 50:50. Since the proportion of the population designated as delinquent is unknown, however, the present estimate of 50% undoubtedly decreases the ability of the discriminant function to differentiate the two groups. In spite of this limitation, the two-group quadratic discriminant function revealed a highly significant discrimination between normal and delinquent adolescents, eigenvalue = 1.413, \underline{r} canon. = 0.765, $\chi^2(6) = 61.673$, $p < .00005$. Table 6 presents the discriminant function coefficients for each of the final six variables as well as the group centroids on the discriminant dimension. From the group centroids it may be seen that the normal group was located at the positive end of the discriminant dimension

Table 6
Discriminant Function Coefficients
and Group Centroids

<u>Variable</u>	<u>Discriminant Coefficient</u>	
	<u>Unstandardized</u>	<u>Standardized</u>
Positive Experiences	.142	.299
Superego Strength	.426	.751
Interpersonal Tactics	.061	.195
Inconsistent Ratings	.905	.419
Emotional Tone	-.334	-.240
Mastery	.843	.516
(Constant)	-9.033	- -

<u>Group</u>	<u>Centroid</u>
Normal	.931
Delinquent	-1.477

and the delinquent group at the negative end. Positive discriminant function coefficients, therefore, are characteristic of the normal adolescents, while negative coefficients are characteristic of the delinquents. On the basis of the standardized discriminant function coefficients in Table 6, it is apparent that Superego Strength, Mastery of the External World, and Inconsistent Ratings were the most influential variables for discriminating the two groups. From the signs of the discriminant function coefficients of these three variables it may be seen that high scores on each dimension were characteristic of the normal group and low scores were characteristic of the delinquent group. However, since high scores on Mastery of the External World have generally been characteristic of delinquent, rather than normal, groups, the current finding for this measure was somewhat unexpected.

Though the discriminant function was clearly statistically significant, it was further evaluated with respect to its accuracy in predicting group membership. The results of this evaluation are presented in Table 7. From this table it may be seen that 96.6% of the delinquents and 82.6% of the normals were correctly identified by the discriminant function. Though this constituted an overall "hit" rate of 88.0%, it is clear that the discriminant function was more effective in identifying delinquents than it was in identifying normal adolescents.

Table 7
 Classification of Adolescents by
 Actual vs. Predicted Group Membership

<u>Actual Group Membership</u>	<u>Predicted Group Membership</u>		
	<u>Normal</u>	<u>Delinquent</u>	<u>Total</u>
Normal	38 (82.6%)	8 (17.4%)	46 (100.0%)
Delinquent	1 (3.4%)	28 (96.6%)	29 (100.0%)

Total percent correctly predicted = 88.0%

Qualitative Analysis of Misclassified Adolescents.

In order to ascertain a possible basis for one delinquent and eight normal adolescents having been misclassified by the discriminant function analysis, qualitative reports were solicited from their respective treatment team and high-school teacher. The one misclassified delinquent was compared with five randomly selected delinquents who had been correctly classified. When these six names were presented to the leader of the treatment team, who was unaware of the purpose of the task, the adolescent who had been identified as normal by the discriminant function was selected as the most psychologically well-adjusted.

In contrast to the other five delinquents, she was described as: more insightful, more verbal, having greater affective stability, assuming more leadership, demonstrating self-direction, better able to hold a job, and in general exhibiting greater "ego-strength."

Similarly, the teacher who was familiar with the eight normal adolescents misclassified as delinquent was asked to sort these students and eight other randomly selected participants into three groups: well-adjusted, poorly adjusted and intermediate. As above, the teacher was unaware of the purpose of the task. Of the eight misclassified adolescents, four were sorted into the poorly adjusted category by their teacher, one into the well-adjusted category, and three into the intermediate category on the basis of their being too shy and

quiet to permit an absolute categorization. Of the eight correctly classified normal adolescents, four were placed in the well-adjusted category and one into the poorly-adjusted category, with the functioning of three seen to be at an intermediate level. Relative to the eight normal adolescents who were correctly classified, those who were misclassified tended to be described as somewhat less intelligent, not so well motivated, much more quiet and withdrawn, socially less successful, and generally lacking initiative, determination, and a will to succeed. Descriptions of these misclassified adolescents included: "totally unorganized, life is a bit much for her," "social isolate," "angry," "very quiet," "cuts classes a lot," "had a lot of problems, decided to transfer out of school," "afraid to try," "get the feeling he's into a lot of dope," and "kind of a loner." By way of further contrast, the one correctly classified normal adolescent whose teacher sorted her into the poorly-adjusted category was described as active, verbal, and socially, though not academically, successful; the one misclassified normal adolescent whose teacher had sorted her into the well-adjusted category had been described as a very quiet girl who speaks only when spoken to, but who is quite responsible and "manages to get by." For this contrast as for those above, then, the misclassified normal adolescents appear more withdrawn and socially inadequate than those who were correctly classified by the discriminant function.

Affective Role-Taking

As was described earlier, the facial and verbal stimuli which comprised the affective role-taking measure were developed in a prior investigation (Lani, Doheny, & Curtiss, 1979). These stimuli had been rated by a group of 43 college students and these preratings constituted the basis upon which the facial and verbal stimuli were combined into the 16 two-channel inconsistent communications of the present investigation. The mean affective and difficulty ratings of the facial, verbal, and inconsistent stimuli of the present study may be found in Tables 8, 9, and 10 respectively. From Table 10 it may be seen that, with the exception of stimuli #7 and #11, the large majority of persons in both the normal and delinquent groups did in actuality perceive the channels of the inconsistent messages to be inconsistent. The affective ratings presented in Tables 8, 9, and 10, when represented as each adolescent's mean rating for each message type (i.e., facial, verbal, and inconsistent), constituted the data for the 2 x 2 x 3 (sex x group x message type) ANOVA summarized in Table 11. It may be seen that significant main effects were found for group and message, as well as significant higher order interactions for group x message and sex x group x message. Scheffé's Ratios were performed for both male and females on each type of message in order to detect differences between groups. Delinquent males and females rated inconsistent messages as communicating more

Table 8

Mean Affective and Difficulty Ratings of the
Facial Stimuli by Normal and Delinquent Groups

<u>Stimulus</u>	<u>Sex of Stimulus Person</u>	<u>Mean^a Affective Rating</u>		<u>Mean^b Difficulty Rating</u>	
		<u>Normal</u>	<u>Delinquent</u>	<u>Normal</u>	<u>Delinquent</u>
1.	F	6.24	6.41	1.48	1.38
2.	M	1.65	1.31	1.70	1.69
3.	M	2.85	3.28	2.59	2.59
4.	F	5.76	5.62	2.13	2.03
5.	M	5.43	5.31	2.00	2.24
6.	F	2.70	2.69	2.61	2.79
7.	M	4.00	3.97	2.63	2.97
8.	F	1.89	1.76	1.78	1.90
9.	M	6.20	6.48	1.43	1.48
10.	M	2.22	2.14	2.37	2.28
11.	F	3.93	3.69	2.28	2.45
12.	M	5.59	5.93	1.78	1.66
13.	F	2.80	2.52	2.22	2.28
14.	F	3.09	2.86	2.59	2.24
15.	F	5.09	5.03	2.24	2.03
16.	M	3.61	3.83	2.54	2.28
Grand Mean		3.94	3.93	2.15	2.14

^aBased on a scale from 1 (dislikes very much) to 7 (likes very much) with a mid-point of 4 (neutral).

