RESEARCH REPORT:

DELINQUENCY, A FAILURE IN LANGUAGE COPING?

PATRICIA F. BROWN

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Further information about this research can be obtained by applying to Dr. Patricia Brown, Senior Psychologist, Children's Court Clinic, 17-23 Queensbridge Street, South Melbourne, Vic., 3205.

ABSTRACT

This study was an investigation into whether the verbal difficulties of adjudicated delinquents may be considered a function of their social-class membership or whether these difficulties can be related to the process of delinquency itself.

To guide the study, the findings from a number of different areas of psychological research were considered, and a model of "thoughtless" delinquency was developed. The model linked the occurrence of delinquency to a motivational problem with language whereby the young person, on the basis of early negative experiences, may have learned defensively to close off in interpersonal words/verbal thought situations. As a result, the quality of language knowledge and use could be affected. Also, because the flow of verbal thought might be interfered with, there could be a truncating of plans related to verbal interpersonal problem solution which, if occurring frequently, could lead to delinquency. Within this theory, social-class membership was seen as having a secondary role in relation to language coping deficits which might occur.

Three segments of this theory were tested in the study: Firstly, whether there is more limited motivation to deal with language and a predilection for action rather than words on the part of delinquents as compared with nondelinquents; secondly, whether there is a problem with language processing and expression for delinquents in comparison with nondelinquents, and whether the language expression of delinquents is further exacerbated or attenuated by social-class

membership; and thirdly, whether a disruptive effect of language inhibition on planning in verbal interpersonal situations might be inferred from a difficulty in interpersonal cognitive problem solving for delinquents compared with nondelinquents.

The sample of 180 subjects tested comprised adjudicated delinquents and nondelinquents from working class and from middle class, the delinquents being further subdivided into institutional, probation, and police-cautioned groups. Tests administered were varied on verbal, interpersonal, and planful dimensions, and their opposites, an attitude to language test and a picture-vocabulary test being additionally given.

The results demonstrated that the language coping profile related to delinquent status was different from that obtained on the basis of social class. The profile for delinquent-status groups was consistent with a motivational problem in the use of language for delinquents rather than any deprivation in access to it, while that for social class suggested more limited educational and cultural opportunity for the working class. Compared with nondelinquents and irrespective of social class, delinquents were found not to like the use of language as much, did not think it as important, and liked movement activities more. This was construed as a more limited motivation to approach language, and as a preference for action. Also, irrespective of social class, delinquents had more limited vocabulary knowledge, so the quality of their language interchanges would be poorer than that of nondelinquents.

On the other hand, a broader spectrum of comparative language difficulties was found to be attributable to social class than to delinquent status, the working class, in addition to showing poorer vocabulary knowledge than the middle class, also using a more limited amount of and less complex speech, these latter differences not being in evidence for delinquent groups compared with nondelinquents. Moreover, no one individual language problem evidenced by delinquents was exacerbated once social class was taken into account. However, since evidence was reported to suggest that the majority of adjudicated delinquents come from the working class, and the working class in this study showed a range of comparative language difficulties, the likely most frequent presentation of delinquents to the courts and to police would constitute an amalgam of the two profiles: Adjudicated delinquents would, in the main, be poorly motivated towards language and prefer movement, would have some limitation in vocabulary, and use fewer words and less complex speech constructions than nondelinquents. This comparative limitation in language efficacy by adjudicated delinquents has a singularly important implication for strategies of remediation: Therapeutic interventions that are fairly exclusively reliant on language would be contraindicated.

In the search for a link between language-coping characteristics and delinquent process, no explicit evidence was found. No disruptions to the planning process were evident on the interpersonal verbal planning task employed, which focused on the ability to produce steps to problem solution. However, a finding of significantly less frequent introspection, evidence of thinking before action or segments of action, by delinquents compared with controls, was interpreted as a

possible manifestation of a "no thought" strategy by delinquents, when engaged in verbal interpersonal problem solving. It was argued that this less frequent introspection could potentially affect the *quality* of the solution chosen as compared with the sequential steps taken to solution, as was measured, since perhaps a range of options might then not be considered before a plan of action is embarked on, and the consequences of actions might not be sufficiently perused, initially. Tests of those aspects of interpersonal problem solving were not used in the study. Further research would be needed to elucidate this finding concerning introspection and whether it might constitute a link to the process of "thoughtless" delinquency.

In terms of the theory proposed, two of the three components tested received some support, an adequate test of the third being ultimately lacking. Revisions to the theory were forced by the research findings. However, it was considered that with incorporation of the revisions specified, the theory would remain a useful model from which to pursue questions posed by the outcomes of the study.

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CHAPTER ONE

The Scope Of The Research Inquiry

1.1 *Introduction*

What resources of importance, if any, are lacking in the life situation or in the personal competence of youths who become delinquent? Which of these, if modified, would cause a decline in delinquency? Approaches to these questions have varied from studying familial child-rearing practices, appraising the educational failures associated with delinquency, to examining the intellectual capacity of young offenders, their neurological functioning, their conditionability, their self-esteem and their moral reasoning.

To say that there is no simple cause-effect link, but an extremely complex network of interactive variables such as those which produce delinquency, is probably a reasonable statement. However, the attempt to establish which variables have most weight in the network and those which may be causal is still germinal after many years of investigation in the field. The research to be outlined will address a concern with one variable in particular, but the hope is to look at the contextual interplay of this variable with others, since, by its very nature, this variable impinges upon much of life.

The variable chosen, the language coping of delinquent youths, was selected because, not only is there reasonable evidence that at least the population of young offenders processed through the legal system experiences language difficulties of some kind, but also because language is a focal issue in self-control literature, where its importance as an inhibitor or mediator of action is debated and

researched.

Inevitably, making a connection between the issues of language deficit or difference and self-control for delinquents implies a quest for delinquency process. A prior question needs to be asked, however. Is the language coping of young offenders, in fact, different from that of non-offenders, or is the reported difference related merely to their social-class membership,since evidence will be cited to suggest that adjudicated young offenders - those formally dealt with by authorities - come predominantly from the working class? If language-coping differences do exist irrespective of, or in addition to, social-class membership, a mapping of these differences needs to begin. This and the relevance, if any, that language-coping problems might have for an explanation of delinquent process, the mechanism of delinquency, is the specific matter of the research inquiry.

It needs to be said at this point that, although discussions will ensue in this research about "the delinquent" and "delinquent process", it is assumed that there may be more than one road to delinquency. It is not expected, then, that all delinquency will be able to be explained by the same mechanisms, although the search for process in relation to the generality of offenders seems warranted.

At this stage, too, it is appropriate to define what is meant by delinquent. For this research, a delinquent is a juvenile who has committed an action legally denoted as criminal, and there will be a concentration of attention in the study on adjudicated young offenders rather than on those who have not come to legal attention. This focus is made not only because they are the most visible young offenders, but because most research knowledge to date pertains to them.

What follows in this chapter is a detailing of evidence that more limited competence with language material has been substantially demonstrated for adjudicated delinquent and adult criminal populations, although studies have frequently not controlled for social class. Research evidence of the class membership of adjudicated delinquents is outlined, and what differences in language might be expected on the basis of social-class affiliation, alone, is explored.

Through research findings, a scene is then set against which the question can be explored whether, in addition to differences expected on the basis of class affiliation, one might reasonably postulate likely differences between delinquent and nondelinquent groups in the ways they call on language, which, in turn, could affect the control they exercise in their day-to-day choices of action.

In the final section of this chapter, a theory of delinquency is then framed to form the superstructure from which research hypotheses are drawn.

1.2 *Educational Problems of Delinquents*

Using a nonclinical sample of official (probationer/multiple police contacted) and self-reported (high school) white male delinquents, Dishion, Loeber, Stouthamer-Loeber, and Patterson recently concluded that "academic skill deficits may be the strongest covariates of antisocial behaviour" (1984, p.37). The assertion is not new. The question whether there is a direct relationship between school learning difficulties and delinquency, and the direction of any relationship, has periodically been a focus for debate over decades.

Koval and Polk (1967), Rutter, Tizard, and Whitmore (1970), and Elliott

and Voss (1974) proposed that delinquency may be a reaction to school failure, the rationale being that early school failure leads to feelings of poor self-esteem, which is compensated for by antisocial behaviour in an effort to gain feelings of accomplishment and competence. Roman (1957) found a sequence of reading retardation followed by truancy and delinquency, and Ferguson (1952), Rutter et al. (1970), and Gold and Mann (1972) provided evidence that poor school performance may both predate and lead to increased rates of antisocial behaviour. Further, McGurk, Bolton, and Smith (1978) found that low scores on reading and arithmetic tests were two predictive factors in the recidivism of delinquent males.

In some delinquent children, however, antisocial behaviour appears to antedate lower school performance (Glueck and Glueck, 1950; Robins, 1971, from personal communication reported by Offord, Poushinsky, and Sullivan, 1978). Offord et al. argued for a deprived family environment producing both the antisocial behaviour and the educational retardation.

While many researchers have talked in terms of global school performance problems for delinquents - "poor school performance", "school failure", and "drop out" - when the targeting of problems becomes more specific, what impresses as significant is the almost monotonous regularity of the focus by researchers on the reading problems of delinquents. It could be that such a focus results from fashion in researching, or else it indicates that educators have more often needed to be concerned about the problem because of its prevalence. Perhaps, also, it is because not to read well impinges on a great deal of school learning.

Global estimates of reading retardation like that cited by Mulligan

(concerning a U.S. Department of Education and Welfare publication of 1969), that "75% of juvenile delinquents are significantly retarded in reading" (1974, p.37), may be of limited value, because such estimates subsume numbers of populations that are often vastly discrepant. Nevertheless, some reports lead one to speculate that the incidence of school learning problems and especially reading problems may, indeed, be higher for a number of delinquent groups than for most nondelinquents.

Roman (1957), in comparing the incidence of reading disabilities across various clinical samples, quoted 84% of cases carried by the treatment clinic of the Manhatten Children's Court as being reading retarded by two or more years, and compared this with 10% in a school sample, 62% in a sample from a child placement agency, and 73% in the population of a psychiatric hospital children's ward, said by Fabian (1954) to be reading retarded. Fabian's figures of reading retardation in a sample of predelinquent and delinquent children (their context not cited) was 83%.

Critchley (1968), in a review of reading retardation, dyslexia, and delinquency, pointed out that as early as 1935, Peyser had reported that between 84.4% and 92.8% of young offenders at the New York City Reformatory and the House of Refuge on Randall's Island were retarded in basic school subjects compared with 29% of the children in New York City's elementary schools. Social-class composition was not reported by Critchley. Critchley further reported a study of his own of a remand home population of 477 children in the U.K. and found 60% to be reading retarded by three or more years. In comparison, reading retardation among normal school leavers was 30%. Critchley concluded

that there is "a very real difference between the magnitude of the problems of illiteracy and reading retardation as seen in a delinquent population and that seen among pupils attending secondary modern schools" (1968, p.1545).

Mulligan (1974) reviewed the educational performance of 60 "heavily delinquent oriented children", apparently probationers, and found that although 20% were reading at grade level, 80% were significantly retarded in reading. Also, Rutter (1979) found a relationship between conduct disorders as reported by teachers and reading skill deficits. More recently, studying groups of 14-16 year olds (sex unspecified) on remand for court reports in South East England, Barnes, Hollin, and Martin (1984) found that literacy was "overall at a very low level", less than one third of the sample attaining adequate reading achievement.

Locally, anecdotal evidence in a survey conducted in prisons and juvenile detention facilities in Melbourne and country areas (Brennan and Brennan, 1984), where prisoners themselves were asked their perceptions of reading and writing, revealed feelings of poor competence with reading by many, and embarrassment about it. One teacher estimated that between 65% - 80% of students in the central adult prison wanted help with spelling and often showed a need for "help with self-expression; being able to get their thoughts down clearly on paper" (Brennan and Brennan, 1984, p.334). The reading of this survey indicated a population not comfortable with words.

It is this idea of discomfort with words to which attention is now drawn; it could constitute a bridging of the findings of those cited earlier who have argued for delinquency leading to school learning problems or else for school learning

problems leading to delinquency, and accommodate also the specific issue of reading problems.

Looking at how reading is learnt, one very obvious fact is that its matter is words, it is taught by means of instructional words, and its efficacy is observed through the reader's speech. Also, school itself is a learning environment in which teaching proceeds most frequently through verbal instructions, verbal interactions and reading, and often by means of the writing of verbal material. Given this premium on words in school settings, it would follow that any lack of receptivity to words on the part of a child could potentially result in school learning problems. Further in this research, the idea will gradually be developed that not merely verbal learning difficulties (including reading problems) but the delinquent process itself may relate to an emotionally based cognitive style, a set of habits, already established by the time the young person enters school, which precludes a focusing on speech material.

Such an hypothesis gains at least some credence from the results of Roman's (1957) investigation of "Reaching Delinquents through Reading". He found that neither therapy nor remedial reading alone brought behavioural change with delinquents, but that tutorial group therapy in which ego strengthening and reading skills are promoted was needed. The findings do suggest that a compounding of emotional and cognitive variables may well be involved in the school learning problems of young offenders. Whether emotional issues gain importance before or after the onset of learning difficulties remains a point at issue, however, gaining neither resolution nor significant attention from research.

Also, that reading problems for delinquents may be merely more often noted manifestations of general verbal difficulties receives some support from a relationship having been reported by language researchers between oral language skill (Benton and Pearl, 1978) and characteristics (Blank, Rose, and Berlin, 1978) and reading ability.

Certainly, other researchers have concluded that there is a general language problem for young offenders. Poremba suggested that "the majority of delinquent boys have language deficits" (1975, p.145), and Gagné, summarizing her review of research on educating delinquents, which included, among other things, school grades, reading problems, impulsivity, speech disorders, and intra-familial communication, concluded that "a survey of the literature indicates that delinquents have particular problems with verbal communication and reading" (1977, p.13). Further evidence that it is language material in particular that is less well negotiated by delinquents comes from intelligence testing research.

1.3 *Verbal Compared with Nonverbal Intelligence Test Scores Of Adjudicated Delinquents*

In this and the following section, when IQ scores are reported, the figures have been adjusted to the nearest whole number.

Data from intelligence tests like the Wechsler Intelligence Scale for Children and the Wechsler Adult Intelligence Scale, which employ different scales for assessing verbal and nonverbal intellectual functioning, suggest that delinquent groups function better on performance than on verbal scales (Franklin, 1945; Glueck and Glueck, 1950; Fisher, 1961; Prentice and Kelly, 1963; Kaiser, 1964;

Henning and Levy, 1967; Hoghughi and Forrest, 1967; Fernald and Wisser, 1967; Kahn, 1968; Andrew, 1974; Saccuzzo and Lewandowski, 1976; Hecht and Jurkovic, 1978; Hubble and Groff, 1981; Harvey and Seeley, 1984; Tartar, Hegedus, and Winsten, 1985). However, the meaning of this depends largely on what these different scales are, in effect, measuring.

In their Clinical Interpretation of the Wechsler Intelligence Scale for Children, Glasser and Zimmerman (1967) compared different factorial classifications of what the verbal and performance subtests may each be measuring. They indicated that overall, in varying degrees, the verbal subtests have loadings on verbal comprehension, be it an application of judgement following implicit verbal manipulation or knowledge expressed by formal education (Information, Comprehension, Arithmetic, and Vocabulary), and on comprehending relationships between ideas and expressional fluency - the ability to come up with a variety of ideas (Similarities). In comparison, the performance subtests have loadings on perceptual organization (Picture Completion, Block Design, and Object Assembly) and on semantic patterning and semantic relations selection (Picture Arrangement). By implication, findings of significantly better scoring on performance tasks than on verbal tasks suggest lower facility either with verbal thought or expression.

Several issues of importance have been raised in the literature about the discrepancy between performance and verbal IQ for delinquents. Firstly, Guertin, Rabin, Frank, and Ladd (1962) questioned whether, below a magnitude of 25 IQ points difference, the finding would discriminate delinquents from the normal population, since a discrepancy of approximately 25 IQ points occurred once in

every 100 subjects in the standardization population. Two different arguments attenuate the significance of this objection. Firstly, one cannot assume that delinquents were not also included in the standardization populations for the Wechsler tests, from Wechsler's (1944) description of his samples. Secondly, it would, in any case, seem unreasonable to assume that such discrepancy would be diagnostic of all delinquents and thus that every delinquent would be expected to show this discrepancy. A more reasonable expectation would be a prevalence of a finding of imbalance of verbal and performance scale scores in the delinquent population when compared with the nondelinquent population. It would have been more appropriate to object specifically to a lack of consensus existing among researchers for an accepted standard of what constitutes reasonable discrepancy. Certainly, such a standard was not forthcoming from the studies of the sixties and seventies when the phenomenon was given focus.

A second issue of importance raised in the literature has been foreshadowed by the comments already made. Black and Hornblow (1973), in their review article, pointed out that the performance as compared with verbal advantage is not consistently found. This observation implies an assumption that it would (or should) have been. What they went on to suggest, however, indicates that it is with atypical populations that the phenomenon is *not* found. They suggested that negative findings are most notable in studies of special offender groups preselected on such bases as superior education, race, intellectual retardation, or psychiatric abnormality. (Naar's, 1965, conclusion, that a reversal of the effect - verbal greater than performance scoring - is indicative of "emotional difficulties", is an example of such findings.) In the more general, non-preselected offender groups, however, it would seem that the phenomenon of difference in the direction of

performance being higher than verbal scores is commonplace, even if the baseline for what is considered reasonable discrepancy has remained variable.

A more recent study by Hubble and Groff (1981) is instructive. They addressed both the issues of amount of discrepancy between performance and verbal scores and the frequency of its occurrence. They found that more frequent but not bigger discrepancies in the direction of performance greater than verbal scores characterized delinquents when compared with the Wechsler Intelligence Scale for Children Revised standardization sample. That is, delinquents showed significantly fewer verbal score elevations and more performance elevations of nine points and above. They found also, that full scale IQ, socio-economic status, and group by test interactions could not statistically account for the differences. It was concluded that the phenomenon was of sufficient moment to pursue causal explanations.

Attempts at explanations of the phenomenon have tended to emphasize environmental and educational factors. Wechsler (1944) attributed it to educational retardation; Glueck and Glueck (1950) suggested that it reflected more limited schooling, a failure to take up educational opportunities, a less stimulating cultural atmosphere in the home, and differences in temperament and personality. Prentice and Kelly (1963) suggested learning disability. Black (1966), in an unpublished paper quoted by Black and Hornblow, attributed it to "poor socio-economic background, improverished cultural environment and inadequate or broken education" (Black and Hornblow, 1973, p.84). Guertin, Ladd, Frank, Rabin, and Hiester (1966) suggested an environmental emphasis on "doing rather than thinking".

The ideas of researchers who speculated more specifically on the mechanism of cognitive imbalance bear detailing because they impinge on the notion of cognitive style raised earlier. Firstly, Andrew (1974), whose results showed that the performance greater than verbal phenomenon was strongest for low maturity delinquent subjects, began to question whether lower verbal skill or higher performance skill is the active ingredient in the performance greater than verbal formula. In a later study in which delinquents showed a larger performance advantage from their full scale scores than the verbal scores showed disadvantage, Andrew concluded that "an elevated Performance IQ characterized, better than a lower Verbal IQ, those delinquents who showed the P>V sign versus those who did not" (1977, p.102). Her sample was mostly from lower socioeconomic classes.

Andrew's (1973, 1974, 1974, 1977) reflections on mechanism are of particular interest for the present study. She related ideas of coping style to verbal ability, suggesting, in line with ego analytic theory, that an habitual use of avoidance (repression) as a coping style (defense) can produce a decline in verbal ability, though she has directed these ideas to declining verbal abilities in old age. Further, she talked of too low a verbal IQ failing to provide verbal means of inhibition and a relatively too high performance IQ making it "too easy to act out physically". These issues will be considered further.

The second researchers to be cited, Harvey and Seeley (1984), have more recently completed a particularly interesting study of 288 delinquents, 18% (48) of whom were designated as "gifted in some way". (Their mean performance IQ was 121.) It was the gifted on whom they concentrated attention in the study.

While they found, generally, that the younger offenders had higher abilities in nonverbal areas, they also found "pronounced elevation of the nonverbal areas of ability" among the gifted subjects. Further, applying factor analysis to data obtained from the Wechsler Intelligence Scales for Adults and for Children, the Torrence Test of Creative Thinking, and the Wide Range Achievement Test, they defined higher order factors, one of which was general intelligence with separate fluid and crystallized characteristics. Recalling the work of Horn and Cattell (1966) and Horn (1980), who have defined crystallized and fluid intelligence, they described crystallized intelligence as intellectual functioning requiring previous training, education, and acculturation. Fluid intelligence, on the other hand, was conceptualized as "problem solving where quick adaptation to unfamiliar stimuli is used to understand the implied pattern or concept with little reliance on previous learned strategies or verbal mediation" (Harvey and Seeley, 1984, p.76). It is seen as being developed through incidental learning; as being an intelligence not taught or used in schools.

The results they obtained relative to crystallized and fluid intelligence were noteworthy. They reported an "extremely strong fluid component" in the gifted group of delinquents as compared with crystallized intelligence. Moreover, in this study, achievement measures were found to be more related to crystallized ability, and it appeared to the researchers that the classroom situation worked against the use of fluid ability in the academic achievement of those students.

What is interesting for the present research is the concept, when applied to delinquent populations, of a component of intelligence related to verbal mediation and to education, and another relatively unrelated to it. Perhaps the intellectual

imbalance noted in offender groups, generally, could be a manifestation of imbalance in the development of these two kinds of intelligences which then presents as a style of coping in everyday living.