^bBased on a scale from 1 (easy) to 5 (hard) with a mid-point of 3 (average)

Table 9

Mean Affective and Difficulty Ratings of the
Verbal Stimuli by Normal and Delinquent Groups

<u>Stimulus</u>	<u>Mean Affective Rating^a</u>		<u>Mean Difficulty Rating^b</u>	
	<u>Normal</u>	<u>Delinquent</u>	<u>Normal</u>	<u>Delinquent</u>
1. I really can't believe you.	3.30	2.86	2.74	2.00
2. What are you going to do?	4.63	4.83	2.48	2.21
3. Wow, I can't believe it.	5.33	5.28	2.17	2.31
4. Please don't waste my time.	2.00	1.69	2.02	1.79
5. I'm sick and tired of you.	1.59	1.28	1.46	1.45
6. Let's go out and play.	5.91	6.72	1.72	1.48
7. You're not very good at that.	3.33	3.38	2.57	2.34
8. You're probably my best friend.	5.96	6.45	1.87	1.48
9. I wish you wouldn't do that.	3.41	3.21	2.78	2.45
10. I'll give you half of mine.	5.63	5.83	1.96	2.17
11. I don't care what you think.	2.00	2.17	1.98	2.10
12. You give me the creeps.	1.72	1.31	1.57	1.72
13. You're so much fun to be with.	6.41	6.52	1.33	1.48
14. Do you like my new coat?	4.74	4.93	2.30	2.34
15. Can't you see I'm busy?	2.76	2.86	2.48	2.62
16. Why don't you stay awhile?	5.41	6.31	1.83	2.07
Grand Mean	4.01	4.10	2.08	2.00

^aBased on a scale from 1 (dislikes very much) to 7 (likes very much) with a mid-point of 4 (neutral).

^bBased on a scale from 1 (easy) to 5 (hard) with a mid-point of 3 (average).

Table 10

Perceived Inconsistency and Mean Affective and Difficulty Ratings of
the Two-Channel Stimuli by Normal and Delinquent Groups

<u>Stimulus^a</u>	<u>Percentage of Perceived Inconsistency^b</u>		<u>Mean Affective Rating^c</u>		<u>Mean Difficulty Rating^d</u>	
	<u>Normal</u>	<u>Delinquent</u>	<u>Normal</u>	<u>Delinquent</u>	<u>Normal</u>	<u>Delinquent</u>
1.	86.9	96.6	5.60	4.57	2.55	2.61
2.	91.3	93.1	2.17	2.11	2.26	1.81
3.	82.6	75.9	3.89	3.86	2.71	2.59
4.	95.6	96.6	3.57	3.71	2.89	2.50
5.	89.1	96.6	4.20	3.50	2.61	2.68
6.	89.1	93.1	3.44	2.74	3.20	2.81
7.	56.5	62.1	3.54	3.22	2.73	2.61
8.	89.1	89.7	3.22	2.15	3.00	2.35
9.	78.3	89.7	5.56	4.92	2.36	2.62
10.	86.9	89.7	3.10	2.42	2.75	2.96
11.	63.0	48.3	3.31	2.21	2.07	1.57
12.	93.5	96.6	4.33	3.64	2.84	2.68
13.	89.1	96.6	3.24	2.61	2.51	2.61
14.	84.8	86.2	3.72	3.28	2.64	2.44
15.	93.5	93.1	4.16	3.81	2.44	2.22
16.	89.1	86.2	3.80	3.68	2.34	2.52
Grand Mean	84.9	86.9	3.80	3.28	2.62	2.47

^aThe numbers of the two-channel stimuli correspond to the numbers of their facial and verbal components.

^bMean scores were taken across only those instances in which inconsistency was actually perceived.

^cBased on a scale from 1 (dislikes very much) to 7 (likes very much) with a mid-point of 4 (neutral).

^dBased on a scale from 1 (easy) to 5 (hard) with a mid-point of 3 (average).

Table 11

ANOVA Summary Table of Mean Affective Ratings
as a Function of Sex, Group, and Type of Message

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Sex (S)	1	.01393	1.110
Group (G)	1	.09382	7.475**
S x G	1	.00110	.088
Error	71	.01255	- -
Message (M) ^a	2	.08412	14.646**
S x M	2	.00223	.388
G x M	2	.04047	7.046**
S x G x M	2	.01849	3.219*
Error	142	.00574	- -

^aThe three levels of message are facial, verbal, and inconsistent.

*
p < .05

**
p < .01

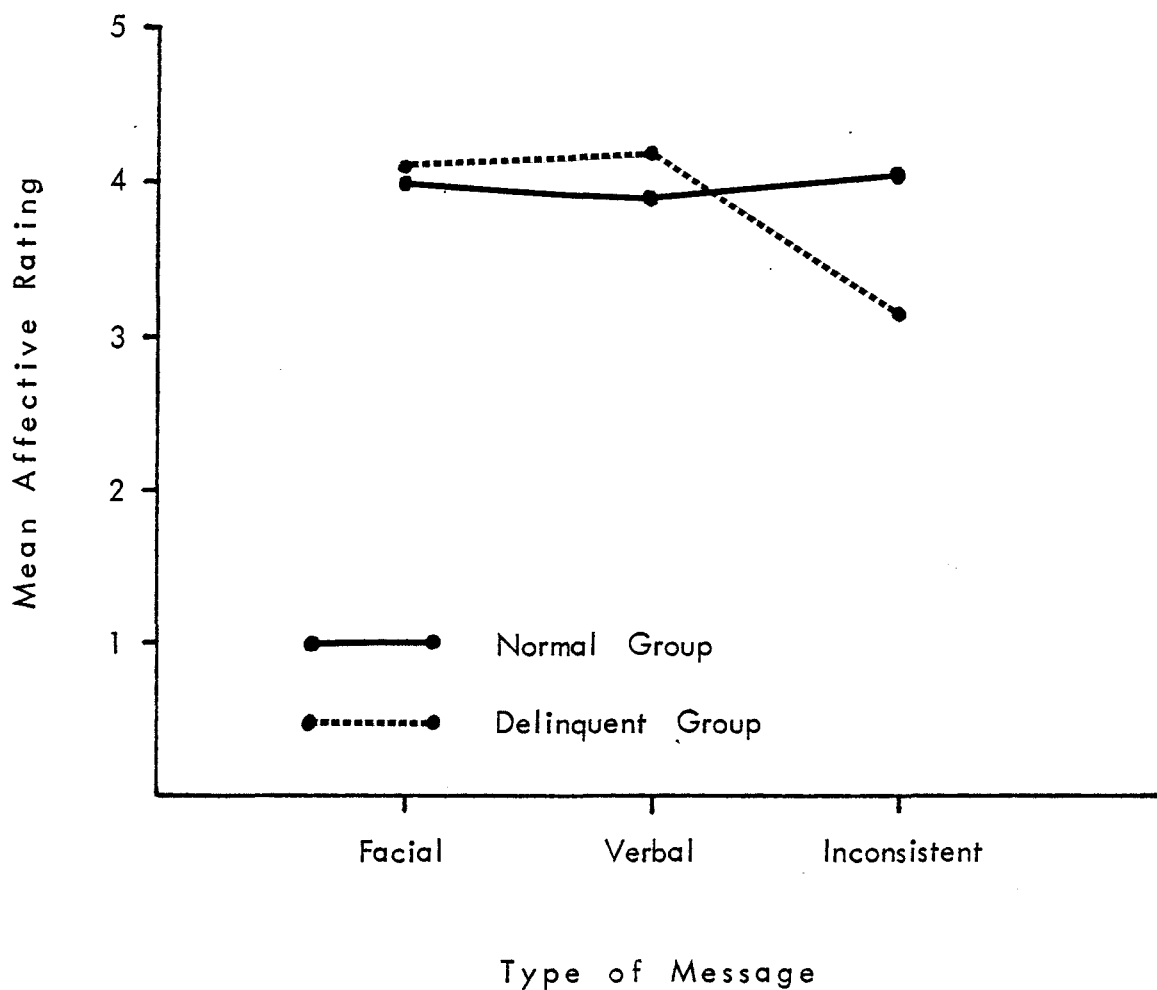
disliking than did their normal counterparts, $F(1,142) = 54.893$, $p < .001$ and $F(1,142) = 14.127$, $p < .001$, respectively. Also, with respect to normal males, the delinquent males rated verbal messages as communicating more liking, $F(1,142) = 5.500$, $p < .025$ (see Figure 1).

With respect to the hypothesis that normal adolescents would judge affective stimuli to communicate more positive feelings than would delinquents, these data suggest that this may be true only for the two-channel inconsistent messages (see Figure 1 and 2). In fact, the finding that delinquent males judge verbal expressions more positively than do normals suggests that with respect to the affective role-taking abilities of normal and delinquent adolescents, the issue may be far more complex than was hypothesized.

Decoding Difficulty

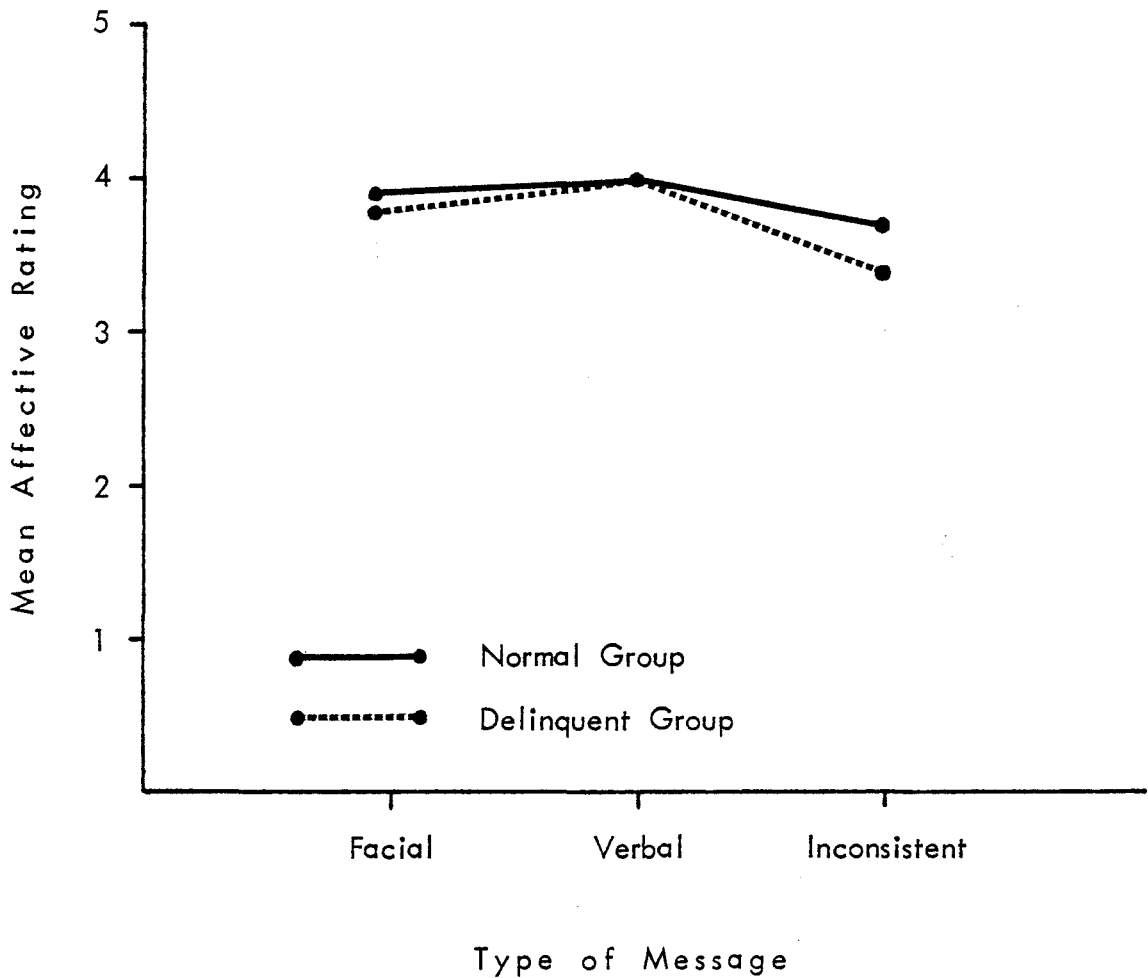
In order to test the hypothesis that inconsistent messages were more difficult to decode than other messages especially for delinquents, the mean difficulty ratings were subjected to a $2 \times 2 \times 3$ (sex \times group \times message) ANOVA analogous to the ANOVA conducted on the affective ratings. As is shown in Table 12, a significant main effect was found for the type of message. Post-hoc tests indicated that two-channel inconsistent messages were seen to be more difficult to decode than both facial and verbal messages, $F(2,142) = 39.111$, $p < .001$ and $F(2,142) = 58.256$, $p < .001$, respectively. This result may be seen clearly in Figure 3. With res-

Figure 1



Mean Affective Ratings by Males as a Function
of Group and Type of Message
(high scores denote greater liking)

Figure 2



Mean Affective Ratings by Females as a Function
of Group and Type of Message
(high scores denote greater liking)