In overview of the performance greater than verbal IQ phenomenon, what can reasonably be said from research findings is that, while the magnitude of performance greater than verbal discrepancy in IQ scores for delinquents from that found in the normal population has varied in research reports, the frequency of the occurrence of such a phenomenon seems in little doubt. It seems, too, that positive findings pertain to unpreselected groups of delinquents. Also, while more limited facility with verbal thought and language than with perceptual organization and activity is suggested by the performance, as compared with verbal, IQ advantage, the phenomenon of itself does not necessarily indicate verbal deficit; it could indicate merely an ascendancy in other than language skills, and adequate verbal skill. On the other hand, the fact that the previously cited study by Hubble and Groff (1981) did show that the performance - verbal discrepancy was unrelated to full scale IQ belies this. So, too, does the literature detailed on the educational problems of delinquents. Further, other indirect evidence that the performance greater than verbal IQ discrepancy may be indicative of verbal deficit comes from research findings to follow, concerning the level of intelligence of young offenders. If young offenders are found, in general, to be of normal intelligence or below, the performance advantage would, then, logically imply verbal deficit relative to the normal population.

The Full Scale Intelligence of Delinquents

It is intended in this section to explore the state of research information

about the full scale intelligence of delinquents further than would be required for the purpose for which it was introduced, namely to be able to deduce the presence of verbal deficit. The section will be more intensively treated because it has meaning also for the design of the research with respect to the variable of intelligence, in a later chapter.

While offenders were commonly classified as feeble-minded in the first two decades of the century, the advent of greater sophistication in intelligence testing, together with theoretical and ideological shifts away from biological, medical models of delinquency, saw misclassification of large proportions of offenders cease. There is now considerable evidence that delinquents function within the average range of intelligence according to Wechsler's classification, that is, IQ 90-109 (cf. Wechsler Intelligence Scale for Children Manual, 1949, p.16). However, it will be seen, further, that generalized notions of lower intelligence die hard.

Reports of delinquents scoring within the average intelligence range have been frequent. Wedeking (1948) reported normal intelligence in 500 delinquents tested in an Indiana school, and Black and Hornblow (1973), in their review, concluded that the mean IQ of offenders was within the average range. Woodward (1955), in his review, concluded that the average IQ of delinquents was 92, while Glueck and Glueck (1950) also reported a full scale IQ of 92 from a sample of 500 delinquents. (In that study, it is interesting that nondelinquent controls also obtained a mean score of 92.)

One major study is particularly impressive because of the size of the

sample researched: Brown and Courtless (1968) canvassed 207 penal and correctional institutions in the U.S. about the intelligence level of inmates. Information was obtained from 84% of the institutions on 90,477 inmates and 75% of the data was based on Wechsler Adult Intelligence Scale scores. It is not known, however, whether the findings were based on a full complement of Wechsler subscales. (Gendreau, Wass, Knight, and Irvine, 1976, reported that administration of a brief form of the Wechsler Adult Intelligence Scale has become widespread in corrections). Be that as it may, their findings were basically in agreement with those of Woodward (1955) and Glueck and Glueck (1950): Brown and Courtless found that the mean IQ of the sample was 93. They reported also, that the IQ range was 17-145 and that 9.5% of the sample had an IQ less than 70. Similarly, from their research using a sample of 150 white male adjudicated adolescents referred for pre-dispositional assessments from the court, Hubble and Groff (1981) reported a full scale IQ of 95. So too, Gath, Tennant, and Pidduck (1971) had reported the mean full scale IQ of 639 boys remanded in a remand home during May - November 1967 as 97.

Equivocation which arises in the literature seems to concern the emphasis given to such findings. While on the one hand some researchers emphasize the normal range classification, others stress that it is at the lower end of that range that the means often fall and proceed to argue for poor intelligence. Recently, for example, Hayes and Walker concluded that "the average intelligence level of the delinquent population is lower than normal" (1986, p.61). So, too, in 1977, Hirschi and Hindelang had written: "that delinquents have lower IQs than non-delinquents is firmly established" (p.584) and attacked, scathingly, those who would minimize the significance of findings of their lesser intelligence, which they

pointed out would amount to an expectation of eight IQ points difference from the general population.

There is no doubt that there is a preponderance of evidence that overall IQ's do fall at the lower end of the normal range, although there have certainly been studies of delinquents where the full scale IQ was at least 100. For example, Gendreau et al. (1976) presented findings pertaining to 61 and 43 subjects respectively from two Millbrook (presumably correctional facility) studies of prisoners, who had had little schooling and had generally been institutionalized longer, performed poorly in prison, and had poor social backgrounds. They reported that these subjects obtained average IQ scores and standard deviations of 100 and 14 in one study, and 103 and 12 in the other. Also, Walters (1953), studying 50 New Zealanders of European descent in a main security prison, reported an average full scale IQ of 102. Doppelt and Seashore (1959), too, reported a mean IQ of 101 for a federal training-school sample of 98, and 101 for a federal reformatory sample of 95 subjects, while Wiens, Matarazzo, and Gaver (1959) reported the mean full scale IQ of 112 convicted sex offenders in a state diagnostic hospital to be 100. Of special interest were the findings of the study by Graham and Kamona (1959), because they compared 35 successful and 35 unsuccessful readers in a federal institution. The successful readers gained a full scale mean IQ of 105. (The unsuccessful readers scored a mean of 94.) The question of whether such full scale results relate to special delinquent populations may be relevant for at least some of those studies.

As previously suggested, however, the expectation is for low average full scale functioning. Naar (1965) reported low normal intelligence of a random

sample of delinquents selected from court files; Black and Hornblow (1973), in their review, suggested that "more offenders have an IQ below average than above" (which seems the most accurate way of reporting the findings in the area); also, Prentice and Kelly (1963), in a detailed review of 29 different delinquent samples where full scale IQs were reported, listed only seven of those samples (24%) as having a mean IQ of 98 or more. Perhaps, this does indeed exemplify the proportion of young offender groups that attains a full scale mean approximating that of normals in Wechsler standardization samples. If it does, one needs to ask what these scores alone are able to say about the ability of young offenders, other than perhaps to provide Hirschi and Hindelang with data that can be translated into gross phrases like "the generally low IQ of official delinquents" (1977, p.579). The unqualified focus on full scale scoring could obscure very complex issues indeed, concerning the intelligence of delinquents.

More meaningful is a questioning of what lies behind such scores. One hypothesis is that the lower average scoring by delinquents reflects the prevalence of the performance - verbal discrepancy discussed previously: The lower verbal score depresses the overall intelligence score. A comparison of the different data reported in the Prentice and Kelly (1963) review provides provisional support for this view. Prentice and Kelly detailed the mean Wechsler verbal, performance, and full scale IQ scores of delinquents, reported by a number of researchers. If the percentage is calculated of delinquent samples listed by Prentice and Kelly that do not attain a mean full scale IQ score of 98 or more (76% or 22 samples of 29 reported), and is compared with the percentage of samples with a performance IQ of 98 or more (63% or 15 samples of 24 reported), it might be deduced that the reported differences in intelligence between delinquents

and the Wechsler standardization sample could be verbally based. Indeed, that only 12.5%, or 3 samples of the 24 reported, reached a verbal IQ of 98 or more does suggest comparative verbal deficit.

A concentration on the breakdown into performance and verbal abilities seems, then, more productive than an unqualified reporting of full scale scores. Also, it would seem to have importance for research matching designs where an index of nonverbal intelligence may be a fairer comparison of intelligence than an overall estimate. The most important conclusion drawn from this section is, however, the existence of likely verbal deficit. Since it has been demonstrated that there is a consistency in findings that young offenders' full scale functioning is in the average (albeit often low average) range of intelligence, the performance greater than verbal phenonemon would then imply verbal deficit in comparison with the normal population.

Proceeding on this conclusion gives rise to questions of how less facility with, and likely deficit in, verbal/language skill is best conceptualized in behaviour. It seems plausible, although no-one has suggested it before, to question whether poorer motivation to use language in particular might underlie reduced facility with its use on the part of delinquents. Does a cognitive style emerge for delinquents which touches many areas of living dealt with through language? Is there a predilection for action and a corresponding lack of enthusiasm for words which could militate against the young person attending in "words" situations? (In this context the education problems of delinquents detailed earlier could defensibly be considered language related.)

Also, what specific effects on the person's verbal capacity would be expected if a motivational problem with language did exist? Presumably, these would depend, in part, on the social class of the person, since membership in middle class or working class would bring different attitudes to bear on the acquisition and use of language. At this juncture it is appropriate, then, to consider social-class differences in language, but first to look at the social-class membership of young offenders.

1.4 *Delinquency and Social Class*

Although there is debate about the minutiae of social class, there seems little doubt that the concept of class is generally acknowledged in modern society. Accordingly, arguments for the existence of different classes or for the usefulness of class concepts will not be pursued in this thesis. Instead, a pragmatic approach is taken accepting social-class stratification as a fact of life. This approach seems vindicated by the findings from an Australian nation-wide survey conducted by Broom, Lancaster-Jones, and Zubrzycki which suggested that "Australians are not only familiar with the terminology of social class but use the concept of class in their description of Australia's social structure" (1968, p.217). Indeed, when asked to place themselves in a social class, most respondents saw themselves as members of the middle class or the working class. There have been similar findings in the U.S. (Tucker, 1966) and the U.K. (Kahan, Butler, and Stokes, 1966).

Stratification into these classes is presumed to be multi-dimensional and the indices used to represent it, varied. In the Broom et al. study, subjective social class was often commensurate with occupational positions held; so, in a scale which ascended through unskilled and skilled workers (craftsmen), clerks,

owners, managers, and professionals, it was found that "those above craftsmen see themselves predominantly as middle class whereas those below and including craftsmen see themselves predominantly as working or lower class" (1968, p.226).

Occupational status has frequently denoted social class in literature concerning adult populations, and occupation of parents when adolescents are the subjects. Income, education, and ethnicity have, likewise, been seen as salient indices of class (Broom et al., 1968), and Braithwaite (1981) pointed to the operationalization of class in terms of areas lived in: For example, the percentage of the adult-male population which has blue-collar occupations could define the working-class status of an area. Different indices or sets of indices, like those, frequently underlie "middle-class" or "working-class" research findings compared.

The attempt at making comparisons between class findings when the indices of class used may be diverse and, indeed, when the same indices could be qualitatively different depending on the culture sampled, suggests that, underlying a common appreciation of gradations of class, evidenced by the Broom et al. study (1968), is a supraordinate dimension, a concensus concerning who has more power, status, or advantage and who has less. In this research, when class is considered, the middle class is presumed to be seen as more powerful, and the working class as less powerful, and a common appreciation of class is assumed. It will be seen from what follows, that there is a predominant although not universal finding in the literature, that adjudicated delinquents, those who are formally dealt with in courts or by policing agents (in fact, the only unequivocally knowable group

of offenders), are from the working class.

Although there have been challenges to the notion of a relationship existing between social class and criminality, most notably from the review of Tittle, Villemez, and Smith (1978), a later more comprehensive review by Braithwaite (1981) questioned the selectivity of the Tittle et al. review and suggested that, on the contrary, studies of official records show notable class differences in criminality, and that there are also more frequent than chance (if inconsistent) findings of such a relationship from self-report studies. Reviewing 90 studies of the crime-class relationship published since 1970, Braithwaite (1981) concluded that lower-class people commit direct, interpersonal types of crimes normally handled by police more often than do middle-class people. However, he suggested that the reverse is true when less directly interpersonal forms of crime involving the abuse of power in occupational roles is the focus. Fifty-three of the 90 studies dealt with class and officially recorded juvenile crime as distinct from self-reported crime. Of these studies, 44 showed lower-class juveniles to have substantially higher offence rates than middle-class juveniles.

Of Australian data that have been reported, those by Braithwaite (1979) suggest that officially recorded delinquents more often emanate from lower class (Brisbane sample); those by Barber (1973) with a Queensland sample and those by the N.S.W. Bureau of Crime Statistics and Research (1974) suggest that officially recorded criminality of adults often relates to lower social class; those by Dunstan and Roberts (1977) with a Melbourne sample and by Vinson and Homel (1972) with all juvenile offenders in Newcastle, N.S.W., known to police in 1971, suggest that the rate of officially recorded delinquencies is greater in lower-class areas. (By

contrast, studies by Braithwaite (1979), with a Brisbane sample, and by Braithwaite and Braithwaite (1977), reported by Braithwaite, 1981, with Melbourne and Ipswich samples, did not reveal greater *self-report* of delinquency by lower class juveniles, and only inconsistent findings related to the rate of *self-report* of delinquencies from lower-class areas.)

Also, further statistics available from Victoria confirm the greater representation of working-class youths in official delinquency records. Challinger's (1977) statistics on Victorian juvenile offenders charged by police indicated that 6.3% of fathers were retired, pensioners, or unemployed, 41.9% came from homes where the father was unskilled or semiskilled, 18.7% from homes where the father was a skilled worker, and 16% came from homes where the father could be classified as having a clerical, sales, or professional background. If occupation of fathers is used as an index of class, and working class is denoted as unemployed, unskilled, and skilled workers, it follows that a majority of working class was represented. Of those officially cautioned by police, the figures change somewhat but still the majority cautioned could be termed working class: Retired, pensioner, and unemployed fathers comprised 4.4%, unskilled or semiskilled 36.7%, skilled 21.3%, and clerical, sales, or professional 26.9%. It is also evident that more young persons from the middle class were cautioned than appeared in court.

Further, in a more recent epidemiological study by Challinger (1985), in which statistics were reported based on police forms submitted to the office of the Police Prosecutors of Melbourne Children's Court, a predominance of working-class youths still obtained among officially denoted delinquents.

Offenders' fathers who were pensioners or unemployed constituted 9.8%, unskilled and semiskilled 31.1%, skilled 29.5%, clerical and sales 7.5%, middle management 12.5%, and professional 9.1%.

Given the over-representation of working-class youths in official statistics, and leaving aside questions of policing policy and speculations about the unknown total delinquency population, it is evident that where social resources are not optimal there is vulnerability to adjudicated delinquency. Since more limited facility with language has also been found to be likely with delinquent groups, the question of what contribution their social class might bring to their language functioning needs to be pursued. The theorizing of Bernstein in the sixties and seventies and research that followed offer some indications of what might be expected.

1.5 *Language and Social Class*

Bernstein (1958, 1959, 1960, 1961, 1971), sensitive to the academic failure of working-class children, sought to present a theory which explained their apparent verbal disadvantage in relation to middle-class children. What he proposed was an extremely compelling rationale for their failure, which makes intuitive sense, although perhaps more to middle-class perceptions of the world. His ideas concerned working-class children's early experiences of familial, and especially maternal, cognitions and speech which affected their perception of what cues to respond to in their environment. Bernstein suggested that children from working-class environments have access to only a restricted code of speech, while middle-class children have access to a restricted code but also to an elaborated code. He was not necessarily concerned with vocabulary but with the type of

language use, with verbal planning and organization.

Bernstein characterized the working class as giving fairly direct expression to feelings rather than mediating feelings through words, thus leading to a less developed emotional and cognitive differentiation. He also characterized them as paying attention to the social significance of speech rather than to its logical content, persons from the working class giving focus, for example, to "is he mad with me?" as compared with "what is he saying?" Paradoxically, he saw the working class as being position rather than person oriented, being person-oriented signifying attending to factual information about what people feel or do about events. Position as compared with person-oriented instructions to a child would be exemplified by the following: "Because I am your mother, do as you are told and tell Johnny to go home", versus "Because this would lead to worry for Johnny's mother you had better not have him stay to play without her knowing".

The working class was further characterized as having a "now" orientation because of an arbitrary reward and punishment system in the family, so that chance or friends or relatives play a greater part in deciding events than does the cognitive working out of plans. Bernstein suggested, also, that the lower the social-class stratum, the greater the resistance to formal education and learning because of a disparity between the language of home and of school. Because they attach significance to different aspects of language exchanges from that required by the school learning situation, their perception being of a qualitatively different order, working-class children have to mediate the middle-class language spoken by most teachers through the simpler language of their own class to make it perfectly meaningful. Where they cannot make this translation they were said to fail to

understand and are "left puzzled".

Bernstein suggested that middle class is "fundamentally distinct" from working class, in that they have a cognitive and affective awareness of the importance between means and long-term ends, discipline to "orientate behaviour to certain values but with a premium on individual differentiation within them", and an ability to "adopt appropriate measures to implement the attainment of distant ends by a purposeful means-end chain" (1958, p.161).

Direct quotations from Bernstein's early writing can reveal the sometimes vague terms in which his ideas, however interesting, were clothed, and the potential the content of his writing had for arousing emotion in researchers. In 1958, defining public language and formal language, terms which were to become restricted code and elaborated code, respectively, Bernstein wrote: "If the words used are part of a language which contains a high proportion of short commands, simple statements and questions, where the symbolism is descriptive, tangible, concrete, visual and of a low order of generality, where the emphasis is on the emotive rather than the logical implications, it will be called a public language" (P.164).

Bernstein suggested, further, that for those using a public language, "personal qualification" could only be made by nonverbal means, through body movements or changes in volume and tone. When describing formal language, the language of the middle class, he suggested, by contrast, that it is "rich in personal individual qualifications, and its form implies sets of advanced logical operations" (1958, p.164). Nonverbal means of expression would take second place. Bernstein

stressed that it was not the extent or range of vocabulary that is decisive in the middle-class child's development of a formal language, but the fact that he or she becomes sensitive to a particular form of indirect or mediate expression "where the subtle arrangements of words and connections between sentences convey the feeling" (1958, p.164). The child strives to obtain this to become close to the mother and so learns to respond to a particular form of language cues.

Moreover, Bernstein suggested that, because of the importance of the type of "mediate relation" between mother and child, a tension is created between the child and his or her environment, causing a need for the child to verbalize his or her relations in a personal, individual way. Thus, "a child at an early age becomes sensitive to a form of language-use which is relatively complex and which in turn acts as a dynamic framework upon his or her perception of objects. This mode of language-use will be termed formal" (1958, p.164).

Bernstein's writings touch on two issues of particular importance to the present research, one which points up reasonably simple means to establishing difference in expressed language between classes, and the other, an explanation for poor educational achievement albeit for working-class young persons generally. Firstly, while Bernstein does not focus merely on speech output but on how words are organized, confinement to a restricted code within his theorizing would lead to vocabulary deficit and also to shorter, and "grammatically simple" sentences. Thus, measures of vocabulary level and quantity and complexity of language production should elicit differences, depending on class.

Secondly, Bernstein's suggestion, that school learning would be negatively

affected because the languages of school and of home would be different for those with exclusively restricted code, could provide some explanation of the language failure of delinquent working-class youths. This would not however explain any limitation in the language skills of middle-class delinquents, who would have had access to an elaborated language code both at home and at school. It is evident that such theoretical explanation of language deficits for delinquents, exclusively in terms of class differences, would be insufficient. It is also evident, that research into language differences between delinquents and nondelinquents would need to include samples of both middle class and working class, if class and delinquency are not to be confounded.

Over time, Bernstein failed to formalize adequately much of his theory into testable hypotheses, and so there are questions remaining due to the lack of explicitness and elaboration of the theory. For example, he failed to explain how the middle class would have access to a restricted code. Be that as it may, Bernstein's theory raises important questions concerning the relationship between language and behaviour in the lives of people for whom social resources are differentially deployed. Do the earliest experiences of language lock one into a language "set" from which it is difficult or impossible to shift? Does positioning in poorer circumstances lead to greater difficulty in coping with the language of those in more affluent circumstances? Is the difficulty reciprocated? How does a mother's limited education influence children's speech and their subsequent cognitive development? Are there verbal deficiencies evident in the speech of working-class children, as compared with middle-class children? If there is verbal deficit, is this pervasive or contextually specific?

Empirical research on many questions raised by Bernstein's theorizing is still relatively sparse. There were a number of attempts in the seventies to relate Bernstein's codes to what Robinson (1978) called the "representational function of language", the expression of factual as compared with affective data. However, comprehension of language received little attention nor, it would seem, did affective language expression. By the eighties, research related to syntactic differences in the language used by different social classes had given way to research into language interactions and the functional uses of speech.

It is the research literature from the sixties and seventies into Bernstein's theory which has most direct relevance for the needs of the present study, namely, to pursue indices of class differences in language use as compared with differences relatable to delinquency. An overview of this research shows that differences between the speech characteristics of working-class and middle-class children have, indeed, been demonstrated, although the differences have tended to be seen as quantitative rather than differences in kind.

Researchers like Deutsch, Fishman, Kogan, North, and Whiteman (1964), Stodolsky (1965), and Lesser, Fifer, and Clark (1965) found children from the working class to differ in the amount of their vocabulary from middle-class children. Moreover, Hart (1982) reported evidence that, over time, advantaged children were regularly adding new words to their working vocabulary more often than were disadvantaged children. Similar findings have obtained for adults. For example, Russell (1970) showed that middle-class male 20-year-olds produced more words than did those from the working class.

Also, the work of Heider (1971) suggested that middle-class children may be more effective encoders and decoders of messages concerning factual information, and across various studies there have been findings of semantic, lexical, and grammatical differences in the language productions of middle-class and working-class children, as well as differences in the amount of speech produced. Bruck (1972), comparing the language skills of young middle-class and (lower) working-class Canadian children, factor analyzed 26 scores which yielded factors of output (knowing when to speak), relevant content (knowing what to say), ambiguous and elaborated speech and egocentric information (knowing how to say it). She concluded that, while working-class children have the same ability to understand grammatical structures, they have more difficulty producing them than do middle-class children. She concluded, also, that working-class children have more difficulty evaluating the communicative demands of the classroom than do middle-class children.

The matter of under what conditions and in what context data are collected is very important in this area. Differences between the language productions of middle-class and working-class children narrow or sometimes disappear, if highly intelligent working-class children educated in the same school as middle-class children are the subjects (Davis, 1973); when narrative essays become the task (Owens, 1973; 1976); and, lexical differences in oral speech can disappear if content is limited (Poole, 1973). However, as Robinson (1978) pointed out, researchers often have used topics that did not tax subjects nor push them towards informal speech, thus failing to establish whether working-class children more rapidly lapse into informal speech than do middle-class children.