Table 12

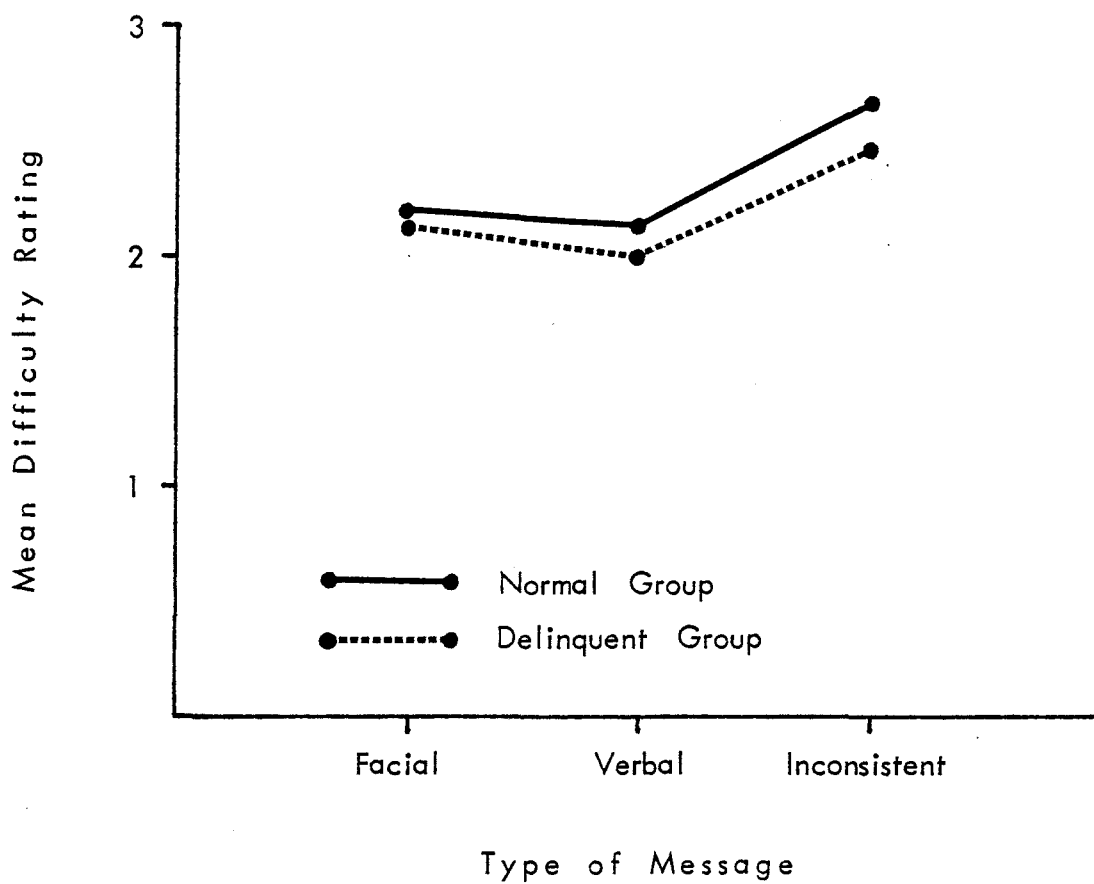
ANOVA Summary Table of Mean Difficulty Ratings
as a Function of Sex, Group, and Type of Message

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Sex (S)	1	.00211	.153
Group (G)	1	.00535	.387
S x G	1	.01120	.810
Error	71	.01382	- -
Message (M) ^a	2	.06531	22.695*
S x M	2	.00376	1.307
G x M	2	.00071	.247
S x G x M	2	.00336	1.168
Error	142	.00288	- -

^aThe three levels of message are facial, verbal, and inconsistent.

* $p < .01$

Figure 3



Mean Difficulty Ratings as a Function
of Group and Type of Message
(high scores denote greater difficulty)

pect to the hypothesis, it may also be seen that the expected group x message interaction was not found, suggesting that the delinquents did not have more difficulty than did normals in decoding messages which they perceived to be inconsistent.

Channel Primacy

It was hypothesized that in decoding inconsistent messages, normal adolescents would rely more heavily upon facial cues (facial primacy) while delinquents would rely more upon verbal cues (verbal primacy). The 2 x 2 (sex x group) ANOVA presented in Table 13 indicates that no significant differences were detected in the mean weight scores (i.e., $|I-V| - |I-F|$). It is apparent, then, that channel primacy did not differ either as a function of sex or group classification and that in this case the null hypothesis could not be rejected. In fact, the mean weights for the normal (+1.12) and delinquent (+0.99) groups indicate that both exhibited facial primacy as a preferred strategy for decoding messages inconsistent across the facial and verbal channels.

Distractibility

According to the final hypothesis of the present investigation, it was expected that in their ratings of target stimuli, delinquents would be more distracted than normals by the presence of extraneous affective stimuli. A 2 x 2 x 2 (sex x group x distractor channel) ANOVA was conducted upon mean distractibility scores (i.e., $|F-F_d|$ and $|V-V_d|$). Inspec-

Table 13
ANOVA Summary Table of Channel Primacy
as a Function of Sex and Group^a

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Sex (S)	1	.209	.137
Group (G)	1	.377	.247
S x G	1	1.677	1.098
Error	71	1.527	- -

^aChannel Primacy is the mean for each subject of the calculated weights (i.e., $|I-V| - |I-F|$) taken across all stimuli perceived to be inconsistent.

tion of Table 14 reveals a significant group x distraction channel interaction. Post-hoc tests indicated that the normal adolescents were more distracted than delinquents by extraneous facial cues, $F(1,71) = 7.856$, $p < .01$, while delinquents were more distracted by extraneous verbal cues, $F(1,71) = 7.526$, $p < .01$. This particular interaction may be clearly seen in Figure 4. Thus, though no differences were found between groups in the primacy of facial and verbal channels for decoding inconsistency or in overall distractibility, there was a clear difference found between groups in the relative saliance of facial and verbal cues as distractor stimuli.