Of particular note is that, irrespective of context and task, measures of syntactic complexity - number and complexity of subordinate clauses used - have been especially productive; subordination has frequently discriminated between classes (Kiellerup, 1969; Russell, 1970, 1974; Poole, 1973; Brotherton, 1975). Consequently, it warrants attention in this research.

In overview, Robinson (1978) saw such findings as evidence not necessarily of persons using language in different ways, but of them using it in similar ways, in different amounts. Labov (1979), in turn, questioned whether elaborated code, which he suggested is "turgid, redundant and empty", is not simply elaborated style rather than a superior code or system. Similarly, Rushton and Young (1975), who looked at working-class and middle-class teenagers' productions of essays, concluded from their findings that, if a restricted code of working-class language exists, it would seem to be less restricted than was previously supposed. Further, Robinson (1978) concluded from his review of research evidence, that it may be useful to think in terms of developmental lag in the speech of working-class children. On the question of whether codes exist as Bernstein conceptualized them, it seems fair to say that research is incomplete; the researching of speech codes was far from exhausted before interests moved, in this decade, to the contexts in which speech changes, to the purposes for which language is used, and to the aetiology of speech differences between disadvantaged and advantaged children.

What is important for the present study is that findings of differences in language used by the middle class and the working class are incontrovertible; and, while there is contention that difference may be largely in amount rather than

kind, it is suggested that a person whose speech is even quantitatively different from that of another may be experiencing his or her world of language very differently as a result.

Also important to the present study is an issue raised by Bernstein's theory which remains largely unresearched with respect to social-class groups (or with other groups) but becomes provocative if applied to delinquents and nondelinquents. It is the issue of whether language has different affective connotations for different groups. One study by Zigler and Kanzer (1962) did touch upon this issue with respect to class. Their findings not only suggest in line with Bernstein's ideas that the (lower) working class rely on voice characteristics like tone of voice more than do the middle class, but that, in reacting differently to identical stimuli, working-class and middle-class children may be responding to affective connotations differentially learned. Affective connotations, in this context, refers to Bernstein's conceptualization of those with restricted code having a predilection for emotive rather than logical components of speech. In the present study, the question will be asked whether language activity produces different affective responses in delinquents from those produced in nondelinquents, irrespective of class, but the "affective responses" of this question refers to something different from Bernstein's meaning. It refers to whether delinquents, in comparison with nondelinquents, eschew language activity. Certainly, no research to date has elucidated this.

1.6 *Interim Summary*

To this stage, it has been argued that research findings concerning the educational problems of delinquents and findings from research into their

intellectual abilities suggest that delinquents, as a group, have likely deficit in language. Questions were then raised about how this might be manifested in day-to-day behaviour and whether a cognitive style might emerge where a preference for action rather than words develops. Later, one of the questions raised by Bernstein's theory, whether the affective components of language may have a differential pull for persons of different social strata, was modified to another question : whether there could be a negative affective appraisal of language by delinquents as compared with nondelinquents? The attitudes to language of delinquent and nondelinquent groups could reasonably be explored.

Further, since social class was considered to be likely to contribute importantly to the language profile of persons; to date, research into the language abilities of young offenders has largely ignored issues of class; and past evidence concerning their language may be confounded by the fact that adjudicated offenders most often come from the working class, a theory outlining what differences in language might be expected on the basis of class - the theory of Bernstein - and relevant research from this theory were discussed. It was concluded that one would expect differences between middle-class and working-class subjects in language production: A more limited vocabulary size would be expected, as would lower speech output, and less complexity of speech as evidenced by subordinate clauses, for the working class.

Now, unless the language deficits demonstrated by adjudicated delinquents can be accounted for by the high proportion of working class in their ranks, one would need at this stage to consider whether the delinquency process itself might result from language problems. It could be that language does relate directly to

delinquency other than through class, social-class influences in turn maximizing or minimizing differences in verbal functioning. The work of Luria on the relationship between language and behavioural self-control suggests a means, provides pointers to the mechanism, of how language could be implicated in the occurrence of delinquency.

1.7 *Language and Behavioural Self-Control*

The literature to follow addresses the verbal self-regulation of behaviour, the impact of overt speech and silent speech (verbal thought) on the control of motor movement. From a detailing of the theory and research in this area, clues are to be sought about how language deficits could interfere with the process of control and so contribute to delinquent behaviour. This overview is given so that a theory of delinquency can ultimately be developed in this study.

The Theory of Vygotsky Extended by Luria

In contrast to Piaget (1964/67) who took the position that language is neither necessary nor sufficient for the development of thought, the Russian psychologist, Vygotsky (1934/62), saw language as playing a decisive role in the development of thought and the organization of behaviour. A key concept in this theorizing was the notion that a child's egocentric or private speech, overt language directed to the self, could be a precursor developmentally of interiorized speech, and could have the function of cognitive self-guidance. Largely following Vygotsky, Luria (1959, 1960, 1961) proposed a model for the development of a child's ability to direct his or her behaviour through verbal instruction. The model has two dimensions which refer to a progression or developmental change in the source of verbal control, and in the form of control which speech exercises on

motor behaviour.

Firstly, from Vygotzky, Luria adopted the idea of a progression from external to internal control, which proceeds through response only to another's speech, to response to overt self-speech, then response to covert or inner speech. Secondly, and related to the progression from external to internal control, from Pavlov's ideas of signal systems (cited by Miller, Shelton,and Flavell, 1970; and Harris, 1979), Luria hypothesized that speech at first acts as a physical stimulus, impelling behaviour. There is a response to the motoric aspects of speech, to the sheer sound in hearing, and to motor excitation when one is the producer of speech. Then, later in development, the semantic, meaning component of speech becomes dominant. In Pavlov's terms, the locus of verbal control shifts from the first signal system to the second signal system.

Why language should be an optimal choice for regulatory planning in Russian theorizing has been explored by Harris (1979). Harris pointed out that, as a "signal of signals", it has a broad, generalized character; it helps the process of orientation by isolating relevant stimuli, so allowing for a deeper analysis of reality. Further, she emphasized that the structural aspects of speech enhance planning, suggesting that "syntactic structures permit both a temporal and spatial organization of activity". She observed, too, that the speech system "carries the primary weight of social and interpersonal communication" (pp.70-71). Also, Luria suggested that the motoric aspects of the speech system mature more rapidly than does the general motor system, so that it is easier for a young child to vocalize on command, than to perform some other motor action. It is the more rapid development of the motoric components of speech which is said to make early

vocal regulation of motor behaviour possible.

The form of control, in its change from motoric to semantic aspects of speech, and interrelated with the progressive internalization of speech, results, as Kohlberg, Yaeger, and Hjertholm suggested, in "the increased capacity to use speech, (a) to guide or discriminate alternative actions (rather than to directly trigger response) and, (b) to plan or precede action (rather than to accompany it)" (1968, p.699).

In effect, Luria's model would suggest that during the progression from external to internal control and from motoric to semantic aspects of speech, in the first stage, the speech of others can initiate and direct behaviour but not inhibit or stop it. In the second stage, children's own speech can control their behaviour to a certain extent, in that the motor component of their speech will trigger action, but it will not inhibit it, regardless of semantic content. In the final stage of development, the semantic content of private speech becomes dominant and directs behaviour.

Problems in Conceptualization and Researching of the Theory

A number of problems accrue to the conceptualization of the theory presented, and to practical demonstrations of self-regulation through language, especially when language is internalized. As Harris (1979) pointed out, the most critical problem confronting the Russian conceptualization of self-regulation has been the lack of precise and experimentally verifiable analysis of how speech actually comes to regulate behaviour. Moreover, it would need to be demonstrated that the directive (planning) functions of the speech system are unique and not able

to be undertaken by other systems. Such demonstration has, to date, been lacking.

Also, while certainly many researches into the function of private (egocentric) speech have implicated overt speech in the process of self-regulation, there have been few studies giving sole focus to internalized, verbal speech and its relation to planning since, as Fuson aptly pointed out, "one needs to know that a verbalization was actually produced before we can infer its effectiveness as a mediator" (1979, p.193). Even when language is externalized, however, researchers like Rubin and Dyck (1980) have pointed to the dilemma inherent in drawing conclusions that private speech emitted before or during ongoing activity has actually helped regulate behaviour, since there is no way of knowing whether the behaviours would not have occurred had the speech not been emitted.

Allied to the fact that overt speech has most often been studied because it can at least be demonstrated first hand, there has been a concentration on developmental changes in self-regulation in children, in whom private speech can presumably more often be captured. The classic experiment to test for the developmental changes hypothesized by Luria has been a two-choice bulb-pressing task, in which lights of two colours appear briefly and randomly. The child is instructed to press a rubber bulb, once, when one colour appears, but not to press when the other colour appears. Luria found that the performance of two-and-a-half-to-three-year-olds is poor, but more so if they are required to self-instruct "press" rather than to be given instructions by the experimenter. By approximately three and a half, children can overtly self-instruct "press" so that performance is better than if they respond silently; however, they react with more pressing, not less, to "don't press" self-instruction. Their self-instructional

speech seems to impel action rather than the content of the speech inhibiting it at this stage. Luria reported that, by about four years, self-instruction can facilitate or inhibit a response, and shortly afterwards children's "speech-for-self" becomes internalized and covert verbalization directs behaviour. What length of time was thought by Luria to elapse between the establishment of the semantic effect and the internalization of verbal control was, however, subsequently questioned by Miller et al. (1970), who pointed to the lack of clarity concerning this.

Findings Pertaining to Children

"Replications" of the Soviet work were frequently positive in findings but not universally supportive of the Lurian model. This led to a questioning of whether the experiments conducted were, indeed, replications. Both Miller et al. (1970) and Meichenbaum (1975) mentioned the difficulty in comparing Luria's work with replications, since translations did not contain important details concerning subject populations, methodology, and results. Also, noncomparable procedural practices by Western researchers were questioned by Wozniak (1972), who, for example, criticized the use of "warm-up" procedures and instructions to subjects to precede motor movements by verbal self-instruction, since children's spontaneous responses to instructions were the prime interest for Luria. There was a questioning too, of whether the nature of the task or the child's competence on it could be influencing findings. The issue was one of whether tasks could sufficiently display the phenomenon sought. Meichenbaum (1975), after obtaining negative results with a Lurian bulb-pressing task, asked whether a task which requires simple repetitive and rapid motor responding was suitable for illustrating the mediating role of children's verbalizations. Using a finger-tapping task

employed by Lovaas in 1964, and researching with Goodman (Meichenbaum and Goodman, 1969a), he obtained findings consistent with Luria's position. On the basis of subsequent experimentation, Meichenbaum (1975) suggested, also, that perhaps progression from overt to covert self-verbalization is not related to a child's age, but is more closely related to the child's competence and proficiency on particular tasks.

Irrespective of questions concerning the relationship of age to verbal self-regulation, the *sequence* of development hypothesized by the Soviet psychologists has been supported by the findings from several researches. Evidence of the developmental trend for private speech to eventually "go underground" to become internal thought has been obtained from the previously cited study of Kohlberg et al. (1968), and from more recent studies by Pechman (1978), Berk and Garvin (1984), and Frauenglass and Diaz (1985). For example, the latter authors found that as the number of self-regulatory utterances by children declined, the number of mutterings and whispers increased, giving credence to the notion that, with age, private speech does not disappear but becomes the basis for inner speech.

Also, the self-guiding function of private speech has received some endorsement from the findings from a number of studies that the frequency of its occurrence increases with difficult tasks (Kohlberg et al., 1968; Deutsch and Stein, 1972; Zivin, 1972; Dickie, 1973; Goodman, 1981; Berk and Garvin, 1984), and in situations where adults remain at a distance and do not take over control functions (Kohlberg et al.,1968; Berk and Garvin, 1984). In addition, the work of Meacham (1979) and Rubin (1979) suggests that the place most likely to show up

speech that appears self-regulatory by content is where there is a transition - behaviour following incorrectly and following correctly one adult-given instruction (Meacham), and in between different types of freely chosen play activities (Rubin). Vocalizations are, thus, seen to cue the next sequence of action. Complementary findings by Berk (1986) are noteworthy. Using a time sampling of children's private speech, motor accompaniment to a task, and level of attention recorded by observers during maths periods in a classroom, she demonstrated that the use of task-relevant private speech predicted greater attentional focus and the reduction of extraneous motor behaviours in elementary school children.

From these studies it seems that language may steer children to what to attend to, especially when change or difficulty occurs. How this happens and under what range of conditions are still the underlying questions, although regulation through speech impulse and rhythm is one direction mooted by Zivin (1979) to be important for future research. The literature in this area is also giving new focus to the timing of speech and motor acts in conjunction with fine-grained sets of speech categories, to contextual variables like familiarity of task, to the social relevance of self-regulatory speech, and to the need for naturalistic studies on the spontaneous occurrence of self-regulatory speech to establish its importance in day-to-day behaviours.

This overview of research has pertained to young children. There is a dearth of studies of adolescents or adults and self-regulation through speech, but the set of studies by Rondal (1976) of older children and adults, which appears unique in the area, will be seen to show certain agreements with findings from child research.

Findings Pertaining to Older Children and Adults

In the course of a series of fifteen experiments into the regulatory aspects of speech, Rondal (1976) conducted two experiments with adults, one of these also including a sample of older children. In the first of these two studies which was of adults only, subjects were asked to perform, silently, three Luria bulb-pressing motor tasks, at the end of which they were to relate verbally the content of their "mental accompaniment" during the performance. Rondal found that the probability of covert verbalization appeared to increase with the difficulty of the task, although there was no systematic relationship between covert verbalization and the quality of motor performance.

Recent arguments by Frauenglass and Diaz (1985) can be related to these findings. They countered suggestions that results from empirical studies, which have not revealed positive effects on task performance of children's private speech, challenge Vygotsky's idea that private speech represents a tool to plan and to guide. They argued that, because private speech has been found to increase with task difficulty, but so also does failure on difficult tasks, the finding of a lack of a positive effect of private speech on performance quality at such times could be an immediate function of the task difficulty. Moreover, they asserted that the effects of using private speech during cognitive tasks may not be evident *at the time the speech is being used.* This implies that, over longer term, eventual efficacy in the task performance could result from the planning set in motion from that time. Perhaps planning through internalized speech might result in similar effects.

In the second study, Rondal (1976) used fifteen adults and five older

children (between 10 and 13 years), and made electromyographic recordings of inner verbal accompaniment during the same tasks as in the first study. Also, subjects were to detail, after the event, any inner verbalizations during performance. Objective verification of the introspective reports were to be provided by the electromyographic technique. Rondal found, interestingly, that inner verbal accompaniment was not constantly taking place and often tended to disappear before the end of motor performance. He suggested, also, that "in some cases, inner verbal accompaniment manifests itself only at the beginning of motor performance. The S seems to proceed to a verbal analysis of the task to be performed and then relies only on his sensory - motor system in the performance of the rest of the task. Verbal responses may further reappear from time to time, possibly in recall of the instructions if the S for some reason becomes confused or if something unexpected happens" (p.27). Such findings would appear to approximate what is being found from studies of overt (private) speech with children. Rondal concluded that inner verbal speech had been found to be clearly related to performance of motor tasks, particularly when tasks were of a sufficient level of difficulty. His overall conclusions from his studies were, however, guarded. He suggested that in relation to adults, the experimental model used had not permitted him to demonstrate more than a close correlation between motor performance and inner verbal accompaniment, a causal relationship remaining to be proved. This applies, generally, to research in this area, however.

Now, all that has been said to this point concerning the regulatory aspects of speech pertains to normal populations. The implications of verbal self-regulation for populations with control problems, like impulsive children or

delinquent youth, seem apparent. They should demonstrate less ability to negotiate Lurian tasks than normal populations. To date, there has been a focus by researchers on children with control difficulties. Studies of older populations have, instead, been concentrated on remediation of deficits in control though "self-talk" programs rather than on investigations of mediational deficit.

Findings Pertaining to Children with Control Problems

Those who have researched impulsivity in children have often looked at issues other than language. Reviews, for example, by Messer (1976), Berkowitz (1982), and Campbell, Andrews, and Fuller (1983) indicate that focus has been given to factors like neurological signs (Voorhees, 1981), frustration (Maccoby, 1980), or perceptual correlates (Drake, 1970; Craighead and Wilcoxon-Craighead, 1978), or else there has been a concentration on the outcome of therapeutic procedures to counter what have been presumed to be mediation problems. A small number of researchers have, however, studied concurrently the verbalization and behaviour of children with more limited behavioural control.

Luria (1959), reporting his work and the unpublished work of a colleague, Homskaja, indicated that hyperkynetic, impulsive children were found to be deficient in their verbal control of nonverbal behaviour as measured by Lurian tasks. To test this relationship, Meichenbaum conducted two researches (Meichenbaum and Goodman, 1969b; Meichenbaum, 1971) where conceptual tempo was examined in conjunction with Lurian tasks. Meichenbaum and Goodman defined conceptual tempo as "the S's tendency to reflect over alternative response possibilities before offering an answer, rather than responding impulsively" (1969b, p.785). The index of conceptual tempo used involved a categorizing into

cognitively reflective or cognitively impulsive on Kagan's (1966) Matching Familiar Figures test. This test is to select from among a number of pictures one that is identical to a standard picture. Subjects' response time to their first decision and number of errors are the criteria used.

In the first study, (Meichenbaum and Goodman, 1969b), kindergarteners were given a Luria task and a Lovaas finger-tapping task. Two important differences were found between groups. Firstly, in terms of efficacy of responding: Only 40% of the cognitively impulsive children but 85% of the cognitively reflective children met a standard of 90% correct responding on the Luria task. The cognitively impulsive children had, thus, shown less evidence of being able to guide their behaviour verbally. Secondly, there was evidence of more use of the motor components than the meaning components of speech on the part of the cognitively impulsive children: Meichenbaum and Goodman reported that the impulsive children more often used words as a metronome effect, tapping each time they uttered a word, while the reflective group used the word as a cue, tapping several times for each self-instruction under the "faster" and "slower" conditions, suggesting a greater reliance on the semantic aspect of the self-instructions.

In the second study (Meichenbaum, 1971), which was taken out of the laboratory so that naturally occurring instances of private speech could be observed, a sample of pre-schoolers was divided into cognitively impulsive and reflective groups, as in the previous study, and the groups were equated for age, intelligence and socioeconomic status. The purpose of the study was to determine whether the child's private speech, which was to include "singing, chanting,

emitting real and nonsense words, verbalized fantasies and the expression of a variety of motivational and affective states" (Meichenbaum, 1975, p.24), would be differently distributed within the two groups. The private speech and the play behaviour of the sample were recorded.

Again, two findings of importance emerged: There was no difference in the quantity of the verbalizations of the two groups but they appeared to use their private speech differently. Comparing the private speech recorded with a hierarchical grading of private speech devised by Kohlberg et al. (1968), the speech of the cognitively impulsive group was found to consist of 64% of the most immature, self-stimulatory content, while the cognitively reflective group showed significantly more outer-directed and self-regulatory private speech and inaudible mutterings. Also, the private speech of the reflective children was found to be significantly more responsive to situational demands. For example, in situations where problem solving was required, the self-directing speech of reflectives increased from 11% to 25% but not so for impulsive children. Meichenbaum (1971) concluded that the reflective group used their private speech in a more mature, self-guiding fashion than did the cognitively impulsive subjects. On the basis of the two studies, Meichenbaum was led to hypothesize that "impulsive children do not habitually and spontaneously analyse their experience in verbal terms and do not formulate and internalize rules that might guide them in new situations" (1975, p.25).

Two studies of aggressive children by Camp (Camp, Zimet, van Doorninck, and Dahlem, 1977) and Camp (1977) which followed, added to the Meichenbaum findings. Camp et al. (1977) noted that a number of studies had related aggressive

behaviour problems in early school years to later delinquency, but, whereas aggressive problems at the time of school entrance may be predictive of delinquency, academic difficulty does not predict later delinquency until grades 4-6 (Conger and Miller, 1966). They saw this as suggesting either of two things. It could mean that the verbal deficit which they perceived as characteristic of delinquents only develops as the child gets older. It could also mean that verbal development may actually be delayed but the impact of the delay on school learning may not be evident until later.

In Camp's first study (Camp et al., 1977), he and his colleagues wanted to establish whether there was any indication of generalized verbal deficit in young aggressive boys (a population at risk for later delinquency). Using a control group of normals in addition to aggressive boys, the researchers administered subtests of the Wechsler Intelligence Scale for Children, subscales of the Illinois Test of Psycholinguistic Abilities including the auditory reception subscale, and the reading portion of the Wide Range Achievement Test. The results failed to indicate any *generalized* deficit in verbal development among young aggressive boys. However, it is noteworthy that the aggressive group performed poorly on reading. It is also noteworthy that their scores on the auditory reception subscale of the Illinois Test of Psycholinguistic Abilities, which measures ability to attend to and comprehend verbal material, were found to be significantly worse with age.

Camp et al. (1977) suggested that the latter finding could result from a failure to mature from "associative" to "cognitive processing" within the model of White (1965). On the other hand, Berkowitz (1982) interpreted these results to mean regression in one area of cognitive mediation. A simpler explanation,

altogether, would be that aggressive (or incipiently delinquent) youngsters may learn to "close off" from the sound of speech, this becoming accentuated as they get older and are confronted with the school system.

In a second study of 6-8 year old aggressive boys and normals, Camp (1977) developed the idea (from Jensen, 1966) that, although the aggressive children may be found to have adequate verbal ability, they could fail to use verbal mediation strategies in problem-solving situations, reflecting a deficiency in the development of verbal mediation. Camp defined verbal mediation after Jensen and Meichenbaum: "talking to oneself to guide problem solving (Jensen, 1966) or to guide other behaviour (Meichenbaum, 1975)" (Camp, 1977 p.145). Further, he pointed out that, although the activity may become overt when difficult problems are being dealt with, the process is normally automatic and takes place subvocally, below the level of awareness.

In the second research (Camp, 1977), in which measures used included measures of verbal ability and reading achievement, Lurian tasks used by Meichenbaum and Goodman (1969a; 1969b) and a "Simon Says" game were also included. It was found that aggressive boys who were superior to normals in slowing finger-tapping speed under overt self-verbalization, showed decreased ability to slow down when verbalization was covert. (Meichenbaum and Goodman, 1969a; 1969b, had reported similar findings with their impulsive children.) Within the Russian framework, this would be indicative of the control deficiency which occurs before covert linguistic control is properly established.

Camp (1977) found also that aggressive boys talked more but showed a

larger proportion of immature, nonfunctional private speech, much as Meichenbaum had reported, and speculated that the intrusion of such speech may interfere with the production of meaningful verbalizations. This would impede a child's ability to inhibit the first responses to stimuli and, as a consequence, his or her ability to control associative processing. It is interesting that the phenomenon of a high proportion of irrelevant speech reported by Camp and by Meichenbaum seems, on further investigation, to have been noted in a number of researches where impulsivity was targeted, although self-talk was not necessarily being observed. Campbell et al. (1983), in their review of impulsivity research, pointed to problems of attending behaviour, including off-task irrelevant talk and movement being reported by Douglas, 1972; Campbell, 1973; Margolis, Brannigan, and Paston, 1977; and Kendall and Wilcox, 1979.

To summarize the findings from Camp's second study: Vocabulary, immature and irrelevant private speech, fast reaction times, inhibition errors, and speed of responding during covert commands for slowing were among discriminators of the classification as aggressive. Camp interpreted the results of the study as being consistent with young aggressive boys failing to use verbal mediation actively in many situations where it would have been appropriate. Also, he suggested that when it did occur, covert mediational activity may have failed to achieve control over behaviour. He hypothesized that both learning and behaviour problems in aggressive boys may be "symptomatic of an ineffective linguistic control system" (1977, p.145).

If the two important sources of data discussed about children with control problems are now viewed together, the studies by Meichenbaum and by Camp,

there are common findings of cognitively impulsive and aggressive children using private speech differently, less effectively, and at an apparently lower level in the presumed regulation of behaviour than do normals.

Before drawing together conclusions from this section, one last issue bears consideration, namely, whether social-class membership has been found to relate to verbal mediation.

Verbal Self-Regulation and Social Class

There is most certainly a dearth of research in this area, although one study by Berk and Garvin (1984) did examine private speech among low-income five-to-ten-year-old Appalatian children and relate it to findings concerning predominantly middle-class children in the study by Kohlberg et al. (1968), previously mentioned.

Using the Kohlberg hierarchy of speech categories (Kohlberg et al., 1968), Berk and Garvin (1984) reported that the Appalatian children displayed higher levels of more immature and lower levels of more mature categories of private speech at similar ages than had the Kohlberg et al. sample. However, since private speech categorized as "describing one's own activity/self-guidance" occurred with similar frequency in the two studies, yet Berk and Garvin concluded, also, that this category could be a developmental prerequisite to the internalization of cognitive processes, this suggests that any difference between the two groups in developmental level would be difficult to justify as being more than temporary: Both groups could be construed as having been in the process of transition from less mature to more mature verbal mediation.

Given the paucity of research evidence in this area and the results from the comparison of the two studies just cited, it seems reasonable to speculate that self-regulation may not vary as a function of social class, save for transient early developmental differences.

1.7.1 *Conclusions from Research into Verbal Self-Regulation and Expectations Concerning the Verbal Self-Regulatory Performance of Delinquents*

Since the studies by Rondal (1976) of normal adults showed results similar to findings concerning normal children, one could make an assumption that mechanisms for children and for adults (and adolescents) would likewise be similar for populations with control problems. If this were so, differences would be expected between delinquents and nondelinquents in the degree to which they use words to plan and to orient their behaviours.

Now, if poorer language mediation is expected for delinquents, how would it most likely be manifested, given the research findings to date? The most recurrent finding is that self-verbalization (overt and covert) increases as task difficulty occurs, or when there are transitions or differences encountered in tasks. So, if focus were to be given to self-instruction at the beginning of a sequence and/or a component of a sequence of action (transitions), less frequent self-instruction should be evident on the part of delinquents than nondelinquents. If self-verbalization in those situations is, in effect, internal verbal planning, it should follow that demonstration of any pause to think before going on to action or to any part of an action sequence would less often occur with delinquents than nondelinquents, and, as a consequence, that subsequent problem solving by delinquents would be less efficacious.

The next important issue for consideration is whether these effects would be likely to be observed in all problem-solving situations. Certainly, findings presented in section 1.2.2, pertaining to delinquents performing better on performance than on verbal subtests of the Wechsler intelligence scales, suggested that they cope well with many tasks. Therefore, the effects sought would presumably not be general but situationally specific. If specific, then where would they be most likely to occur? It is suggested that, since language has a large social component, a logical option to explore would be whether verbal mediation is less demonstrable in interpersonal situations than in noninterpersonal situations. There are two quite different studies, the findings of which could support a notion that interpersonal situations may present some concern for delinquents.

The findings reported earlier from Camp et al.'s (1977) research that, compared to normals, aggressive children showed verbal auditory reception problems with increasing age, could be construed as a progressive avoidance or rejection of interpersonal verbal stimuli. Also, a study of selective attention of delinquents by Rosenthal and Lani, in which it was concluded that "delinquents are better at tuning out people as stimuli, when compared with their nondelinquent peers" (1981, p.216), gives credibility to an investigation of whether people-related material, like language and interpersonal problem solving, may be differentially responded to and used by delinquents and nondelinquents.

To this point, it is suggested that evidence of verbal mediation problems for delinquents may be found in indications of pauses to think before an action sequence or different parts of it, and that this effect may be specific to interpersonal situations. What follows now is a formulation of segments of the theory of

delinquency which provides a rationale for those propositions. The theory, gradually being developed to guide this study, will finally be brought together at the end of this chapter.

1.8 *Theory of Delinquency : Preliminary Considerations*

As has been reported in this section, Meichenbaum and others have pointed to the immature verbal characteristics of cognitively impulsive children, which intuitively suggest a developmental delay. If it is delay, what causes the delay is open to conjecture. A possible explanation is physiological vulnerability, whilst another is environmentally conditioned reaction, perhaps to stress. It could be that a negative affective reaction to the use of language occurs when speech is developing, if the home climate is a stressful one at that time. Lack of sufficient self-stimulation or a closing-off from the language stimulation of others could promote a language delay which would, importantly, be perpetuated as the child grew, because of reticence in verbal situations. The ideas of Andrew (1973), detailed earlier, about a habitual use of avoidance producing a decline in verbal ability, are pertinent to what is being suggested here. The delay would also impinge on the level of speech-for-self, this in turn affecting behavioural regulation through language.

Notwithstanding a growing lag in language skill, vocabulary would, nevertheless, show some increase with experience gained. Also, the capacity for self-regulation would presumably grow. Indeed, it would seem unlikely that a person past early childhood would not have progressed to a stage where inner thought and semantic content would be able to influence his or her control of behavior. Whether or in what situations he or she would use this capacity seems a

more focal issue. It could be that a person calls on the capacity to control behavior by inner speech relative to habits formed - to a cognitive style. For example, he or she may have consolidated habits of more often responding to the motor aspects (to the sound or impulse) of speech, or more often to its semantic aspects, since control or lack of control is never constant, yet shows consistencies. In addition, rather than being related to the specifics of the task the person is attempting and to proficiency on it, as Meichenbaum (1975) questioned with respect to children, perhaps verbal control may be related to the emotional evocativeness of the task, for example, to its stress-relatedness.

It is suggested that young offenders are persons who have formed particular habits of responding more often to the motoric aspects of speech, the sound of speech signalling remembrance of past stress situations, and that interpersonal situations which are usually language laden or conjure past language interchanges constitute the majority of stress situations encountered by them. Indeed, outside of physical survival events, it is difficult to countenance stress situations that would not relate to other persons and, by association, to their expectations, values, or rules. Moreover, the habits formed and their strength would probably be a function of the frequency and amount (as well as the timing) of the early stress experienced.

That the idea of delinquents having formed habits of responding motorically to speech may not be preposterous to those who have dealt with delinquents is suggested by similar comments made by Little and Kendall that "from observation of the behavior of delinquents, one is led to speculate that, for many of these youngsters, words serve more of an impellant function than an inhibitory function

as described by Luria (1961)" (1979, p.107).

To summarize, an important proposition of the theory being formulated is that a lingering propensity for motoric responding occurs as habits of closing-off from language-loaded interpersonal situations become entrenched. This tendency of itself would be unlikely to lead to delinquency. For such a likelihood to increase, a second proposition is needed, namely, that the motoric responding (which selectively occurs in interpersonal situations) would result in a truncating of problem solving related to people. It is a theory of relatively thoughtless delinquency. What follows is a consideration of the parameters of interpersonal cognitive problem solving and evidence of its potential relevance to delinquency.

1.9 *Interpersonal Cognitive Problem Solving*

An innovative problem-solving literature burgeoning from the work of Spivack, Platt, and Shure (1976) and their ongoing projects at the Hahnemann Medical College in Philadelphia has centred attention on the separateness of skills that are involved in interpersonal problem solving from those that are impersonal. Research has begun into the emergence of the different skills involved, into the identification of groups who have difficulty coping with interpersonal problems, and into remediation of problems in living through teaching the components of these skills that are lacking in the repertoire of the persons concerned.

Spivack et al. (1976) suggested that a group of mediating, cognitive processes occur that define ability to solve interpersonal problems. Further, these mediating processes, learned from experience in our culture, for example, with child rearers, are different from abstract, impersonal, cognitive processes.

These contentions were subsequently supported by Little and Kendall who, on overview of the area wrote "there is no evidence to support an assumption that impersonal and interpersonal problem-solving skills tap the same cognitive structures or that individuals who readily solve impersonal problems necessarily are similarly competent with social situations". (1979, p.82).

Spivack et al. (1976) established that measures of interpersonal cognitive problem-solving skills and of general intelligence and originality of thought consistently show low correlations. Also, they found evidence that there would appear to be a series of different interpersonal problem-solving skills and that each skill may contribute to the total picture of social adjustment as a function of age, different skills emerging at different ages. By empirical means, they divide these skills into six, as follows: sensitivity to interpersonal problems, said to involve sensitivity to social cues; alternative solution thinking, the key feature of which is generating different solution possibilities in an interpersonal situation as opposed to the ability to recognise what might be the "best solution"; means-end thinking, the skill of articulating the step-by-step means that may be necessary in order to carry out the solution to any interpersonal problem; consequential thinking, the consideration of the consequences of one's social acts in terms of their impact both on other people and on oneself, before taking action; causal thinking, said to reflect the degree to which a person understands and is "ready to appreciate that how one feels and acts may have been influenced by (and in turn may have influenced) how others feel and act"; and multiple perspective taking, the ability to assume roles. The skills are tested by a number of procedures, for example, the requirement of the subject to complete stories or to conceptualize options to typical real-life problems.

There was some evidence presented by Spivack et al. (1976) that the different skills do emerge at different ages, and indication that lack of facility with a skill may be either the result of a failure in having learned the skill, or else the result of an emotion obviating the use of it. The authors reported also (1976), that interpersonal cognitive problem-solving skills seem not to be primarily related to class. While in 1970 Shure and Spivack had found that lower-class nursery school children gave fewer solutions, and fewer categories of relevant and adaptable solutions to interpersonal problems than middle-class children, their results showed as well, that the less well adjusted of the children, both from middle class and from working class, also gave fewer solutions and solution categories. A subsequent study by Shure and Spivack (1972) indicated that means-ends thinking skills were related to adjustment level, irrespective of class (and intellectual level), the poorly adjusted of both middle and working class functioning less well on the interpersonal skills tasks. Although the relationship of class to efficacy in interpersonal problem solving remains largely indeterminate, too few studies having yet been conducted to test its intricacies, the results particularly from Shure and Spivack's latter study do suggest that any relationship between social class and interpersonal problem-solving skills is likely to be attenuated and indirect.

To date, research from the Hahnemann centre has been concentrated on children and adults, with fewer studies having been made of adolescents, but results suggest, generally, that maladjusted populations can be discriminated from more adjusted populations in terms of interpersonal problem-solving skills functioning.

Interpersonal Cognitive Problem Solving and Delinquency

The conceptual relevance of interpersonal cognitive problem solving to delinquency can probably best be demonstrated from an anecdote by Spivack et al. (1976) of a scene easily recognized by those who have worked with delinquents.

> One of ... (the authors) ... was engaged in therapy with a delinquent teenage boy, who left the campus of a residential treatment centre without permission. When discovered on his way to a nearby city, the boy was not upset or concerned. He said he had wanted to purchase something and so decided to get it. His explanation seemed weak in light of the circumstances - that the route into town the youngster selected was in fact dangerous, that going AWOL was a serious offence (the consequences of which would interfere with other things he wished to do), and that by the time of his arrival in town the stores would have been closed anyway. Therefore, an attempt was made to explore the entire event "therapeutically". During the week following this episode, the therapist explored with the youngster his awareness of the consequences of what he did, his possible "unconscious" motives, and whether he might have thought of legitimate or more practical ways to get what he wanted. The therapist hypothesized that the act might signify a hostile desire to worry others or a symbolic way of challenging authority and social limits, or perhaps even a masochistic need to be caught and punished.
>
> During therapy sessions, questions and answers revealed nothing in support of such conjecture. Repeatedly, the youngster indicated that

> he had wanted something, knew "they" had it in town and so decided to "take off". There was no evidence of anger or resentment associated with his action, nor even a compelling need for what he had wanted at that moment. When asked, he said he had not thought of what might happen when he returned and was confronted by the staff. He smiled in a self-deprecating manner when it was pointed out how his method would not have worked, and seemed genuinely apologetic at the inconvenience he had caused others. His most frequent response to questions about what he had done was, "I didn't think of that at the time" or "No, that didn't occur to me". Only slowly did the therapist come to accept the possibility that what the youngster was offering by way of explanation might in fact explain what happened. The simplest explanation for his behaviour was that he just did not think and that it was lack of a certain kind of thought that had gotten him into difficulty. (Preface, pp. x-xi).

That insufficiency in thought related to interpersonal skills could be part of a delinquency process is suggested by research findings from a number of studies which have shown that populations displaying impulsivity, behavioural difficulty, or delinquency, also show less interpersonal problem-solving skill than normals.

Research With Children

In a study previously cited, Shure and Spivack (1970) found differences in the number and quality of alternative solutions to real-life problems in children as young as four years. Further, and, importantly, regardless of social-class level, children showing poor school adjustment, particularly those least able to delay

gratification, offered a smaller number and a narrower range of solutions.

Again, in a further study, Shure, Spivack, and Jaeger (1971) examined the responses of four-year-old disadvantaged children, and found that those children judged by teachers to be less well adjusted also gave fewer problem solutions and a narrower range of types of solutions to real-life problems. Reviewing their research results in a later article, Shure and Spivack pointed out that, while impulsive four-year-old youngsters have been found to be less able to generate alternative solutions to problems, they do generate alternative consequences fairly well. However, they may repeatedly get into difficulty even if they know what could happen as a result of their actions, because "often they cannot think of what else to do" (1981, p.89).

This theme would seem to also underlie the findings of the Shure et al. (1971) study of four-year-olds. While, as had been reported from previous studies, the less well adjusted gave fewer and a narrower range of solutions to interpersonal problems, the content of responses, considered in conjunction with the number of solutions given, revealed something interesting: While the children of *both* groups conceptualized means that could be considered not socially acceptable (for example, "hit him", and "grab it"), the better adjusted also entertained more acceptable (and probably effective) means. Further, in a subsequent publication, Spivack and Shure (1974) pointed out that adjusted children not only go on to think of more solutions other than force, but may give them a higher priority. This could indicate that malintent on the part of less well adjusted children who act on their first options of choice is probably less likely than mere insufficiency of thought. The conclusions drawn by Shure and Spivack

(1982) from the Hahnemann researches with four-year-olds was that, independent of IQ, children competent in interpersonal cognitive problem-solving skills are less likely than peers deficient in these skills to display impulsivity.

Research into Interpersonal Cognitive Problem-Solving Deficits with Behaviour-Problem Adolescents and Officially Denoted Delinquents

Given the potential importance of interpersonal skills deficits to notions of delinquency, it is noteworthy that only a small number of studies exist which try to establish more exactly the nature of such deficits in this population. More work has been done in attempts at remediation programs, based perhaps in funding opportunities. Personal communication with Professor M. Shure (October 1987) indicated that Hahnemann University is not cognisant of any current investigations of delinquents in process, using the Spivack, Platt, and Shure techniques. While, for a consistency of approach, focus is being given in this study to interpersonal cognitive problem-solving research based on the Spivack, Platt, and Shure measures, not all of the studies to be reported have used those techniques devised by the Hahnemann group.

The research findings to follow do suggest that delinquents as a group can be distinguished from nondelinquents, and groups of those who show behaviour problems or coping difficulties within the delinquency institutions can be distinguished from those who do not, in terms of interpersonal problem-solving skills. In a study of delinquents and nondelinquents, Freedman (1974) put together a number of interpersonal problem situations typically faced by secondary school-aged males, and tested the responses of three groups of teenagers, average high school students, "superstar" high school students, and residents of a state

training school for delinquents. The results showed the delinquent group to be significantly less able to provide effective solutions to the problems than either of the other two groups.

Then, in later work, Freedman, Rosenthal, Donahoe,and Schlundt (1978) developed an Adolescent Problem Inventory, designed to identify the personal and interpersonal skills used by adolescent boys and to differentiate the problem-solving abilities of delinquents and nondelinquents. The inventory, administered as a behavioural role-playing test, was comprised of 44 problem-solving situations. In the first validation study of this test, a group of delinquents was compared with two groups of nondelinquents ("good citizens" and "leaders") from a public high school. Poorer problem solving was noted for delinquents than for either of the nondelinquent groups. This finding was complicated by a further finding of a significant difference in verbal intelligence between the delinquent and both nondelinquent groups. However, subsequent comparison of two sub-samples of equal intelligence drawn from these groups showed scores on the Adolescent Problem Inventory that were still highly discrepant. The authors concluded that the test was measuring something above and beyond verbal intelligence.

Next, to assess whether the poorer performance of the delinquents was due to skills deficits or merely to the task format, the format was altered in wording and from open-ended to multiple choice. This improved the performance of both delinquents and nondelinquents, but the significantly poorer response of delinquents in comparison with the other two groups was nevertheless maintained. Interestingly, it appears that not only the devising of appropriate options for

problem solutions but also the recognition of appropriate options seems to have been faulty for delinquents.

In a second validation study of the open-ended, free response format of the Adolescent Problem Inventory, Freedman et al. (1978) compared two groups of delinquents, one group who had a history of frequently engaging in disruptive behaviour within a state correctional facility, and another group who had no such history. They found the low disruptive delinquents to gain higher scores on the social problem-solving measure.

Earlier work by Spivack and Levine (1963) had shown similar results to those of Freedman et al. (1978). Normal controls and adolescent residents in a treatment home who were characterized as impulsive were provided with an aroused need state, were told that in the end the need was satisfied, and were asked to construct a story connecting the two. The behaviour-problem group, in comparison with controls, was found to be deficient in means-ends thinking, alternative thinking, and perspective taking. Also, a study by Platt, Scura, and Hannon (1973) produced similar results from comparing two within-institutional populations: When incarcerated state reformatory heroin addicts of 19-21 years were compared with nonaddicts, the addicts were found to also be deficient in means-ends thinking, alternative thinking, and perspective taking when compared with the nonaddict inmates.

The final study to be reported of those which compared institutional delinquent groups who showed different gradations of conformity is that by Higgins and Thies (1981). In attempting to establish whether first-time reformatory

inmates classified as "misfits" and "disciplinary problems" would have less success in providing solutions to real-life problems than would a "success group", Higgins and Thies used means-ends problem-solving tasks as indicators. The misfit group (so identified by officers, counsellors, and inmates as individuals unable to function well in any context) and the disciplinary-problems group (those with frequent disciplinary court appearances) showed significantly less problem-solving skill than the success group (identified as those inmates making the most satisfactory adjustment to the institution). Moreover, in order of efficacy shown in problem-solving skill, the groups performed in the order: success group, disciplinary group, then the misfit group.

In overview of these studies reviewed, although interpersonal skills deficits have been found for delinquents, a problem exists in the lack of comparability of the indicators of interpersonal problem solving used by researchers. Where the Spivack, Platt, and Shure classification of skills has been used, means-ends thinking has recurrently been a productive indicator, although it is again emphasized that research is still sparse. However, whether it is knowledge of what to do, lack of initial or ongoing thought, a combination of these, or a combination of skills deficits is certainly, at this stage, not known. On the other hand, what is clear generally is that poorer efficacy in interpersonal problem solving has been able to discriminate not merely delinquent groups from nondelinquents, but finer gradations along the delinquent-status dimension, that is, those delinquents who cannot conform or cope well in their institutional environments from those who can. It follows that a relationship would appear to exist between delinquency and ability to solve interpersonal problems.

One other stream of research now needs to be detailed: Added weight would accrue to the notion of delinquency being related to interpersonal problem-solving skills deficits, if remediation of these deficits were to lead to subsequent positive behaviour change. There is, in fact, some evidence of a lower incidence of behavioural deviance resulting from coaching in interpersonal problem solving.