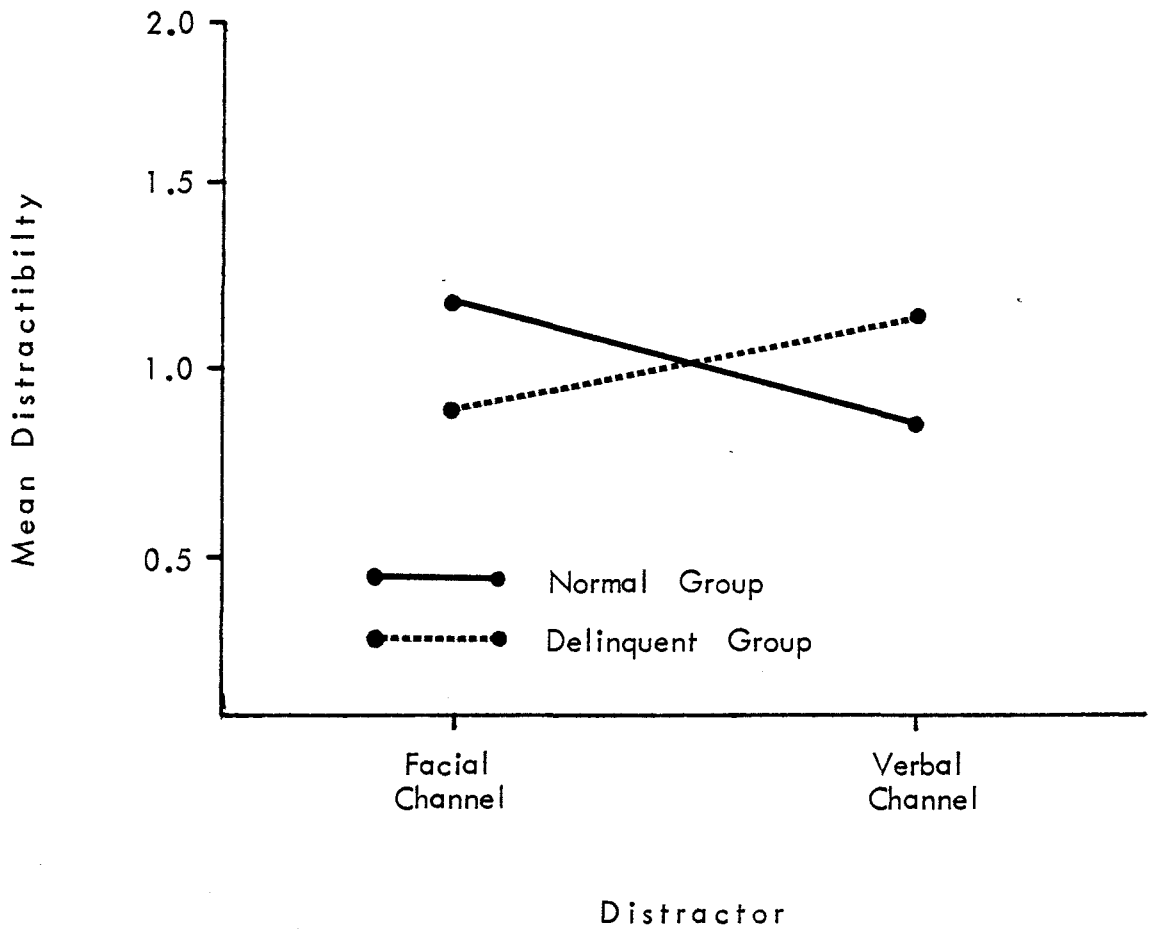
Table 14

ANOVA Summary Table of Mean Distractibility Scores
as a Function of Sex, Group, and Distractor Channel

<u>Source</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Sex (S)	1	.00017	.012
Group (G)	1	.00002	.001
S x G	1	.01634	1.180
Error	71	.01385	- -
Distractor (D)	1	.00392	1.042
S x D	1	.00012	.032
G x D	1	.03038	8.075*
S x G x D	1	.00002	.005
Error	71	.00376	- -

*
 $p < .01$

Figure 4



Mean Distractibility Scores as a Function
of Group and Distractor Channel
(high scores denote greater distractibility)

CHAPTER V

DISCUSSION

The results of the present study suggest that attributes pertaining to social and affective processes may be especially significant in differentiating normal from delinquent adolescents. The three variables identified as the most powerful predictors of normal versus delinquent group membership were highly efficient and accurate in classifying individual adolescents. In fact, even those few subjects who were incorrectly classified seem to have fallen into an intermediate category which might have justifiably qualified them as members of either group. Qualitative descriptions of these misclassified adolescents indicated that they differed from other members of the actual groups along a dimension of social competence and overall level of adaptation.

The role played by the major social-affective variables of this study in the formation of a delinquent mode of adaptation appears to be a good deal more complex than might have been anticipated. The finding that normal adolescents were superior to delinquents in Superego Strength seems both theoretically and intuitively correct. In contrast, the finding that the affective role-taking of delinquents differed from normals along only a single parameter (i.e., Inconsistent Ratings were more negative) is somewhat perplexing. The find-

ing that delinquents were superior to normals with respect to Mastery of the External World is similarly counterintuitive.

Superego Strength

The lower scores by delinquents on Superego Strength suggest deficits in the degree to which this group would recognize and endorse commonly accepted ethical standards and values. Relative to normal adolescents, the delinquents would be less inclined or able to assume the perspective of a "generalized other" (Mead, 1934), as well as less likely to have established realistic personal values and standards of behavior. They would be more inclined to be governed by their own personal satisfactions, less able to recognize conflicts between their own actions and the values of others, and less able to modulate themselves based upon anticipatory feelings of guilt or anticipated reactions of others. Concomitantly, it is likely that relative to the normal adolescent, the conscience of the delinquent is more poorly developed. (Conscience may be defined as the internalization of the praise, punishment, commands, scolding, and prohibitions of the parents and the larger social environment.) As a result, delinquents may be less able to experience genuine guilt or shame when they violate commonly accepted moral and ethical principles or they may be especially prone to unrealistic and chronic feelings of guilt from an overly rigid and primitive conscience. On the Superego Strength subscale of the Socialization scale

(So), delinquents were consequently more likely to endorse such items as "I often feel I have done something wrong or wicked" and less likely to endorse such items as I think I am stricter about right and wrong than most people."

The finding that Superego Strength was the most powerful of the variables studied for differentiating normal and delinquent groups is entirely consistent with a diversity of theoretical positions on delinquency (Freud, 1965; Jacobson, 1959; Jenkins, 1960; Johnson & Szurek, 1952; Mead, 1934). Redl and Wineman (1951), for example, while emphasizing the importance of the ego deficits of young delinquents, point strongly to the operation of superego deficits in this group. They take strong issue with the view that delinquents as a group are composed primarily of psychopathic individuals, noting that the notion of a "child without a conscience" is an erroneous one born of brief and artificial contacts via individual psychiatric interviews. Rather, they emphasized that among delinquent individuals any number of specific superego or conscience deficits may be identified. Three specific deficits identified by these authors were: (a) identification with value codes which are themselves delinquent, (b) inadequacy of the "value danger signal," which arises in anticipation of conflicts between one's values and impulses, and (c) insufficient ability to identify with other persons and to thereby internalize their values.

Mastery of the External World

The next most influential variable for discriminating the two adolescent groups was found to be Mastery of the External World. Contrary to previously derived norms for this scale of the Offer Self-Image Questionnaire (OSIQ), the delinquents of this study described themselves as possessing greater confidence and security in their abilities to deal with the vagaries of life than did normal adolescents. At first glance, this finding appears quite puzzling, however, the issue is considerably clarified by inspection of the items of this scale. The consistent and extreme endorsement of such items as "If I put my mind to it I can learn almost anything," "When I decide to do something, I do it," and "My work, in general, is at least as good as the work of the guy next to me" would seem to reflect cockiness, braggadocio or an overevaluation of oneself. These attitudes differ from a stable, modulated sense of mastery or self-confidence in that the latter is based upon the recognition of both strengths and deficits in oneself. The results of this study suggest that delinquent adolescents may maintain inflated self-evaluations in specific areas and that these views may be unrealistic given their actual level of competence. In future investigations, for example, one might expect to find considerable discrepancies within delinquent groups when one assesses similar attributes in a variety of ways (e.g., self-report measures versus projective tests versus behavior samples).

Viewing the results of the delinquent scores on Mastery of the External World as described above is consistent with views of delinquency which emphasize the grandiosity and omnipotence of the delinquent's self-conceptions (Aichorn, 1965; Kohut, 1977; Marohn, 1977). According to such viewpoints, delinquents maintain, either overtly or covertly, highly narcissistic and grandiose self-conceptions. This inflated view of oneself, however, masks the opposite, simultaneously held view, namely a profound sense of oneself as insignificant and inadequate. Delinquents are inclined then, to view others, not as separate and significant persons in their own right, but as potential admirers and as the means to further their own self-aggrandizement. This viewpoint further postulates that delinquents are impervious to the needs or even the presence of others unless they are fulfilling the delinquent's need for confirmation and admiration. Attachments to others are contingent upon the degree to which the other person satisfies the delinquent's quest for confirmation of very tenuously and unrealistically held views of self-worth and self-importance.