Research with Delinquents: Skills Training Programs and Changes in Delinquent Behaviour

Probably because of the convenience of having an already established captive audience at hand, most programs have been mounted with institutional populations. Sarason and Sarason (1981) did, however, attempt to enhance the cognitive and social skills of students considered drop-out and delinquency prone, giving emphasis in training sessions to consequences of action and alternatives available. Introspection improved as did the ability to adopt a problem-solving attitude, and, in a one-year follow-up, results were that those subjects trained had, among other things, accrued less referrals for misbehaviour.

Within institutional settings, there have been responses to social skills training interventions ranging from less disruptive institutional behaviour to less antisocial behaviour on release - less recidivism and lower recommittment rates - in comparison with controls. Sarason and Granzer (1973) used modelling, role play, and discussion to communicate, among other things, socially relevant information to institutionalized male juvenile offenders. This resulted in less recidivism among the treatment group than among controls. Also, using a somewhat different combination of interventions, Bowman (1979) combined the problem-solving behaviour-modification techniques of D'Zurilla and Goldfried

(1971) with relaxation training and verbal self-instruction. Impulsive delinquents taught to relax, think, and delay responding to emotionally provoking situations were reported to accrue fewer charges for disruptive behaviour and for breaking rules within an institution than did controls.

Also, the efficacy of using different kinds of social-skills coaching has been studied by Scopetta (1972). He compared the outcome of combinations of interventions with problem-solving discussions only, using groups of institutionalized delinquents. The combined interventions included institutional staff playing problem-solving skits and subjects role playing the situation afterwards, and group discussion. The delinquents who participated in this combined program showed a significant reduction in antisocial behaviour compared with the problem-solving, discussion-only group.

Interestingly, when a similar program was attempted by Thelen, Fry, Dollinger, and Paul (1976) with delinquents living in a group home, but a videotape actor was used in place of live, role-play models (the subjects, however, role-played after watching the videotape), a lack of maintenance of training was found. Also, control subjects who had watched lecture tapes which focused on social skill evidenced no change in behaviour. One is led to speculate that a failure to attend to "people situations" requires a personalized (and visual) underscoring of their interactions to cause a shift in habit. Possibly, the teaching package devised by Platt, Spivack, and Swift (1974) and used by Platt, Perry, and Metzger (1980) constituted such an underscoring. Platt et al. (1980) trained in interpersonal problem solving a group of adult male incarcerated offenders known to have been heroin dependent. A two-year follow-up showed significantly lower

institutional recommitment rates for those who had had this training than for those who had not.

It seems evident that training delinquents in social skills can cause a shift towards positive (socially conforming) behaviours, although what the major components are which cause change or any maintenance in change are not yet established. Nevertheless, a defensible conclusion from such research findings is that delinquency does seem related to ineffective social skill.

1.9.1 *Conclusions from Research and Expectations Concerning the Interpersonal Skills Performance of Delinquents*

Research with impulsive children, with behaviourally difficult children and adolescents, and with delinquents suggests that they are poorer interpersonal problem solvers than normals and that this is so largely independent of class. That is not to suggest that poor interpersonal problem solution necessarily leads to delinquency. Indeed, other vulnerable groups like psychiatric hospital inpatients have also been found to deal less ably with these tasks than normals (Platt and Spivack, 1973; Platt, Spivack, Altman, Altman, and Peizer, 1974; Platt and Spivack, 1974). Rather, it would appear to be a matter of probabilities related to how frequently poor problem solution occurs; were it to occur often, not only informal but formal social rules (laws) would be violated in the course of time, not necessarily through intent but through increased possibility for illegal response.

Thus, to be able to assert a skills-deficit idea of delinquency, a direct relationship between social-skills deficit and the delinquency process, a further postulate would be needed: that delinquents *more frequently* show

interpersonal-problem deficit than do other groups. The rationale behind this postulate has already been provided in section 1.8, where it was argued that delinquents may more often respond motorically than semantically in (interpersonally related) language situations, because of an earlier pairing of stressful, interpersonal experience and language. This propensity for precipitate responding could truncate planfulness which may then lead to poor choices of action.

If interpersonal problem solving were related to the delinquency process, one might expect to find two things. Firstly, evidence should be found of deficit in the planning process. Since indications from the verbal-mediation literature are that verbal thought before an action sequence or parts of it could constitute points of vulnerability, it is suggested that one might expect delinquents not to pause to think in these situations as often as do normals. Any evidence, then, of more limited introspection, for example, fewer statements of thinking before a description of action, might be construed as evidence for deficit in planning. Secondly, evidence should be found of poorer performance by delinquents than normals in the outcome of planning in interpersonal problem solving, for example, on the Means-Ends test. The co-existence of such findings, while merely correlational, would nevertheless represent an advance in present knowledge, giving substance for further exploration of a causal link.

A final issue of importance that needs consideration is related not so much to performance on interpersonal cognitive problem-solving tasks, that is, on tasks which involve language and interpersonal content, but to what might be expected from generalization effects. If delinquents have learned to react defensively

because of an earlier pairing of language with stressful, interpersonal experiences (interpersonal coping problems), the effects could generalize to any person-related, language-loaded situation, for example, where there are persons and language exchange. So, presumably, tasks with noninterpersonal content which required language exchange would also be responded to less well by delinquents than nondelinquents, although it is suggested that this effect would not be as pronounced as when the content of the task was also interpersonal.

To this point, segments of a theory of delinquency have been compiled piecemeal as extrapolations have been made from findings in each area of research presented. The theory can now be drawn together so that those segments to be investigated empirically in this study can be put into meaningful context.

1.10 *The Mechanism of Delinquency : A Model*

As stated previously, it is not assumed that there is only one kind of delinquency process or set of processes. Indeed, the diversity in the nature of deviance evidenced by reviewers like Ross and Fabiano (1985) would suggest that any quest for an all-embracing theory of delinquency would be labour-in-vain. On the other hand, a search for the mechanisms behind a common-or-garden variety of delinquency seems defensible. It is suggested that the theory to be outlined of a relatively "thoughtless" delinquency is sufficiently common for its characteristics to be distinctly manifested within and across numbers of delinquent groups, irrespective of the severity of offender status.

The mechanism being proposed is that, if a small child learning to talk were to pair anxiety with interpersonal situations where speech was occurring, for

example where verbal hostility was recurrently being expressed, the child could learn defensively to close off in interpersonal, words/verbal thought situations. Language might acquire negative, stressful overtones and the "no thought" strategy of denial could occur. At such times, the onset of a language stimulus may become a cue for action, in the Lurian sense of motoric as contrasted with semantic responding.

This process would ultimately result in a truncating of plans related to interpersonal problem solution, because the flow of verbal thought would be interfered with. In time, the operation of this mechanism would have a number of consequences: Firstly, it would lead to a tendency for the developing person to revert spasmodically to motoric responding; the exigencies of life or stimulus opportunities would have been insufficient to overcome the effects of the negative reaction occurring to interpersonal language situations and so "hold" the person in a more mature semantic responding mode, and help it to become firmly and consistently established.

Secondly, relative disinterest in "words" situations as compared with "action" situations might occur, action having been found rewarding because it affords relief from stress. The use of words would, thus, not develop as the preferred mode of coping with the world. This negative motivation for responding to life situations with words or verbal thought, even if merely a tendency, would presumably compound over time and affect vocabulary growth and the quality of word usage. It follows that the young person's verbal expression would not sharpen to the greater explicitness that comes with language usage. Also, attention in a school situation, which is largely words related, would be reduced,

and educational performance would generally be affected. Although it is hypothesized that this mechanism would occur irrespective of class, membership in middle-class as compared with working-class circumstances should moderate the effects, the limitation on the quality of expressive speech and on school performance being offset, to some extent, by the pressure to be verbally fluent and the verbal coaching that takes place in middle-class homes. However, regardless of social class, action rather than words would still be the young person's preference, especially when times became difficult.

Thirdly, as a result of habits formed of unplanned or poorly planned responding, any stress situation (though there may be relatively few outside of interpersonal situations) may begin to cue the person to precipitate action. Spivack, Platt, and Shure, in a passage that bears quoting, pointed to a narrowing of potential responses when there is threat. They suggested that "one would expect that a situation of intense emotion or threat would narrow the range of solutions a person would be able to generate, that an excessively high drive state might so focus thought upon consummation as to make means-ends thinking impossible, or that intense internal or external pressures for a quick decision might often lead to errors of judgement on the basis of unexplored and thus, unanticipated consequences" (1976, p.171). Within the theory being proposed, it is not expected that a high drive state would always obtain, but that habits formed would ensure a defensive responding in person-related, words situations, since these cue anxiety. However, should anxiety increase, for example during adolescence, when there is an expansion in social environment, the higher drive, in addition to established habit, would accentuate the problem; more frequent precipitate responding would increase the possibility of illegal behaviours

occurring, literally almost thoughtlessly. Once illegal activity did occur, it could be reinforced from a number of sources, for example, from the input of family members, school associates or teachers, or from a concentration on negatives by helping professionals.

Language is thus seen as having both a primary and a secondary function in the process of "thoughtless" delinquency. Since a primary determinant of delinquency within the model being proposed is the tendency to motoric as opposed to semantic responding, and, indeed, a pairing of stress with interpersonal language situations is suggested to have occasioned a motoric responding being perpetuated in the repertoire of the developing person, language is of pivotal concern in the chain of events leading to delinquency. The motoric responding is seen as leading to interpersonal planning becoming truncated, with a consequent deficit in interpersonal cognitive problem-solving skills. Were this to occur frequently, poorly thought out options for action might well lead to relatively uncalculated illegal behaviour.

Language is also seen as having secondary relationships to delinquency, however, in that a negative affective appraisal of interpersonal language situations may lead to a preference for self-expression other than through language, a discomfort with or disinterest in language, and to some limitation in language expression because of insufficient practice with words. This would result in a consequent failure to respond well to school. Problems in self-esteem deriving from school failure could then, in turn, contribute to delinquency recurring.

The issue of class is thought to relate variously to the problem and might

both attenuate and heighten the effects of the motivational difficulty with language. It can be speculated that children from reduced circumstances would have more likelihood of being disadvantaged in two ways: Firstly, they would have increased chance of being subjected to a greater number of stresses in their early environment, because of the greater tensions that obtain in a home when life circumstances, and resources, and hope are reduced. The chances of pairing language and stress when their own language is formative would be high, and the possibility for learning to appraise language negatively would thereby increase. Secondly, they would be disadvantaged in language articulation and planning-strategy opportunities related to parent-child communication: They would have less opportunity for experiencing models of articulated planfulness, and there would be less emphasis from their environment on their developing the consummate verbal skill prized by the middle class.

Social-class factors would therefore probably militate for poorer children more often becoming delinquent and at least for them becoming adjudicated delinquent, their lack of resources being in clear focus for police and magistrates. Further, although working-class youths in general, compared with those from the middle class, would be expected to show more limited competence in language expression, additional verbal difficulty would be likely for youths who were also delinquent, in that they would have poorer motivation to use language, occasioned by the earlier pairing of language and stress. This poorer motivation would, in turn, further affect their verbal skill because it would reduce their language practice. Thus, for working-class youths, both more accentuated and additional language difficulty would accrue to being delinquent, compounding those difficulties related to their social class. The expanded language resources in the homes of

middle-class delinquents and the suggested impact of this on their functioning has already been mentioned.

Further issues pertaining to delinquency, unnecessary to the rationale of the present research, are addressed in an expanded version of this model in a paper by Brown (1980). (See, also, Brown, 1989, Appendix R.) Such issues include the function of parents and peers in the delinquency process and the disparity between sexes in offending.

Comprehensive testing of the theory would require considerable research over time, so it became the task of this study to explore the feasibility of expending further research on the model. This was to be done by testing three key component outcomes of the theory pertaining to the language and planning capacities of delinquents, and the influence of social class on these capacities, to establish whether these could be found at least to co-exist. The three important components of the theory to be tested were as follows: firstly, whether there is more limited motivation to deal with language and a predilection for action rather than words on the part of delinquents as compared with nondelinquents; secondly, whether there is a problem with language expression for delinquents in comparison with nondelinquents, which is further exacerbated or attenuated by social-class membership; and, thirdly, whether a disruptive effect of language inhibition on planning in verbal interpersonal situations might be inferred from a difficulty in interpersonal cognitive problem solving, for delinquents compared with nondelinquents.

1.11 *General Aims of the Research*

The current study was designed to examine delinquents and nondelinquents within both a middle-class and a working-class stratum. In the light of the theory presented, it was hypothesized that, regardless of social-class membership, more limited motivation to deal with language would be shown by delinquents: They would express less liking for verbal material and more liking of movement activities, and consider language less important and movement activities more important than would nondelinquents.

It was also expected that, regardless of social class, more limited competence would be shown by delinquents than nondelinquents:

a) in word knowledge;

b) in the processing of what is said to them;

c) in verbal expressiveness, in terms of the complexity and amount of their speech,

and,

d) in the planning of verbally related material.

Further, since the theory suggests that interpersonal verbal stimuli might be a particular problem for delinquents compared with nondelinquents, it would follow that their functioning on b, c, and d would be expected to be even more limited if at the same time there was an evident interpersonal dimension in tasks.

There is also reason to believe that there would be a differential performance both on word knowledge and on verbal expressiveness (complexity and amount of speech) as a function of social-class membership, regardless of the

delinquent status of the respondents. Working-class youths, generally, would be expected to show more limited word knowledge and verbal expressiveness than middle-class youths. In addition to this, however, an interaction would be anticipated in relation to membership in a social-class group and in a delinquent or nondelinquent (delinquent-status) group, for these tasks. The motivational problem with language would be expected to exacerbate, for the working-class delinquents, the verbal problems already arising from their social-class membership. This might produce a situation where working-class delinquents would function least well, the difference in their performance compared with middle-class delinquents being even greater than the performance difference between working-class and middle-class nondelinquents, on word knowledge and on verbal expressiveness.

CHAPTER TWO

Method

2.1 *Sample Characteristics*

The research sample comprised 180 subjects. These were categorized according to delinquent status and social class into eight groups. The criteria for the selection of subjects across groups took into account age, sex, and a base limit of nonverbal intelligence. Where it could be established, absence of psychiatric or neurological history was also a requirement. The break-down of numbers in each group is depicted in Table 1, and the specifics of sample selection and categorization into groups follow.

Table 1

Numbers of Subjects in Each Group

	Institutional	Probation	Cautioned	Control
Middle Class	25	25	15	25
Working Class	25	25	15	25
	50	50	30	50

2.1.1 *Selection Criteria Across Groups*

Sex

To economize on sample size and because of the greater representation of males than females in Australian delinquency statistics (Challinger, 1977, 1985; Fielding, 1977) only male juveniles were selected for the study.

Australian/English Speaking Background

A sample of Australian-born youths with Australian-born parents was aimed for, because it was thought desirable where language was to be a focus for study, to have subjects whose first language and whose parents' first language was English, and whose cultural backgrounds could be considered similar. Persons with evidently foreign names were, consequently, not approached for the research, and, after an approach was made to a candidate, information about the family's country of birth was obtained during the first interview. Occasionally, one parent was found to have been born in a foreign, English-speaking country and this was accepted. Other exceptions made were as follows: One youth in the middle-class cautioned group had a Japanese mother; one in the institutional middle-class delinquent group had an Italian-born father, who came to Australia as a child; one youth of the working-class cautioned group had an Italian father ,who had lost contact with the family; one working-class control was a youth, who had migrated from England with his parents, some months before. The rest of the sample of 180 could reasonably be considered to be of Australian, English-speaking origin.

Age

An age range criterion of 14 years 6 months to 17 years 0 months was

applied. This range was selected as being representative of juveniles appearing in Victorian Children's Court (Challinger 1977, 1985) and also as an age range within which delinquency, if it were to become manifest, would have had time to occur. However, because of difficulty in obtaining the numbers to complete the sample, especially for middle-class delinquent groups, this range was extended at both ends, from 14 years 0 months to 17 years 8 months. (For the incidence of the sample falling within these extensions, and the mean age and standard deviation for each group cf. Brown, 1989, Appendix D.)

Nonverbal Intelligence (Base Limit)

A decision had to be made whether to match subjects for intelligence. Since in Chapter One it was reasoned that reports of lower intelligence in delinquents could be a function of verbal deficit, it was decided not to match individuals for intelligence, but merely to use a nonverbal intelligence test, the assumption being that this would result in comparable intelligence findings across delinquent and control groups. On the other hand, a lower level of intelligence was set to help exclude anyone insufficiently intelligent to comprehend instructions or tasks.

Estimates of nonverbal intelligence were obtained from the Standard Progressive Matrices (Clark, 1966, Australian Council for Educational Research), an Australian normed version of Raven's Matrices (Raven, 1938). Subjects were required to attain at least an IQ of 80. Only two candidates for the research had to be eliminated because they obtained intelligence scores lower than the base criterion. (See Brown, 1989, Appendix E, for the mean IQ score and standard deviation for each group.)

Absence of Psychiatric and Neurological Histories

No candidate was accepted for the research if indication was obtained from discussion with parents or teachers, or from Community Services Victoria or Victoria Police files, that there was a diagnosed neurological or psychiatric history.

2.1.2 *Categorization into Groups*

2.1.2.1 *Social Class*

The sample was categorized into middle-class and working-class youths, by applying the Australian Index of Social Class (Brotherton, Kotler, and Hammond, 1979) in conjunction with the Occupational Classification of the Australian Workforce (Broom, Lancaster-Jones, and Zubrzycki, 1965). Information for making the classification was obtained from questionnaires completed by parents of potential subjects. The index was arrived at by a summation of weightings applied to father's education, mother's education, father's occupation, and the occupation of both grandfathers (cf. Brown, 1989, Appendix A). It seemed particularly appropriate for use in view of its educational components which would have importance for language acquisition in subjects' homes.

Young persons whose fathers or grandfathers were clerks or salesmen were not included in the sample, because those occupations appeared to merge working class and middle class when education was also considered. Where information could not be obtained from parents (for 7 of the 180 subjects), estimates of social class were made from information supplied by the subjects themselves. There was no overlap between the two social-class classification scores, an arbitrary upper limit to inclusion in the working-class groups being a score of 15, while the base score for inclusion in the middle-class groups was 20.

Because of difficulty in obtaining the numbers of working-class controls and middle-class delinquents aimed for, minor exceptions to these criteria had to be made for 8 of the 180 subjects. For a reporting of social-class group means and standard deviations see Brown (1989), Appendix A.

2.1.2.2 *Delinquent-Status Categories*

Delinquent Groups

As previously indicated, for this research a delinquent was considered to be an adolescent who had been formally processed by law for having committed a criminal offence. No youth on a Protection Application related merely to his being in need of care was therefore included in the sample. Three delinquent subgroups, an institutional group, a probation group, and a group officially cautioned by police, were chosen from the working class and from the middle class, because it was considered important to have a cross-section of adjudicated delinquents. Also, the groups chosen were to represent an arbitrary gradation of severity/frequency of delinquency. The rationale concerning severity/frequency of delinquency and the groups chosen was that those who had been cautioned had generally been apprehended by police for the first time and had committed offences which police did not consider to be sufficiently serious to process through Children's Court. The probation group had not committed offences sufficiently frequently, or their offences had not been viewed by magistrates to be sufficiently serious, for them to be incarcerated. The institutional group might be considered to be those young people who had more frequently or more seriously offended.

Institutionalized offenders were those in institutions at the time of testing. The 50 incarcerated youths were drawn from two institutions in Melbourne, 49 of

them from six different sections within the Turana Youth Training Centre, the major reception centre for young offenders in Victoria, and the remaining youth, a middle-class offender, was obtained from Bayswater Youth Training Centre in Victoria. Permission had been gained from Community Services Victoria to conduct research with this sample, to have access to files, and to approach parents.

There was little difficulty experienced in obtaining the required number of institutionalized working-class youths, but extreme difficulty getting the 25 institutionalized offenders needed from the middle class. Indeed, three years elapsed before the middle-class institutionalized sample could be completed, since youths from the middle class came infrequently through the institutional system. It is interesting that difficulty was also found in obtaining this category of subjects in a second Australian state. Because of the delay to data collection caused by the dearth of middle-class institutionalized youths in Victoria, application was made to and eventually approved by the South Australian Community Services to seek middle-class candidates from the South Australian institutional system. However, in nine months of waiting for appropriate youths to enter that system, not one subject was found, and the collection of data from interstate was then abandoned. Eventually, for expediency, in two cases youths institutionalized after testing, because of their further offending, were moved from the middle-class probation group to the middle-class institutional group to complete the numbers of this latter, comparatively elusive group.

When an institutionalized youth was considered from information on his file to be a likely candidate for the research, he was approached directly by the researcher, told about the research, and was asked if he would take part. If he consented, his parents were telephoned about the research and a questionnaire was sent to them

requesting information about family education and occupation. Few institutionalized youths rejected taking part, indeed, they seemed to enjoy the opportunity to do something new, and few parents denied information. Most institutionalized subjects in the sample had been incarcerated for various forms of property offences, although there was a proportion of youths who had also committed violent acts, including one youth who had been incarcerated for murder. The criminal histories of most of these young people were, in general, quite extensive.

Testing of all subjects took place "on section" in rooms where privacy could be had. However, since the domestic, routine matters of institutions had to take precedence, there were interruptions to sessions for the institutionalized youths that did not occur in other venues. For that reason, at times more than two sessions were required of institutionalized subjects.

Probationers consisted of young persons who had never been in institutions, but had been processed through Court and put on probation after more than one instance of delinquency. To obtain a sample of probationers, eight different Community Services Victoria, regional agencies across metropolitan Melbourne were approached and subjects were subsequently drawn from all of these agencies. A reasonable cross-section of suburban districts had been aimed for in the selection of Community Services Victoria offices, some districts being chosen because their population contained both middle-class and working-class populations. One youth was obtained from a high-rise housing commission area, but, in general, for working-class probationers, areas where there was very high density living and which had a reputation for criminality were not chosen, so that the sample would not be biased towards a sub-cultural group. The regional offices/areas chosen were the Moonee

Ponds, North Melbourne, Caulfield, Camberwell, Ringwood, Lilydale, and Heidelberg offices, and the Hawthorn Youth Welfare Service of Community Services Victoria.

As had occurred with the selection of the institutional group, the files kept by Community Services Victoria, concerning offenders on probation, were perused for number and nature of offences, previous offending history, likely ethnic background according to family name, and father's occupation. The length still remaining of the probation period had also to be checked, since no offender could be approached after his probation had expired. A final matter sought in files was any information concerning diagnosed psychiatric or neurological history. Again, permission had been gained from Community Services Victoria to look at appropriate files and to approach youths and their families about the research.

When a likely candidate was preselected on the basis of filed information, his probation officer was telephoned and was asked to act as mediator with the youth and his parents to explain the research. If they expressed willingness to take part, this was communicated back through the probation officer, and a telephone call was then made to the young person making an appointment time for testing, and a letter was sent to the parents. Most subjects who were approached, and their parents, agreed to take part in the research.

So that subjects would not have far to travel to the two testing sessions, testing venues were established in 10 different places, at Eltham Shire Health Services; Education Department Special Teaching Services Office, Doncaster; Essendon Civic Centre; Community Services Victoria offices at Camberwell, at Ringwood, at North Melbourne, and at Caulfield; Citizen's Advice Bureau, Oakleigh; Hawthorn Youth

Welfare Service; and Winlaton Training Centre. Often the young people got themselves to the venue. Most often they were driven home by the researcher.

Most of the probation subjects who took part were on probation for the second time. Those few first-time probationers included were included because they had also previously been officially cautioned, or because their first time in court had concerned multiple charges. They were, then, not new to offending. Again, most young offenders in this group had engaged in property offences of various kinds, although there were some whose activities had included violence, for example armed robbery or wilful damage.

Cautioned Youths were those young offenders who had never been in institutions, had never been through Children's Court, but had been officially cautioned by a police inspector, their parents having been involved in the process of this formal cautioning. To gain this sample, permission was obtained from Victoria Police for the researcher to approach youths and their parents immediately after an official police cautioning, to ask for their voluntary participation in the research. For this to occur, police workers would notify the researcher in advance of a scheduled cautioning of a possible candidate. At the end of the cautioning, the police inspector would mention that a research was in process and inquire whether the family might wish to voluntarily take part. If they consented, they would be introduced to the researcher who was waiting in another room. The research was then discussed with the family, participation was invited, and, if the parents and the youth agreed, the questionnaire for parents was given to them to take home, and an appointment was made for the first testing session. In contrast with the institutional and probation groups, approximately

one in four candidates for the cautioned groups declined to take part. Rejection came almost always from the young person, not the parents.

A meeting with police inspectors before the beginning of data collection resulted in six police-inspectorate districts being targeted as the most likely sources for appropriate middle-class and working-class candidates. These districts, the police inspectorates at Doncaster, Essendon, Glenhuntly, Kew, Chatham, and Oakleigh, coincided approximately with the districts of the Community Services Victoria offices through which probation subjects were selected. In time, three of these venues, the police inspectorates at Doncaster, Essendon, and Oakleigh, proved to be the major sources of subjects, as the other three gave rise mainly to girls, or to too few youths of appropriate age or with Australian backgrounds. The primary three areas, situated far apart in Metropolitan Melbourne, provided a good middle-class/ working-class cross-section within their districts.

The cautioned youths in the sample had mainly been cautioned for minor forms of property offence. No youth was included whose offence was related to traffic violations, for example, riding a trail bike in a prohibited area or failing to wear a helmet. Testing of this group took place at the same 10 venues as for probationers.

Nondelinquent Groups

The Control Groups comprised ostensible non-offenders. They consisted of young persons who did not own to having committed any offences when asked by the interviewer, and had no police record. (Victoria Police did a computer check of the names of controls to ensure that they had never been officially cautioned nor processed through court.)

A large proportion of the probation and institutional subjects had been tested before controls were selected. It was found that these two groups issued from technical schools, high schools, and some private schools, and were a mixture of working youths and those who were still students. A rule-of-thumb match was therefore attempted with respect to school type and whether student or worker, when the controls were selected. (For the percentage of youths still in school in each group cf. Brown, 1989, Appendix B.) Control subjects were, consequently, drawn from two technical schools, Essendon Technical School and Oakleigh Tech; two high schools, Essendon High and Camberwell High; two private schools comprising boys from a Catholic college, Marcellin College, and also comprising some Trinity Grammar boys, and from among railways apprentices from Vic Rail at the Spotswood Workshops.

Until the required numbers were obtained, school authorities selected boys from appropriate forms on the basis of age and no known delinquency, and then each boy was interviewed individually by the researcher and asked whether, in terms of being a true non-offender, he might qualify to take part in the research. This matter was carefully broached when rapport was established. The youths were assured that there were different reasons why they might be ineligible for the research, including a refusal to take part, so that they would not feel that a failure to proceed as a subject could be interpreted by others as indication of past offending. The youths seemed surprisingly honest but without bravado in their revelations about any offences : A number of youths approached admitted to having committed offences, the more so youths from the working class and the technical school system. This finding was interesting given that Challinger (1977, 1985) had reported a predominance of adjudicated offenders issuing from technical schools in Victoria.

Few who fitted the selection criteria refused to take part. Those who consented were given a letter and questionnaire to take home to parents and an appointment time for testing. Boys from Trinity Grammar were tested at two of the venues used for the testing of probationers and cautioned youths. All other controls were tested on the premises of their schools in school time, and at Vic Rail during their apprenticeship employment time, this courtesy being extended by the respective establishments.

2.1.3 *Sample Size*

A sample size of 25 had been planned for, for each group, this having been considered a sufficiently large number to make evident any group differences in functioning that might obtain. Because the data collection was protracted, however, and time became limited, curtailment had to be made of the last groups to be researched. Thus the cautioned groups contain only 15 subjects each.

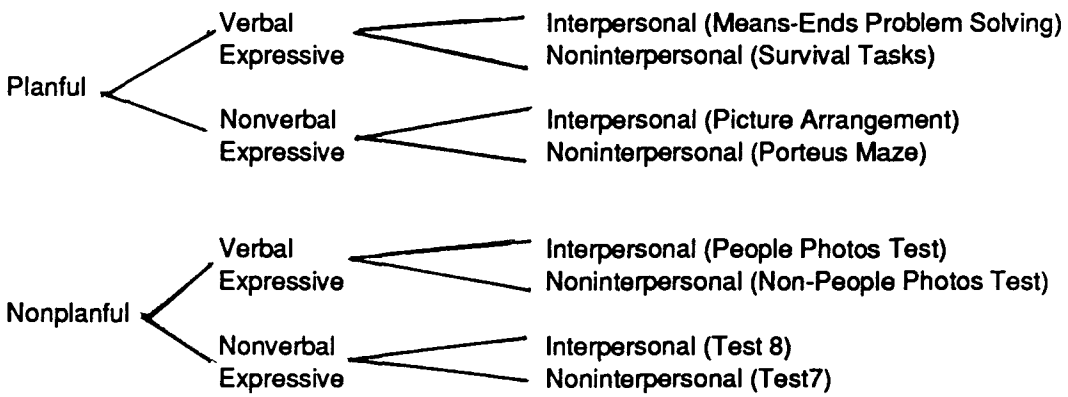
2.2 *Measures*

In light of the theory outlined, a choice of tasks was required which would allow a comparison of responses to a range of different kinds of verbal stimuli with responses to largely nonverbal tasks. In addition, the tasks were to be able to yield evidence of variations in responsiveness if there was an interpersonal and/or a planning component.

Two tests were included, one of which was to measure motivation towards language and the other, vocabulary level. The eight other tests used were varied in terms of whether they could be categorized as planful/nonplanful, interpersonal/impersonal (noninterpersonal), and verbal expressive/nonverbal

expressive. Those dimensions or classifications on the basis of test content were not discrete, being conceptually rather than empirically derived. Thus, when ostensibly "nonverbal", "nonplanful", and "noninterpersonal" tests are described in the following sections, it is not assumed that silent verbal cuing by subjects could not also be present which would contribute an extra verbal and a possible planning component, or that noninterpersonal tests do not contain interpersonal elements related to the very presence of a subject and interviewer together. Rather, it is suggested that, relative to their comparison tests, it might reasonably be concluded that there are evident differences between tasks on the dimensions of verbal, planful, and interpersonal content.

To clarify the complicated task of reporting tests which vary on three dimensions, the schema of the categorization of the eight tests selected as being planful/nonplanful, interpersonal/impersonal, and verbal expressive/nonverbal expressive is detailed as follows:



Each of the eight measures will be discussed in turn, and a table will then be presented summarizing the tests in relation to the three dimensions. The two measures which are additional to that design will then be presented.

Means-Ends Problem Solving

The Means-Ends Problem-Solving procedure of Platt and Spivack (1975, 1977), one of their measures of interpersonal cognitive problem-solving skill, was selected to test subjects' ability to plan how to move towards a goal when the problem to be solved is interpersonal in nature. Moreover, it was selected because it elicited verbal response.

In their rationale for the development of the Means-Ends Problem-Solving procedure, Platt and Spivack (1975) pointed out, that the past focus of studies into problem solving has been concerned only with the measurement of cognitive styles and general reasoning or creative thinking abilities when the person is confronted with impersonal tasks. Further, they suggested that "there is no evidence that the ability to solve a paper and pencil maze test will predict how well a person will handle a conflict with a friend" (1975, p. 4).

The Means-Ends Problem-Solving procedure, by comparison, is seen as measuring different abilities from normal puzzle or problem-solving tasks. Also, although it is a test of cognitive ability, it is not seen as being an indirect measure of intelligence; its reported correlation with the Quick Test is .34 (Platt and Spivack, 1975). Rather, the authors considered it a test that discriminates those with the ability to generate the means to effectively solve person-related problems in living, who have the "spontaneous capacity to generate possibilities when confronted with interpersonal problems" (p.56). In support of this, they cited various studies which show the test's capacity to discriminate a number of groups, for example, psychiatric patients, adults and juveniles, and heroin addicts, who have failed to master the problems of daily living from those who have.

Platt and Spivack (1975) placed emphasis, then, on the thought generating, planning components of this test with interpersonal material. One other component of this test is also relevant for this research, namely, its component of interpersonal expressed language. Since it was important to the model developed to test whether interpersonal language communication (language communication of interpersonal material) would be more threatening to young offenders compared with non-offenders, than would noninterpersonal language communication (language communication of impersonal material), and whether, when tasks were additionally planful, planning of the former tasks might consequently be affected, Means-Ends Problem Solving seemed an ideal choice of task. It combined the features of language expression, interpersonal themes, and the planning to a solution.

Test Description

Subjects were to give oral verbal responses to problems like the following:

"Paul had just moved in that day and didn't know anyone. Paul wanted to have friends in the neighbourhood. The story ends with Paul having some good friends and feeling at home in the neighbourhood. You begin the story with Paul in his room immediately after arriving in the neighbourhood." No time limit was to be placed on this task, subjects were to be free to respond as they wished, and responses were to be audiotaped.

To make instructions simpler than those used by Platt and Spivack (1975), they were shortened. Also, there were some changes to and of items of the original Means-Ends Problem-Solving procedure:

1) Some of the wording of the original questions was changed where it was thought necessary, to be better able to engage Australian teenagers from

different socio-economic backgrounds, for example, "Al" became "John"; "restaurant" became "cafe".

2) Three of the original 10 Means-Ends Problem-Solving items, which had a content of revenge or stealing, were eliminated because it seemed unwise to present them to offenders.

3) Two replacement items were devised by the researcher and content was chosen which, it was thought, would have meaning through the experience of most teenagers. One of the "new" questions (No. 6) was concerned with a brother who continually borrowed, and the other (No. 7) dealt with teasing by another.

4) The order of some of the Means-Ends Problem-Solving items was changed, so that items which could potentially arouse anxiety in more socially inhibited adolescents would not appear first, and so, cause them to reject the task. Also, because some items were vaguely similar in theme, these were separated by items with quite different themes.

5) Because of the extensive amount of time being asked of subjects to complete all the tests of the research, eight items only of the Means-Ends Problem-Solving test were used.

For the eight problems used in this research and the test instructions see Brown (1989), Appendix F. Unlike for the original test, subjects were not given any direction about length of story.

Scoring Categories

From among the scoring categories used by Platt and Spivack, the number of relevant means generated was of particular interest for the research. It was considered

that, if the *number of means* generated was lower for delinquents than for nondelinquents, when the task also required verbal expressiveness of the subject, it could be argued that some impediment in the generation of thought in such circumstances might be inferred. Number of means became, then, an important scoring category for this test.

Further, were such an impediment to exist, for example, as a result of a tendency to close off from language-related material, it would, as well, be expected that more frequently no attempt would be made to solve the problem (*no response*), or that attempts made would be ineffective (*irrelevant means* - the inclusion only of steps that would be ineffective within the context of the story; *no means* - a response which fails to provide the steps necessary to reach the goal). Also, the foreseeing of *obstacles* would be reduced, as would be the elaboration of those obstacles, and the elaboration of the means given (*enumeration of obstacles,* and *enumeration of means*). Thus, all of those categories of Means-Ends Problem Solving devised by Platt and Spivack (1975) were employed.

In addition to the Platt and Spivack categories used, four others were devised for this research. The most important of these was considered to be *introspection,* since, as was argued in an earlier section, fewer statements of thinking before a description made of action might be construed as evidence for failure to pause to think before action, for a truncating of the planning process. Introspection was to be scored where there was mention of thought or deliberation by the subject before mention of an action.

In the quest for further indication of cognitive impulsiveness, the category,

strife first, aggressing as a first option, an index of impulsiveness when seen in relation to a second category, *strife last*, aggression as a last resort, was devised. Finally, the category of *magical means* was added, since it was felt that the reliance on happening on a solution rather than planning the steps to it could perhaps indicate poor motivation to plan, or at least an insufficient habit of being planful.

There were, then, 11 variables selected for scoring from the Means-Ends Problem-Solving procedure. (For details of the scoring criteria see Brown, 1989, Appendix F.)

Survival Tasks

A test called Survival Tasks was devised to serve as a balance to the Means-Ends Problem-Solving procedure. It mimicked the format of that test in requiring subjects to verbalize their solutions to problems, but differed in terms of the Survival Tasks problems being impersonal.

Test Description

Instructions to be read to subjects differed from Means-Ends Problem-Solving instructions, only with respect to the underlined: "In this task the idea is to use your imagination. You are to make up some stories. For each story, you will be given the beginning of the story and how the story ends. Your job is to make up the middle of the story. These stories will not involve other people at all. In fact, in each situation you should imagine yourself alone, dealing with things alone".

An example of the eight problems of this task is the following:

"You are in a small boat alone, a long way from shore; there is no-one around,

then the boat springs a small but steady leak. The story ends with you being safe again. Begin the story where the boat starts leaking". See Brown (1989), Appendix G, for the questions comprising this test.

The test was termed "Survival Tasks" because four of the questions related to the subject having to retrieve himself from a dangerous situation. Four other questions required a detailing of how to complete a thought-provoking but everyday task, for example, cleaning a chimney. As with the Means-Ends Problem-Solving procedure, no time limit was put on the tasks and subjects were to reply freely, orally.

Scoring Categories

The Means-Ends Problem-Solving scoring categories of *number of relevant means, irrelevant means, no means, no response, enumeration of means, obstacles,* and *enumeration of obstacles* were applied to the Survival Tasks. The basic derivation of these variables was considered comparable for the two tests.

In addition to these seven variables, two others devised by the researcher for the Means-Ends Problem-Solving procedure, namely, *introspection* and *magical means*, were also scored as for that test. The further variables scored from Means-Ends Problem Solving - *strife first* and *strife last* - were not scored for the Survival Tasks since they could only have involved interpersonal situations. The rationale concerning relevance to the research of all the variables scored from the Survival Tasks was the same as that detailed for the Means-Ends Problem-Solving procedure. See Brown (1989), Appendix G, for additional details of the scoring criteria.

Picture Arrangement

This test was chosen because it required the subject to visually appraise an interpersonal sequence, to form a plan, then give a nonverbal response by physical manipulation of materials. It consisted of the rearrangement of disarranged cartoon sequences: Eight cartoon sequences, placed down on the table in front of the subject from the subject's left to his right were to be presented in a set but incorrect order. From this array of pictures, the subject was to tell a picture story by rearranging the cartoon frames, since no words were required by way of response.

The test comprised three items from the Wechsler Adult Intelligence Scale (Wechsler, 1955), two from the Wechsler Intelligence Scale for Children (Wechsler, 1949), and two from the Naylor-Harwood Adult Intelligence Scale (Naylor and Harwood, 1972), selected on the basis of their themes being of possible interest to teenagers. Except for two of the Wechsler Adult Intelligence Scale sequences, all sequences could be additionally scored for time bonus, related to how quickly the subject appraised and completed the picture story. The sequences timed accorded with the convention used by Wechsler and by Naylor and Harwood, the same time bonuses being given as were applied by those authors. As customary with these tests, a stopwatch was used to time, to completion, the duration of each item. For the cartoon sequences selected, their sources, and scoring see Brown (1989), Appendix H.

In his description of the Picture Arrangement in the Wechsler Adult Intelligence Scale, Wechsler suggested that it is the type of test which effectively measures "a subject's ability to comprehend and size up a total situation. The subject must understand the whole, must get the "idea" of the story, before he is able to set himself effectively to the task" (1958, p.75). He pointed also to the human content in

this test and suggested that "the understanding of these situations more nearly corresponds to what other writers have referred to as "social intelligence", something he saw as "just a general intelligence applied to social situations" (p.75). Rapport, Gill, and Schaffer emphasized the planning and anticipation aspect of the task and its performance nature where "the test problem is not merely verbally put and verbally answered" (1970, p.125), while Glasser and Zimmerman suggested that the test measures such factors as "perception, visual comprehension, planning involving sequential and causal events and synthesis into intelligible wholes" (1967, p.76).

As with any test, verbal cuing through thought could, no doubt, be a verbal factor in this test. However, in comparison with the verbal tests listed in the present research, repeated overt verbal statement by the researcher or verbal response by the subject is nonexistent. In this respect this test might be considered largely nonverbal and a reasonable choice as a research tool when, additionally, planful, people-related aspects are to be compared with material that is planful but impersonal as well as nonverbal.

Scoring Categories

Two scoring categories were derived from this test: 1) *Picture Arrangement, raw score*, a summed score of successful arrangements of pictures within a time limit, and 2) *Picture Arrangement, score with time bonus*, which incorporated a time bonus with the score for successful completion within a time limit.

It was decided that if speed rather than mere ability to complete the task in a reasonable time period were to be a discriminator between groups, the difference would be missed if both categories were not used.

The Porteus Maze Test (Porteus Maze)

This test provided a comparison with Picture Arrangement, differing importantly on the interpersonal/impersonal dimension. The Porteus Maze Test, Vineland Revision (Porteus, 1959), was chosen because it has long been regarded as a test of planning. It is a paper and pencil test that requires the subject to negotiate through line-drawn mazes, beginning from the centre of each maze and from there finding the only way out. Among other requirements, each maze is to be traversed without going into blind alleys, lifting the pencil, or touching lines.

Porteus, looking back on his construction of the test 50 years before, and its subsequent use, suggested that the Mazes were "claimed to be approximate measures of planning capacity and foresight at ordinary levels" (1965, p..6). Further, he emphasized that the Mazes measure what a person can do as compared with the way he or she talks about it, the largely nonverbal nature of this task being valuable for populations in which an apparent verbal incapacity may mask other abilities.

While the Porteus Maze Test clearly does not test interpersonal problem solution as does Means-Ends Problem Solving, Porteus saw errors on this test as relating to how a person might deal with his or her life circumstances. He talked of errors of overconfidence, impulsivity, and disregard of instructions on the Porteus Maze as indicating "temperamental differences" which could affect everyday life situations. The qualitative score of errors (Q score) was thought to reflect these characteristics. Moreover, he suggested that he had, early, learned that this poor quality of performance - errors in drawing or execution, summated in the Q score - rather than inferior test age score, a score thought, by comparison, to reflect planning, characterized the performance of delinquents.

Since his writings would suggest that Porteus considered the planning aspect of the Maze Test to be related to intelligence and its execution to temperament, and given that measures of temperament (Q scores), rather than planning, differientated delinquents, it is, then, not remarkable that Porteus concluded that "poor practical intelligence was not a main causal factor in misconduct" (1965, p.28).

That there was a superficial dilemma in the use of this test for the present research is evident, given its reported ability to discriminate some delinquent groups from nondelinquents, yet the purpose of its use in this research was to attempt to show that, being a nonverbal test, it would not so discriminate. Nevertheless, Porteus (1965) did report that young offenders perform differently only on certain aspects of this test, those measured by Q score. Further, since studies using Porteus Maze with delinquent groups have frequently not specified the social class of the sample and the working class is generally over-represented in delinquency statistics, it is not clear whether class factors rather than delinquency might account for the poorer Q score result of delinquents compared with controls. Given that a largely nonverbal, noninterpersonal test of planning was required according to the research design, and this test fulfilled those requirements, the inclusion of Porteus Maze was expedient.

Test Form and Scoring Categories

The form of this test used was the original or Vineland Revision of the Porteus Maze Test (Porteus, 1959). The Year XII, Year IV, and Adult mazes were used because of the age range of subjects. Categories for scoring were *test age score* and *Q score*, after Porteus, although, since the research of Docter and Winder (1954) and of Fooks and Thomas (1957) indicated no loss of test efficiency with the use of raw scores, it was considered unnecessary to weight scores as Porteus had done. Raw scores were

therefore used. The specifics of scoring for these categories and the three mazes selected are reported by Brown (1989), Appendix I.