This finding also has relevance for particular clinical and theoretical notions regarding the psychopathology of those persons most likely to exhibit a primarily delinquent adaptation during adolescence. It will be remembered that the overwhelming majority of the delinquents of this study were primarily personality disordered and that of these again

the overwhelming majority was seen as presenting borderline or narcissistic pathology. The preponderance of these diagnoses in the present study may be due to any number of factors, including: (a) psychotic and organic pathologies were eliminated on an a priori basis, (b) neurotic and sociocultural forms of delinquency were most likely underrepresented as a result of the hospital settings, (c) the diagnosis of antisocial personality has been defined much more stringently than in the past and is very infrequently employed, in addition, such persons are more likely to be found in correctional facilities, among adults, and in groups less likely to seek psychiatric assistance, and (d) the current focus in the clinical literature upon borderline and narcissistic pathology has tremendously increased our understanding of delinquent symptomatology. In discussing such persons, Kernberg (1975) stated "the presence of extreme contradictions in their self-concept is often the first clinical evidence of the severe pathology in the ego and superego of these patients" (p. 245). According to this view, then, the finding that delinquents view themselves as highly confident and competent (i.e. - low scores on Mastery) while also reporting disturbances in mood or affect (i.e., high scores on Emotional Tone) seems somewhat more comprehensible. The results of this study on the whole seem to substantiate the view that delinquents differ from other groups in at times theoretically troubling and seemingly contradictory ways. It appears, in fact, that it

is the very unevenness of their functioning which may be the most definitive characteristic of delinquents.

Decoding Inconsistent Messages

The third important variable in the discrimination of the normal and delinquent groups of the present study was found to be the Inconsistent Ratings. Though the two groups did not significantly differ in their ratings of affective messages communicated via facial expressions and verbal content, delinquents did exhibit a tendency to evaluate inconsistently communicated affects more negatively than did normal adolescents. Since delinquents were able to perform in much the same fashion as were the normal adolescents in decoding one-channel cues, it is clear that a blanket deficiency model of delinquency is not appropriate. As with self-concept, delinquents appear to exhibit an unevenness of performance in affective role-taking ability with respect to normal adolescents.

Such variable functioning is consistent with those previously mentioned conceptions which emphasize the delinquent's variable ability to comprehend the affective states of others (Guterman, 1970; Hare, 1970). This conception is perhaps best summarized by Redl and Wineman (1951). These authors view the delinquent as exhibiting an amazing degree of "acuity of social perception in battle-relevant areas," while simultaneously "they also show most severe disturbances of this same function in certain other areas, toward certain

people, and under specific conditions" (p. 145). An implication for future research, then, is the need for very careful and systematic efforts to precisely delineate the ways in which delinquent (or narcissistic and borderline) pathologies disrupt the typical course of social and affective perception. Special attention in such research should be focused upon the contexts in which the delinquent's specific strengths and deficits are likely to occur.

With regard to the tendency of delinquent adolescents to view inconsistent messages as more negative than do normals, a variety of viewpoints may be relevant. Based upon the findings of a study concerning the perception of inconsistent messages, Bugental, Kaswan, and Love (1970) concluded that "children, when confronted with a conflicting message, resolve the incongruity by assuming the worst" (p. 655). Thus, there does exist some evidence to suggest that the tendency of the delinquents of the present study to construe inconsistent messages more negatively than do normals is an indication of a particular developmental lag or delay with respect to this ability. This would be true to the extent that their response to inconsistent messages is normally more characteristic of persons of a younger age. It would appear, however, that this particular developmental lag is evident only under stimulus conditions representing a fair amount of complexity or ambiguity. This interpretation is supported by the observation of Rosenthal, Archer, Koivumaki, Di Matteo,

and Rogers (1974) that low So scorers were superior to high scorers in decoding briefly presented stimuli while the opposite held true when the length of presentation was extended. The authors attributed this result to the low So scores (i.e., persons with delinquent tendencies) having been overwhelmed by the amount and complexity of data which became available in the longer presentations. It is likely, then, that delinquents, when confronted with the complexity of multi-channel inconsistent affective messages, are more prone than normals to employ less sophisticated or more regressive strategies (i.e., partial discounting of positive affective cues) for decoding their meaning.

From a clinical perspective, this phenomenon is undoubtedly related to the propensity of borderline and narcissistic personalities to devalue other persons. According to Kernberg (1975), devaluation of others is a corollary to the grandiosity of these individuals. Feeling themselves to be special and privileged people worthy of unlimited gratification and homage, borderline and narcissistic characters are prone to devalue or dismiss those people who do not satisfy their need to be admired. They are overreactive to real or imagined slights or criticism from others. Yet, these persons are able to maintain smooth and effective, though somewhat shallow, social relationships, as indicated by their appropriate levels of effective role-taking under conditions of simple, straightforward communications. Despite this relatively stable and intact functioning, the de-

linquents' performance deteriorates under stress or when subjected to inconsistency. When the delinquent notes inconsistency in the behavior of the other, (which according to clinical conceptions would be perceived as threatening to interfere with expected gratification and admiration), devaluation of the intent of the other is a likely result. Phenomenologically, delinquents may feel that they can pierce through the inconsistency, intuit the suspected insincerity beneath the positive affect, and uncover the supposed negative intent of the communication. In the present study, then, the more negative evaluations by delinquents of the inconsistent stimuli may be explained as a devaluation of the communication brought on by delinquents' wariness or uneasiness in the face of behavior which is ambiguous and which can then be viewed as untrustworthy and negative.

Decoding Difficulty

That the delinquents of this study did not find inconsistent messages more difficult to decode than did normals, was also contrary to prediction. It was anticipated that delinquents would experience a greater degree of subjective stress in decoding these messages based on the assumption that delinquents have experienced more inconsistency and double-binding situations throughout their development (Ferreira, 1960). The present study indicated that inconsistent messages were seen as the most difficult to decode by both groups, and that facial and verbal cues were rated at

equivalent levels of decoding difficulty by both groups. This result contradicts the theoretical and empirical stance of Mehrabian (1971), who holds that inconsistency across channels of an affective communication is quite easily decoded. While the results of this study and a previous investigation (Lani, Doheny and Curtiss, 1979) have noted the inherent difficulty for the adolescent in decoding inconsistent messages, it remains to be demonstrated whether exposure to such messages over time in the context of binding personal relationships can be implicated in the etiology of psychopathology (Bateson, Jackson, Haley, & Weakland, 1956; Ferreira, 1960).

Channel Primacy

An additional hypothesis of the present study, in line with an overall deficiency model of delinquency, was that normal adolescents would exhibit facial primacy as a strategy for decoding inconsistent messages, while delinquent adolescents would exhibit verbal primacy. Previous investigations have demonstrated that facial primacy is a developmentally more advanced strategy than is verbal primacy (Bugental, Kaswan, Love & Fox, 1970; Lani, Doheny & Curtiss, 1979), and it was postulated that delinquents would demonstrate developmental delays in affective role-taking relative to the normal adolescents. These developmental deficits were not evident in an across-the-board fashion, however, and with respect to channel primacy, no differences were observed between the two groups. When confronted with inconsistently

communicated affects, both delinquent and normal adolescents attended primarily to the facial channel to ascertain the meaning of the two-channel message. The results of the current investigation are congruent with those of Argyle, Salter, Nicholson, Williams, & Burgess (1970) and Mehrabian (1971) with respect to the question of channel primacy and inconsistency.