People Photos Test (People Photos)

This test was devised to ensure verbal expression from the subject. Further, the stimuli were all photographs of people, so they were interpersonal in content, and it was thought that because mere description of the photographs was required, the task would entail minimal planning.

There were eight black and white photographs, these having been chosen from a number of preselected photographs, on the basis of their diversity and likely interest for teenagers. The photographs were reproductions from the following books: American Images (Danese, 1979); In This Proud Land (Stryker and Wood, 1973); The Family of Man (Steichen, 1955); and Photography Year (1976/77 Editors, Time/Life Books, 1977). The interpersonal themes depicted included 1) two children fighting, 2) farm hands at smoke-o, 3) teenagers lounging together on the beach, 4) a family in the family-room, 5) soldiers at work, 6) men passing a girl on a city street, 7) a policewoman talking at a man, and 8) a baby getting a check-up, the mother pulling a funny face.

The photographs were always to be presented in the order just described, by being given into the subjects' hands, to engage them in the task. They were mounted on 10" x 13" white cardboard over which was barely visible, clear plastic. (See Brown, 1989, Appendix J, for reproductions of the photographs used.) As it was wanted, from this test, to obtain some quantitative information about the speech habits of subjects, each photograph was to be presented for the set interval of time of two minutes. The

instructions exhorted the subject to describe what he saw and the thoughts he had about each photograph over two minutes. Stories were timed manually, with a stopwatch, to the nearest second.

Scoring Categories

Since, as detailed in Chapter One, amount of speech and syntactic complexity have been found to be productive discriminators between social classes, indices of those categories were employed. Two scoring categories of amount of productivity were used: 1) *Sentences per passage* (i.e., the number of sentences in the response to each photograph), and 2) average number of words per sentence (*words per sentence*). Two measures of grammatical complexity were also chosen: 1) The number of subordinate clauses used per passage (*sum of subordinate clauses*), and 2) the *Loban Index*, which is "a weighted index of subordination, granting heavier weight to a dependent clause within another dependent clause or modifying another dependent clause". (Loban, 1963, p.52). For the specifics of the weightings within this Loban Index and the scoring of both photos tests see Brown (1989), Appendix J.

It is to be noted that scores for this test and for that to follow (both photos tests), represent responses to photographs 2-8 inclusive for each test, since photograph one was used to prompt the subject to give more if there was little response. (No prompt was given for any subsequent photograph.) The scores, then, pertain to an aggregate of 14 minutes of potential speech.

Non-People Photos Test (Non-People Photos)

The direct comparison test with People Photos, devised to be similar in all respects save for content, which was to be impersonal, consisted of subjects' responses

to a series of eight photographs of scenery. This test was called the Non-People Photos Test.

The photographs were drawn from the following books of scenery and a nature calendar: National Geographic (Vosburgh, 1970; Grosvenor, 1974); Australia, Impressions of a Continent (Hansen, 1978); and Tasmanian Wilderness Calendar (Dombrocskis, 1981). As with the People Photos, whenever originals were coloured these were reproduced as black and white to make stimuli comparable. A variety of scenery content was aimed for, so that adolescent subjects would keep attending to the task. Themes depicted were: 1) a mountain lake, 2) a mountain scene in snow, 3) dew on a spider-web, 4) dried river driftwood, 5) a bush waterfall, 6) a mushroom cluster, 7) desert mesas, and 8) trees reflecting in water.

The photographs were always to be presented in the order just detailed, and in the same manner, and with the same instructions and time constraints as outlined for People Photos. For reproductions of the Non-People Photos see Brown (1989), Appendix K.

Scoring Categories

Scoring categories for Non-People Photos were as for People Photos.

Because tests were needed which required minimal planning and no verbal expression as response, two tests were devised which required the subject to listen to a series of instructions concerning the manipulation of objects, then proceed, from memory, to follow what he had been directed to do. The first of these, Test 8, had interpersonal content in the instructions.

Test 8 (Processing of Instructions, Interpersonal)

As for Test 7 to follow, this test was named for its original order in the administration of the tests.

The interpersonal component to the test was the direction to the subject either to give to, or to do for, the experimenter something that engaged her, even passively, in the activity. For example, one of the items was as follows:

> "Hand *me* the metal teapot and a cup and saucer from the table, please. Then, pour some milk from the carton into the blue pottery jug that is on the table, and, after that, bring the milk jug and the metal sugarbowl to *me* on the tray. You will find both the tray and the metal sugarbowl on the table".

Only everyday objects and activities were used for this test so that no subject would be disadvantaged by being asked to do or to manipulate something he did not understand or know. Each task in the test had been composed with a view to providing the subject with what he might perceive as a profusion of words to perform a number of activities. To help produce this effect, he was given only once, although clearly, the instruction to do often quite unconnected things, and his attention was drawn to a variety of objects. The amount of what he was asked to do with one instruction had been, thus, a primary focus in the construction of the test. The purpose of the word padding was to cause the subject to have to listen to retain the essentials of what he was being asked to do. The test became, then, one of verbal comprehension and memory (verbal processing), yet no verbal expression was required of the subject, who had merely to *do*.

There were eight tasks within the test and for these, the test instructions, the

items used in the tasks, and the scoring details see Brown (1989), Appendix L.

Scoring Categories

The test was scored according to the number of component actions successfully negotiated within each of the eight items or tasks of the test. Also, an extra point was added to the score on each task for correct maintenance of sequence. The aggregate score was called, merely, + *score, Test 8.*

Test 7 (Processing of Instructions, Impersonal)

This test was designed as a comparison test with Test 8, the evident difference with this test being that there were no interpersonal directions in the instructions that were to engage the researcher in proceedings. An example from among the eight items is the following:

> "There are five pencils and three rubber bands on the table. Gather up the pencils, put one of the rubber bands around them, then put the pencils into the licorice box that is under the chair by the wall, binding the licorice box with the two remaining rubber bands. Finally, put the box on the table".

For the tasks, the items used, the instructions , and the specifics of scoring see Brown (1989), Appendix M. As with Test 8, only everyday objects were used for this test, and instructions were purposefully padded with words.

Scoring Categories

The scoring criteria were the same as for Test 8. The aggregate score was called + *Score, Test 7.*

2.2.1 *Summary of Contrasting Tests Design, and Additional Tests Used*

Table 2 summarizes the tests which were used in a design where the verbal, planful, and interpersonal contents of measures were varied and where tests were contrasted with those having opposite contents, that is, nonverbal, nonplanful, and noninterpersonal contents. Two other tests, separate from that design, were also used. The first was to measure the vocabulary recognition of young offenders, since basic word knowledge was not tested by the other tests selected. The second was to elicit data about their attitude towards language and towards movement activities, which could elucidate their motivation to approach language, in comparison with controls.

Test of Vocabulary Recognition: The Quick Test

The Quick Test of Ammons and Ammons, was designed for "quick screening of verbal-perceptual intelligence in practical situations" (1962, p.111). It was reported to correlate "nearly perfectly" (.95) with its longer sister test, the Full Range Picture Vocabulary Test (Ammons and Huth, 1949). Since Ammons and Ammons observed further, that "studies of the FRPV have shown its scores to be correlated better with those on the 1937 Stanford Binet than are WISC scores, and better with scores on various forms of the Wechsler than are 1937 Stanford Binet scores", they concluded that "the QT measures something very like general intelligence as understood by most people" (1962, p.142).

It is not, however, its ability to discriminate intelligence that made the Quick Test of interest for the present research. Rather, since a small pilot study conducted with institutionalized working-class offenders indicated that their co-operation would be increased if no reading or writing was required of them (some nervous enquiries

Table 2: Design Varying Planful/Nonplanful, Impersonal/Interpersonal, and Verbal Expressive/Nonverbal Expressive Dimensions.

	PLANFUL		NONPLANFUL	
	Verbal Expressive	Nonverbal Expressive	Verbal Expressive	Nonverbal Expressive
INTERPERSONAL	Measure: Means-Ends Problem Solving Task: Verbal planful Content: has interpersonal connotation Format: Solution of interpersonal problems through story completion Presentation: Initial verbal instructions and verbal input for each item Response: Requires S's verbal expression	Measure: Picture Arrangement Task: Visual planful Content: has interpersonal connotation Format: Rearrangement of disarranged picture sequences from WAIS (3) — Louie, Taxi, Flirt NHAIS (2) — Rail, Mini WISC (3) — Gardener, Rain, Sleeper Presentation: Initial verbal instructions Response: Requires NO verbal expression	Measure: People Photos Task: Visual nonplanful Content: has interpersonal connotation Format: Description of (people) photographs Presentation: Initial verbal instructions Response: Requires S's verbal expression	Measure: Test 8 (Processing of Instructions, Interpersonal) Task: Verbal nonplanful Content: has interpersonal connotation Format: Performance of diverse actions after prolix instructions Presentation: Initial verbal instructions and verbal input for each item Response: Requires NO verbal expression
IMPERSONAL	Measure: Survival Tasks Task: Verbal planful Content: involves no other person Format: Solution of impersonal problems through story completion Presentation: Initial verbal instructions and verbal input for each item Response: Requires S's verbal expression	Measure: Porteus Maze Task: Visual planful Content: involves no other person Format: Drawing solutions to mazes 3 Porteus Mazes: Year XII Year XIV Adult Presentation: Initial verbal instructions Response: Requires NO verbal expression	Measure: Non-People Photos Task: Visual nonplanful Content: involves no other person Format: Description of (non-people) photographs Presentation: Initial verbal instructions Response: Requires S's verbal expression	Measure: Test 7 (Processing of Instructions, Impersonal) Task: Verbal nonplanful Content: involves no other person Format: Performance of diverse actions after prolix instructions Presentation: Initial verbal instructions and verbal input for each item Response: Requires NO verbal expression

like "I wouldn't have to read or write anything would I?" made the situation clear), it seemed appropriate to look for a test that could elicit, from pictures, indications of vocabulary knowledge.

The authors of the Quick Test acknowledged the usefulness of the test with "unmotivated or negatively motivated persons, such as chronic juvenile delinquents and prisoners" (Ammons and Ammons, 1962, p.132), but, more importantly, they reported a correlation of forms 1+2+3 of the test with school grades in social studies, reading, and spelling in a research by Burgess and Wright in 1962. This gives a reasonable basis for using the test as an index of working vocabulary knowledge.

Test Description

The subject was required to point to that picture of four which best fitted the word read out by the researcher from a graded list of words. A correct designation was to earn one point. Testing was to cease after six consecutive failures. For the stimulus pictures of the test, the instructions, and the list of words see Brown (1989), Appendix N.

Scoring Category

Since this test was to be used as an index of word knowledge, the raw score summation of correct responses (*Quick Test, raw score*) was used as the scoring category.

Test of Attitude to Language

Since it was important to gain from this research not only some qualitative indications of efficacy with language, but also attitude to or motivation towards its use,

as well as any indication of preference for movement activities by delinquents, a test called the Attitude to Language Test was devised. This test consisted of 51 items which were to be responded to in two different sections of the test : In the first section, the subject was to rate each item as it was read out to him as being important or not important to him by giving a yes/no response. In the second section of the test he was to circle a number on a scale of 1-5, indicating the degree of his liking or not liking of the content of the same items as they were again read out to him. (A score of 5 indicated most liking).

The 51 items consisted of 26 items pertaining to verbal communication, for example, "speaking with friends", "other people talking"; four items of movement activity, for example, "motorbikes", "doing physical things, sport or exercise"; and numbers of filler items of various themes, for example, "eating vegetables", "the Rolling Stones", which were included in the test to obscure the purpose of the ratings.

The rationale for this test being a measure of motivation with respect to language/action was as follows: It was considered that if language items were to be less frequently endorsed as being important and were rated as being less liked by delinquents than by controls, a comparative motivational difficulty in relation to language might be construed, as a consequence, for delinquents. Moreover, if at the same time, movement activities were to be more frequently endorsed as important, and were rated as being more liked by delinquents than by controls, a comparative preference for action above language might be deduced for delinquents.

Scoring

Four variables indicating two different aspects of attitude to language and to

movement activities - liking and importance - were scored from the test: 1) *Importance of language* was scored from a summation of the number of "yes" responses to the 26 language items, 2) *liking of language* was scored from a summation of the ratings marked on the scale of 1-5 of the language items, 3) *importance of movement activities* was scored from a summation of the number of "yes" responses to the four movement items, and 4) *liking of movement activities* was scored from a summation of the ratings on the scale of 1-5 of these same four movement items.

For the complete Attitude to Language Test and instructions, and a detailing of the items that comprise the four variables scored from the test see Brown (1989), Appendix O.

2.3 *Procedure*

The administration of tests took place over a three-year period. It involved the co-operation of 26 agencies, testing in 18 venues, and the conducting of interviews in four others. One hundred and eighty subjects were tested on two occasions for an aggregate time of four hours each.

The researcher tried to create similar testing conditions for all subjects, but with the changes in venue, the physical testing environment was not constant. This would have had some effect on Tests 7 and 8 (Processing of Instructions, Impersonal and Interpersonal), in particular, which depended on instructions to manipulate objects in the room, yet room dimensions and aspects, table sizes and so forth, varied considerably. Nevertheless, it was felt that an acceptable, basic comparability did exist, all necessary physical objects in the room being present. For example, there was always a window in the room, since one item of Test 7 required the subject to put

an object under the window. Objects used for testing were always the same, and, as far as was humanly possible, were presented in the same way.

The testing of probationer and cautioned youths who attended school or work took place, usually, in the early evenings. Control groups and unemployed youths from offender groups were, in the main, tested in the daytime.

The researcher administered all tests and to this extent, comparability of testing conditions was maximized for subjects. To minimize order effects in the sequence of the giving of tests, the 11 tests were presented in four different orders, the order changing every five persons. For the details of the four order sequences see Brown (1989), Appendix P.

No test required subjects to read or to write, the only paper and pencil work required of them being the drawing of mazes for the Porteus Maze Test, the circling of numbers for part two of the Attitude to Language Test in response to the researcher reading out items, and the recording of numbers for the Standard Progressive Matrices.

Four tests were timed with a stopwatch (Standard Progressive Matrices, Non-People Photos, Picture Arrangement, and People Photos), and four were audiotaped (People Photos and Non-People Photos, the Means-Ends Problem-Solving procedure, and the Survival Tasks). In addition, the researcher also attempted to record in writing what she could of the responses to the latter four tasks, as they occurred, as an aid to future transcribing. The audiotape did cause an initial nervous response from a small number of youths, but when encouraged they appeared to get used to the tape recorder reasonably quickly.

In general, co-operation was extremely high, given the amount of time being asked of subjects. The youths were usually genial, appeared to try hard, and, at least from outward appearances, the motivational problems in relation to compliance often attributed to delinquents were not in evidence from any of the offender groups, who seemed to be trying to please. Each youth was paid $5 at the end of the second session and was praised for what was always a fine effort.

2.4 *The Coding of Tests*

The researcher coded nine of the eleven tests. The remaining two tests (The People and Non-People Photos Tests) were coded by the one person, a high school teacher who worked as a part-time research assistant. A number of discussions were had with the coder to ensure she understood the coding regimen, and a random sample of records was scrutinized to establish reliability. Coding bias was minimized by the tests being coded in random order, groups unidentified.

Four of the tests, including the two coded by the coding assistant, had to be transcribed from audiotapes before they could be coded. A grant from the Criminology Council, Canberra, had enabled the coding assistant and also transcribers to be employed on the research. The transcribing was an immensely time consuming task and required the work of six transcribers; two of the transcribers did the majority of the tapes. The transcribing took 18 months although the testing and the transcribing phases of the research overlapped. To estimate the accuracy of transcriptions, the researcher retranscribed a random sample of excerpts from the tapes worked on by the different transcribers, and found their transcriptions to be of high quality.

CHAPTER THREE

Results

3.1 *Synopsis of Analysis*

Means and standard deviations were computed for each dependent variable and for the control measures for the delinquent and nondelinquent middle-class and working- class groups. The significance of differences between group means was established using a two-way, nonrepeated measures analysis of variance. Since there were only two social classes to be compared, the establishment of social-class differences rested on the findings of significant main effect for class from the analysis of variance. In each instance, the direction of the difference was represented graphically for class by delinquent-status groups.

The establishment of differences related to delinquent status was, on the other hand, based on orthogonal, planned comparisons, after Winer (1971). Three comparisons were made, the primary comparison being between the delinquent groups combined and the control groups combined. Since it was also hoped to establish whether gradations in severity of delinquent status would be reflected in the results, those groups considered to have had more frequent or more severe delinquent involvement showing more marked effects, the second comparison was between institutional and probation groups combined and cautioned groups, and the third between institutional groups and the probation groups. In the event of significant interaction between class and delinquent status, six planned comparisions were calculated, the three comparisons being made for working class and for middle class separately. (See Brown, 1989, Appendix Q, for the formulae used in these planned comparisons.) The comparisons have been listed in Tables 3 and 4 as a reference key for the results which follow.

Table 3

Planned Comparisons Where No Significant Interaction Exists Between Social Class and Delinquent Status

	Planned Comparisons		
Social-Class Groups	Comparison 1	Comparison 2	Comparison 3
Middle Class + Working Class	Institutional + Probation + Cautioned vs Controls	Institutional + Probation vs Cautioned	Institutional vs Probation

Table 4

Planned Comparisons Where Significant Interaction Exists Between Social Class and Delinquent Status

	Planned Comparisons		
Social-Class Groups	Comparison 1	Comparison 2	Comparison 3
Middle Class	Institutional + Probation + Cautioned vs Controls	Institutional + Probation vs Cautioned	Institutional vs Probation
Working Class	Institutional + Probation + Cautioned vs Controls	Institutional + Probation vs Cautioned	Institutional vs Probation

In the course of examining the effectiveness of the control measures, it was found that there was a disparity in nonverbal intelligence between delinquent and control groups. Ravens IQ was then covaried with all other variables except for age. To be able to present the three control measures of age, social class, and IQ as a unit, when, of those variables, only the data pertaining to social class were covaried, the uncovaried results for social class are reported along with those for age and IQ. For all other variables, covaried results are reported. However, data analyses using uncovaried scores have additionally been detailed in the doctoral research from which this report is taken. This was done so that group differences which were significant only before or after covariance could be compared with differences in the companion analyses. (For the group mean scores and standard deviations, unadjusted for Ravens IQ, followed by graphs depicting those unadjusted group differences, and analysis of variance results cf. Brown, 1989, Appendices A-O.)

The level of significance adopted in this study was $\alpha = .01$, denoted ** throughout. This conservative level was set because of the large number of variables to be subjected to statistical analysis and the consequent possibility of chance effects emerging. Notwithstanding this, any interaction between class and delinquent status where the F ratio had a probability of occurrence of less than or equal to .05, denoted *, was then subjected to six planned comparisons, as indicated, so that significant differences between delinquent-status groups by class would not be missed. The results of these comparisons were, however, only considered significant where $p < .01$.

3.2 *Sample Characteristics*

Delinquent-status group means by social class for the three control measures of age, nonverbal intelligence (Raven's IQ), and social class are depicted in Figure 1. The analyses were to assess the comparability of groups in terms of age and nonverbal intelligence and to establish whether the ratings into working class and middle class were, in fact, statistically different.

3.2.1 *Age*

The mean age of each delinquent-status group by social class is depicted in Figure 1(a). In the analysis, the main effect for social class was nonsignificant, $F(1,172) = 0.15$. However, the interaction between social class and delinquent status, $F(3,172) = 2.63^{*}$, exceeded the $P < .05$ criterion level applied to interaction effects.

Subsequent orthogonal planned comparisons showed the following results: For middle-class groups, there was no overall difference between controls and delinquent groups, $F(1,172) = 0.87$; within the delinquent groups, the institutional and probation groups together did not differ significantly from the cautioned group, $F(1,172) = 2.38$. However, the probation group was significantly older than the institutional group, $F(1,172) = 11.38^{**}$. For the working-class groups, there were no significant differences in age between the groups compared, whether the comparison was between controls and delinquent groups, $F(1,172) = 1.39$, institutional and probation groups combined compared with those cautioned, $F(1,172) = 4.07$, or between institutional and probation groups, $F(1,172) = 0.00$.