Distractibility

While delinquents did not tend to focus greater attention than did normals upon verbal cues for decoding inconsistency, this was indeed found to be the case for the distractibility task. When asked to ignore one channel of a two-channel communication, normal adolescents were more distracted by extraneous facial cues while delinquents were distracted by extraneous verbal cues. It appears, then, that while verbal cues constitute more potent distractors for delinquents, they are not perceived to be more salient indicators of affective meaning than are facial cues. Another finding which is relevant in this context is that delinquent males judged affects communicated verbally to be more positive than did either delinquent females or normal males and females. The implication of this finding considered in isolation is not clear, though it does tend to suggest that delinquent males may be somewhat more attuned to verbally transmitted affects, and, in that respect, are more similar to younger children.

However, taken as a whole, the obtained differences between normal and delinquent adolescents with respect to their levels of affective and social development, once again appear to be both more subtle and intricate than could have been anticipated given the current state of research in this area. Previous studies have revealed differences in affective role-taking and channel primacy with respect to age, but have not revealed uniform differences with respect to either sex or level of psychological adaptation. Though the normal and delinquent groups of this study were found to be significantly different in their levels of distractibility due to specific distractor channels, the hypothesized greater overall distractibility of delinquents was not substantiated. Recent reviews of this topic (Cantwell, 1978; Satterfield, 1978) have estimated that approximately 25% of all delinquents may reveal significant attention deficits. The methodological flaw of treating diverse personalities as though they constitute a monolithic personality type is thus implicated. The averaging of results across all of the members of a group with marked internal heterogeneity undoubtedly masked some highly pertinent intra-group differences. This limitation is always operative when studying a concept such as delinquency, the multidimensional nature of which has been repeatedly established (see review in Offer, Maroh, & Ostrov, 1979). It remains for future investigations to isolate and explore the significant intradelinquent differences and distinctions.

Such work has been attempted successfully by Schalling (1978), who identified meaningful subgroups of psychopaths using the So scale. In such a manner, it may be possible for future investigators to demonstrate the prevalence of attentional deficits in delinquents, the particular nature of these deficits, and their relation to the etiology of a delinquent adaptation.

Machiavellianism and Delinquency

Considerable attention has been devoted to the controversy over whether Machiavellianism and delinquency may be viewed as a converging dimension. The results of this investigation may be interpreted as in support of the Christie and Geis (1970) position that the propensity to "manipulate" is not necessarily indicative of psychopathology. Two of the three Mach subscales indicated that Machiavellian attitudes were more strongly endorsed by the normal, rather than the delinquent, adolescents. In fact, the Interpersonal Tactics scale was shown via regression analysis to be one of the six variables most predictive of membership in the normal group. Such a finding is consistent with previous investigations which have found such groups as clinical psychologists to be high Mach scorers (see Christie & Geiss, 1970). It appears, therefore, that Machiavellian attitudes and tactics in interpersonal relationships are an indication, not of psychopathology, but of a healthy and masterful adaptation to and understanding of the vicissitudes of human interactions.

Methodological Considerations

Counterbalancing. One factor which may have influenced the current findings with respect to distractibility was the particular counterbalancing strategy of this study. In all of the administrations the distractibility task was presented last. This was necessitated both by the complexity involved in totally counterbalancing all of the measures over two testing sessions and by the requirement that the inconsistency task not be previewed, as would have occurred by prior presentation of the two-channel stimuli via the distractibility task. Thus, the findings with respect to distractibility may have been unduly influenced by specific uncontrolled effects due to fatigue and order of presentation. Both of these factors may have served to increase distractibility due to the greater likelihood of attention deficits with increasing fatigue and because previous exposure to the distractor cues in the inconsistency task may have enhanced their salience or signaling power. Alternatively, the counterbalancing design of the present study may not necessarily have been disadvantageous. Though it increased the likelihood of overall distractibility being inflated, it insured that all persons would have had equivalent prior exposure to both the target stimuli and the distractors and that opportunities for fatigue effects would also have been equivalent (unless the groups happened to differ in their susceptibility to fatigue, which is unlikely). While the comparisons across normal and delin-

quent groups might have been distorted as to absolute level of distractibility, their relative levels of distractibility, upon which the present investigation focused, were likely not affected.

Limitations of Discriminant Function Analysis. With regard to the discriminate function analysis, a few caveats are in order. While this analysis demonstrated a high degree of accuracy (88.0%) in discriminating normal and delinquent adolescents, definite conclusions concerning such a finding should await further replication. One would expect shrinkage in the correct classification rate of the discriminant function upon replication with a new sample. Though the discriminate function was sufficiently robust to pursue with further replications, such replications are essential for identifying the limitations that this particular setting imposed upon the findings. This is especially important when multidimensional categories, such as delinquency, are treated as a single entity.

Additionally, throughout the results and discussion, several independent variables have been referred to as "predictors" of membership in either the delinquent or normal group. Strictly speaking, since these variables were not in fact measured prior to nor independently from the "outcome" variable i.e., delinquency vs. normalcy, they can not be considered predictors in the temporal sense. New samples are needed to replicate the relationships obtained here, as this

single sample is not a sufficient base for inferring prediction. As many of the relationships found were not predicted by a priori hypotheses and were somewhat paradoxical, the data are best utilized to generate hypotheses subject to further test.

Prior Probability of Group Classification. As noted earlier, arbitrarily establishing the probability of normal vs. delinquent group membership at 50:50, in all likelihood decreased the accuracy with which adolescents were classified by the discriminant function. One reason for this reduced accuracy is that without an accurate estimate of prior probability (i.e., base-rate), less information is available for predicting each adolescent's group classification or membership. It is likely, therefore, that the availability of accurate base-rate data would have increased the percentage of correctly classified adolescents. In fact this accuracy would also have been increased had the prior probability been established in proportion to the numbers of delinquent and normal adolescents sampled (i.e. 29:49). The 50:50 ratio, however, insures that the classification of persons is accomplished solely on the basis of the variance accounted for by the three variables comprising the discriminant function.

The accuracy of the discriminant function analysis is further reduced by the difficulty of obtaining pure samples of normal and delinquent adolescents. It is likely that estimating the proportion of the population designated as delin-

quent at 50% seriously underestimates the occurrence of delinquency in the population. Porterfield (1943), for example, found no differences in the types or severity of delinquent acts reported by college students and those committed by adolescents referred to the juvenile courts. Offer, Sabshin, and Marcus (1965) have demonstrated that within a normal adolescent population specific delinquent acts are relatively common. It is very likely, therefore, that with respect to the commission of specific delinquencies, there may exist an area of considerable overlap between the normal and delinquent groups of this study. That this may indeed have been the case is further supported by the finding that eight of the normal subjects were identified as delinquent by the discriminant function analysis.

Sample Specificity. Defining the delinquent group as in the present study emphasizes the need for caution in generalizing the current findings to different persons in different settings. The particular delinquents of this study are clearly not representative of the entire class of adolescents who might be legitimately labelled delinquent. Nevertheless, the effect of having sampled from a population of hospitalized delinquents cannot be fully assessed. It is likely that these delinquents have exhibited delinquent behavior somewhat more serious or disturbing than would be the norm among delinquents in general. It is also likely that the determinants of such delinquency would be predominately psychological rather than sociocultural and that the families of such delin-

quents would be somewhat more culturally advantaged and psychologically sophisticated than would be the norm among an equivalent group of nonhospitalized delinquents. For such reasons, it is important that the results of this study not be injudiciously generalized beyond the particular types of adolescents and settings sampled.

In this context, it should also be mentioned that the ratio of females-to-males was somewhat larger in the present study than would normally be the case. This may be attributed to the facts that the female-male ratio in the settings sampled was somewhat disproportionate and that in the hospital settings the female patients were more inclined to consent to participation than were the males. The actual implications of this situation are difficult to precisely establish. One possible interpretation, given that participation was voluntary, is that the normal and delinquent adolescents who chose to participate in the present study, may be somewhat more introspective, more intellectually curious, or more psychologically-minded than their counterparts in their respective populations. Also, since the delinquencies of female adolescents have been found to be less socially disruptive than those of males and also less likely to precipitate psychiatric or correctional interventions (Conger & Miller, 1966; Heilbrum, 1970), it is likely that the hospitalized females in the present study were somewhat more severely disturbed than might normally have been the case. For such reasons, as well as

those delineated above, the limits of the external validity of this study must be duly acknowledged.

Multicollinearity. Multicollinearity, which refers to the situation in which some or all of the independent variables of a particular analysis are very highly intercorrelated, can cause difficulties with respect to certain aspects of regression and discriminant analyses. When multiple regression analyses are employed, as in the present study, to evaluate the relative importance of a number of independent variables, the reliability of the beta weights is inversely proportional to the intercorrelation of the independent variables (Cohen & Cohen, 1975). In order to determine whether extreme multicollinearity affected the results of the present investigation, the intercorrelations of the variables within each analysis were calculated. The mean absolute-value intercorrelation of the Affective Role-Taking/Distractibility variables was found to be .14. Within the Interpersonal Orientation variables, the mean intercorrelation of the So scales was .34, of the Mach scales was .35, and of the So with the Mach scales was .18. The mean absolute-value intercorrelation of the Self-Image variables was found to be .45. Finally, the mean intercorrelation of the six discriminant function analysis variables was .32. Of all the calculated intercorrelations, the highest was found to be .74. On the basis of these intercorrelations, it may be safely assumed that the effects of multicollinearity did not significantly alter the findings of this study.

Conclusion

The evidence of this study supported the notion that normal and delinquent adolescents may be meaningfully distinguished on the basis of specific social and affective attributes. The results further suggest that a blanket deficiency model of delinquency is inadequate to explain the complex pattern of differences between these two groups. It is suggested that future research in this area must be particularly cognizant of the heterogeneity of any delinquent subgroup and that special care be exercised in delineating the specific context of the investigation. Only in this manner will it be possible to systematically map the highly intricate patterns of social and affective functioning of normal and delinquent adolescents.

SUMMARY

The study was designed to assess whether normal and delinquent adolescents could be differentiated on the basis of their characteristic modes of perceiving and interacting with their social and affective milieus. The participants were 46 normal high-school students and 29 hospitalized delinquent adolescents. The two groups were equated on the basis of sex, age, intelligence, race, and socioeconomic status. Sixteen inconsistent two-channel affective messages were shown to both groups of adolescents. Ratings were obtained of each person's evaluation of the degree of liking-disliking expressed by each message, as well as of the degree of subjective difficulty experienced in evaluating such messages. These ratings, in conjunction with similar ratings of the independent facial expression and verbal content channels of the inconsistent messages, constituted a measure of the degree to which facial or verbal primacy was employed to resolve the inconsistency across channels. A determination of distractibility was obtained by comparing the liking-disliking ratings of the facial and verbal channels presented alone with their ratings in the presence of an extraneous opposite-channel cue. Other measures employed included the Socialization Scale (So) of the California Psychological Inventory, the children's ver-

sion of the Machiavellian Scale (Mach), and the Offer Self-Image Questionnaire (OSIQ). These scales were composed of six, three, and eight subscales, respectively.

Analysis of the data via multiple regression and discriminant function analyses revealed that the most important variables for discriminating the two groups were Superego Strength (So), Mastery of the External World (OSIQ), and Inconsistent Message Ratings. Delinquents were found to be deficient in superego or conscience development relative to normals, to have been higher in self-reported estimates of self-confidence and social competence, and to have viewed inconsistently communicated affects as more negative. The discriminant function composed of these three variables was able to predict actual group membership with 88% accuracy. Further analyses revealed that normal and delinquent adolescents did not differ in the degree of subjective difficulty reported in decoding the affective messages. Both groups, however, found inconsistent messages to be more difficult to decode than one-channel facial or verbal messages. Contrary to the hypothesis that normals would exhibit greater facial primacy in decoding inconsistent messages, no significant differences were found between the groups in this regard. As for distractibility, the results of this study revealed that normals were more distracted by extraneous facial cues and delinquents by extraneous verbal cues. Contrary to expectation, however, delinquents were not found on the whole to be more distractible

than normal adolescents.

The results of this study were interpreted as supporting conceptions of delinquents which emphasize the inadequacy of their superego or conscience development, their tendency to suspect or devalue the intent of others especially when such intent is communicated ambiguously, and the unevenness of their self-concept. The view that a large subgroup of delinquents suffer from attentional deficits was not supported by the results of this study. Socialization and role-taking were interpreted as being useful constructs for discriminating the two groups, while the endorsement of Machiavellian Interpersonal Tactics was seen to be more reflective of social competence and success than of a delinquent or manipulative adaptation. The findings suggest a complex pattern of differences between normal and delinquent adolescents and argue against a blanket deficiency model of delinquency.

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APPENDIX A

APPENDIX A

Normal and Delinquent Group Means
and Standard Deviations for the
Independent Variables

<u>Variable</u>	<u>Normal</u>		<u>Delinquent</u>	
	<u>Mean</u>	<u>Standard Deviation</u>	<u>Mean</u>	<u>Standard Deviation</u>
Facial Ratings	3.94	0.31	3.93	0.39
Verbal Ratings	4.01	0.32	4.10	0.44
Inconsistent Ratings	3.80	0.43	3.28	0.51
Channel Primacy	0.99	1.22	1.12	1.24
Distractibility	1.05	0.63	1.05	0.68
Positive Experiences	6.50	2.34	3.41	1.68
Conformity	7.15	1.90	5.66	1.40
Evaluation Anxiety	5.50	1.15	4.48	1.55
Low Self-Regard	3.04	1.01	3.14	1.09
Superego Strength	6.72	1.79	3.48	1.70
Poise	4.00	0.99	2.79	1.21
Views of Human Nature	20.24	2.77	20.28	3.76
Interpersonal Tactics	20.61	3.13	21.03	4.22
Abstract Morality	3.83	1.37	4.52	1.68
Impulse Control	2.77	0.78	3.18	1.01
Emotional Tone	2.20	0.62	2.86	0.85
Body and Self-Image	2.59	0.77	2.77	0.58
Social Relationships	2.33	0.69	2.55	0.72
Morals	2.52	0.65	2.73	0.74
Mastery	2.64	0.55	2.76	0.70
Psychopathology	2.59	0.57	2.95	0.87
Superior Adjustment	2.64	0.58	2.82	0.68

APPROVAL SHEET

The dissertation submitted by Frank Lani has been read and approved by the following committee:

Dr. Emil J. Posavac, Director
Professor, Psychology, Loyola University

Dr. Jeanne M. Foley,
Professor and Chairman, Psychology, Loyola University

Dr. Alan De Wolfe,
Professor, Psychology, Loyola University

The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

April 10, 1980
Date

Emil J. Posavac
Director's Signature