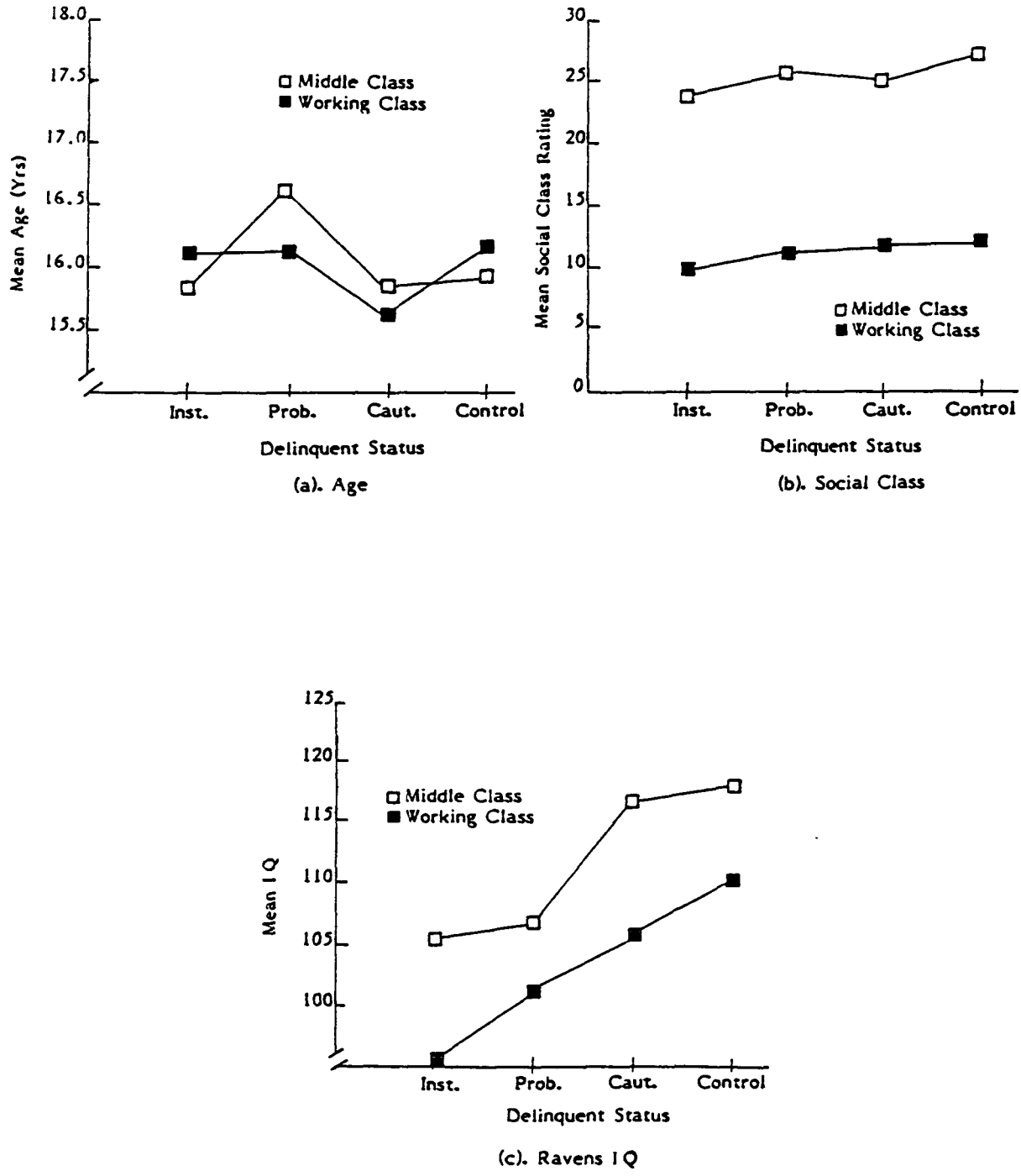


Fig. 1. Mean Scores for the Control Group and Delinquent Groups by Social Class for Age, Social Class Rating and Ravens I Q.

Since the one significant discrepancy found with respect to age, that between the middle-class institutional and probation groups, related to months rather than years, the mean difference between the means being 5 months, the age dispersion across the sample seemed generally comparable. Age was, then, considered to have been reasonably controlled.

3.2.2 *Nonverbal Intelligence*

The analysis of variance showed a significant main effect for class, $F(1,172) = 23.37^{**}$, which can be seen from Figure 1(c) to result from the middle-class groups being consistently higher in intelligence than those from the working class. No significant interaction occurred between social class and delinquent status, $F(3,172) = 0.51$. As the figure suggests, nonverbal intelligence also differed as a function of delinquent status. Delinquents overall differed significantly in intelligence from controls, $F(1,172) = 20.12^{**}$. Also, the institutional and probation groups, while not significantly different from each other, $F(1,172) = 2.83$, were together lower in intelligence than were those who were cautioned, $F(1,172) = 14.19^{**}$. This latter result lends itself to two different kinds of interpretation: Firstly, those young persons who are cautioned rather than charged may be cautioned because they are perceived by authorities as being intelligent. This contributes to a positive picture that eventually allows them the benefit of discretionary doubt by police who charge or caution depending, in part, on such factors. Secondly, the cautioned group, being more intelligent, are either consequently endowed with more skill in evasion of authorities, or else their intelligence causes them to stop short of serious or frequent offending.

The disparity in intelligence between delinquents and controls was a matter for concern. Only a base level criterion for IQ had been used as a control, the hope being that subjects would be of approximately the same intelligence across groups when a nonverbal measure was used. The finding of difference on Ravens IQ for delinquents compared with controls could reflect what the Hayes and Walker (1986) review suggested, namely, that adjudicated delinquents are normally not as intelligent as nondelinquents. However, two related matters are drawn to attention. Firstly, there was a rebuttal of that view in chapter one. There, it was argued that evidence interpreted by some researchers as indicating generally lower intelligence in delinquent populations is, rather, a function of verbal deficit, the verbal problems of delinquents becoming manifested in verbal intelligence testing results, which depress overall scores. Secondly, if this argument were to be accepted, the fact that a nonverbal measure of intelligence was used in this study would then not lead to a necessary conclusion that findings of lower intelligence among the delinquent sample is indicative of what normally obtains. Instead, the findings could indicate that control subjects selected, for example, from among railways apprentices who are, in the current economic climate, perhaps a more highly selected group than in the past, did not constitute as representative a sample as did delinquent groups.

The decision had, then, to be made whether to attempt to compensate statistically for intelligence differences or to accept the findings of disparity, yet then be unable to draw unambiguous conclusions of any difference between delinquents and controls as being primarily other than intelligence related. Despite the paradox pointed up by Lord (1967) in relation to covariance of unmatched control variables,

and the reticence of researchers like Freedman et al. (1978) to proceed with covariance in such a situation, it was decided to opt for statistical compensation for intelligence through covariance, at the same time referring when there was significant discrepancy, to uncovaried data.

3.2.3 *Social Class*

Subjects had been deliberately contrasted on social class. Accordingly, the highly significant main effect found for social class, $F(1,172) = 793.89^{**}$ was to be expected. Figure 1(b) well evidences the clear difference between middle and working class for all delinquent and control groups.

Since the social-class index used was comprehensive, taking into account the occupation of both grandfathers, the father's occupation and the education of both parents, and given the statistical findings of difference between the denoted classes, it can confidently be suggested that different echelons of culture and power are represented by the middle-class and working-class groups in this study. No significant interaction was evident between social class and delinquent status, $F(3,172)=0.32$.

In addition to a significant difference being established between classes, it was necessary to explore the possibility of class differences appearing across delinquent-status groups. Orthogonal comparisons of delinquent-status data showed no significant difference between the institutional and probation groups combined compared with those cautioned, $F(1,172) = 2.44$. However, a significant difference in social class was found between institutional and probation groups, $F(1,172) =$

9.62**, the institutional groups once again being lower in rating. Such a difference would follow if comparative deprivation were related to institutionalization, although such an argument becomes difficult to sustain with middle-class subjects comprising this group together with the working class.

Of more importance for the interpretation of the research was the significant difference found between delinquents and controls in social class, $F(1,172) = 9.20^{**}$, the controls rating higher. Similar to such a finding concerning intelligence, this would mean that any subsequent difference occurring between delinquents and controls could then be construed, at least in part, to an initial difference in class between these groups.

While the dimensions that would influence social-class membership would presumably be numerous, the indices used in this study concentrated on familial education and occupation which could in turn be related to intelligence. Certainly it can be argued that cultural opportunity for a family, including education, could provide stimulation for intellectual growth and that, in turn, intelligence may affect social mobility. The fact that the delinquent and control groups had also been found to differ in intelligence lends support to the idea that perhaps a component of the difference between the delinquents and controls on social class could be intelligence. Analysis of covariance, with Raven's IQ as the covariate, was consequently applied to the data. This resulted in a significant main effect for social class, $F(1,171) = 671.86^{**}$, being maintained and no interaction was evident, $F(3,171) = 0.38$. Planned comparisons of delinquent-status group means did, however, show some change in results. While comparison two still yielded a nonsignificant result,

$F(1,171) = 0.98$, and comparison three was, again, found to be significant, $F(1,171) = 8.24^{**}$, the previous .01 significance level found in comparison one, the comparison between delinquents and controls, was not maintained, $F(1,171) = 5.54$. This finding gave some confidence to proceeding on an assumption that social-class differences between delinquents and controls were attenuated once intelligence had been compensated for. In addition, it is evident that the differences in class score as a function of delinquent status were extremely small compared with that between classes in general.

3.3 *Dependent Variable Measures*

An important focus for consideration was whether the language comprehension and expressiveness of delinquent youths would differ significantly in efficacy in comparison with that of nondelinquents, and whether social-class membership would lead to difference in language competence. Three different sets of tasks had been used to examine these issues. Firstly, the Quick Test was to establish whether knowledge of basic vocabulary would distinguish the groups. Secondly, two tests, Test 7 (Processing of Instructions, Impersonal) and Test 8 (Processing of Instructions, Interpersonal), had been used to determine whether the groups would respond with varying efficacy to verbal instructions when no verbal expression was also required of them. Thirdly, two tests - People Photos and Non-People Photos - aimed to establish whether the complexity and amount of word use, by class and by delinquent-status groups, would vary significantly. The results of performance on these sets of tasks will be detailed in turn.

3.3.1 *Quick Test*

The expectation that both working-class and delinquent groups would perform at a lower level than their comparison groups on this test of vocabulary was supported. Figure 2 shows that the working-class groups performed consistently less well across all levels of delinquent status, their working vocabulary being less extensive than that of the middle-class groups, and analysis of covariance results yielded a significant main effect for social class, $F(1,171) = 21.05^{**}$.

Planned comparisons of delinquent-status groups showed that while no significant difference was found between the institutional and probation groups combined, as compared with the cautioned, $F(1,171) = 0.01$, the vocabulary of the institutional groups was poorer than for the probationers, $F(1,171) = 7.32^{**}$. Also, importantly, the working vocabulary of delinquents was significantly poorer than that of nondelinquents, $F(1,171) = 13.71^{**}$. What was noteworthy, however, was the lack of expected significant interaction results, such that working-class delinquents would show least competence on this test. There was no significant interaction at all, $F(3,171) = 0.76$.

From the results of the Quick Test, an insufficiency in the word knowledge of delinquent youths was found in comparison with that of nondelinquents and also of working-class youths in comparison with middle-class youths. It needed, further, to be established whether they processed as well what was said to them, and used as many words and sentences and as complex sentence structures as did their peers.

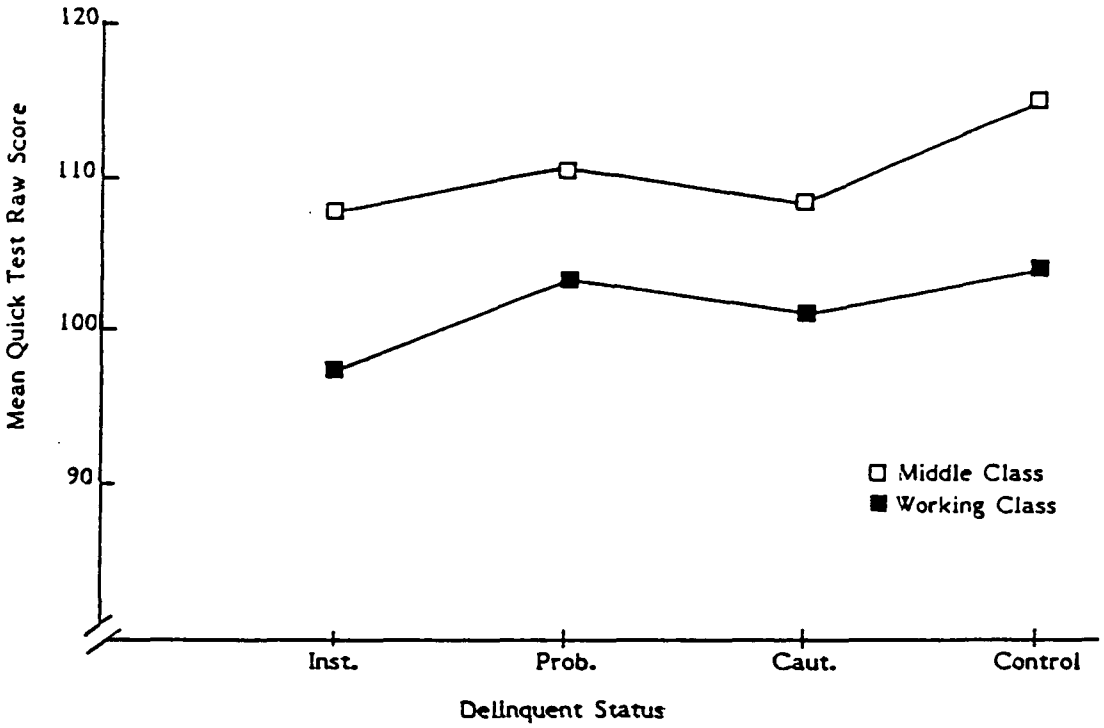


Fig. 2. Mean Scoreswith Intelligence Covaried for the Control Group and Delinquent Groups by Social Class for Quick Test, Raw Score.

Since motivational problems in attending to language were thought to relate to delinquent status but not to social class, the expectation was that delinquents, in comparison with nondelinquents, would not be able to complete successfully as many segments of tasks when they were given oral commands, but that social-class groups would not differ in their performance. Tests 7 and 8 (Processing of Instructions, Impersonal and Interpersonal) tested those expectations.

3.3.2 *Test 7 (Processing of Instructions, Impersonal)*

Although the mean + score, Test 7 results presented in Figure 3 show that middle-class groups scored higher than working-class groups, the differences in performance were, in effect, small and the results of the analysis of covariance were as expected: There was no significant main effect for social class, $F(1,171) = 1.90$. It is to be noted, however, that covariance of the analysis with Raven's IQ was needed to achieve this result, uncovaried analysis resulting in a significant difference between the social-class groups on this test (see Brown, 1989, Appendix M). No significant interaction was found between delinquent status and social class for + score, Test 7, $F(3,171) = 0.48$.

To establish whether, as anticipated, delinquent status would, on the other hand, lead to differences between groups on Test 7, planned comparisons were made. Differences were found not to be significant for any of the three comparisons, comparison one resulting in $F(1,171) = 1.02$; comparison two, $F(1,171) = 0.15$; comparison three, $F(1,171) = 0.01$. The expectation that delinquents would perform less well than controls on Test 7 was not substantiated.

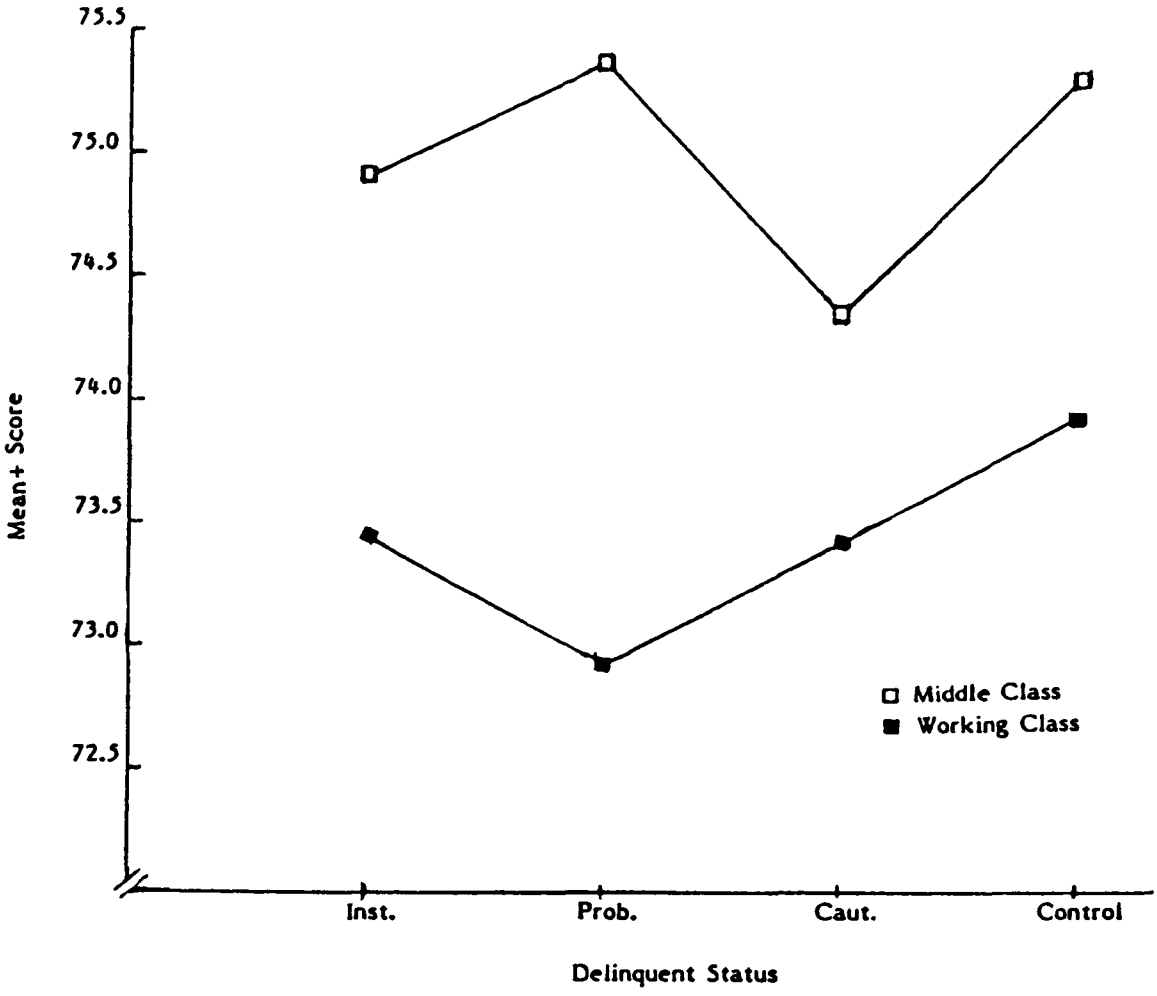


Fig. 3. Mean Scores with Intelligence Covaried for the Control Group and Delinquent Groups by Social Class for + Score, Test 7.

3.3.3 *Test 8 (Processing of Instructions, Interpersonal)*

The mean + score, Test 8 results covaried with intelligence, for middle-class and working-class delinquent-status groups, are depicted in Figure 4. A two-way, nonrepeated measures analysis of covariance showed that neither the main effect for social class, $F(1,171) = 4.59$, nor the interaction between social class and delinquent status, $F(3,171) = 1.19$, was significant. The expectation that middle-class and working-class groups would not differ on this task was therefore supported.

Contrary to what had been expected, planned comparisons showed no significant difference between delinquents and controls on performance on Test 8, $F(1,171) = 1.35$. Also, neither comparison two, $F(1,171) = 0.59$, nor three, $F(1,171) = 0.04$, proved significant.

Since neither Test 7 nor Test 8 showed a significant difference between delinquents and controls in how well they could follow verbal instructions, the expectation that delinquents would prove less competent in the processing of verbal material was not supported. This lack of expected finding also obviated the need for testing whether performance related to the further dimension on which Tests 7 and 8 varied, an interpersonal/ noninterpersonal dimension, differed according to whether groups were delinquents or controls. Since the groups had not differed in performance on either test, it became irrelevant whether performance differed between the two tests.

A further issue to be explored concerned not the comprehension of verbal

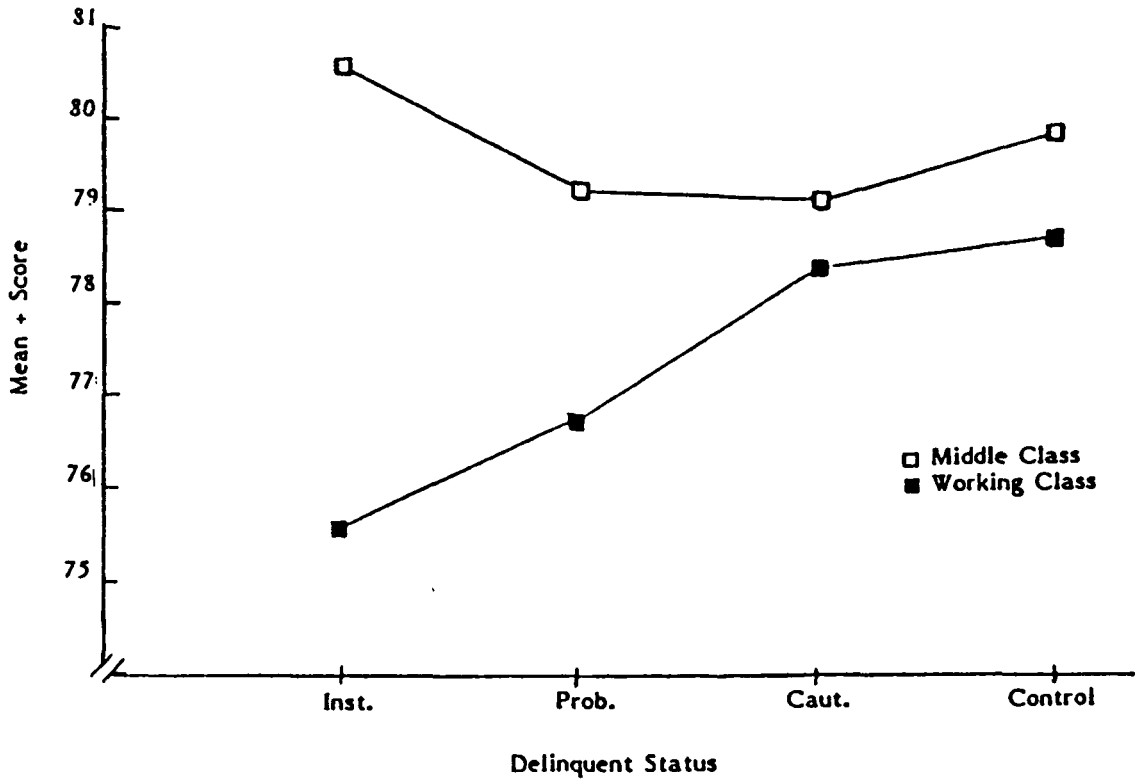


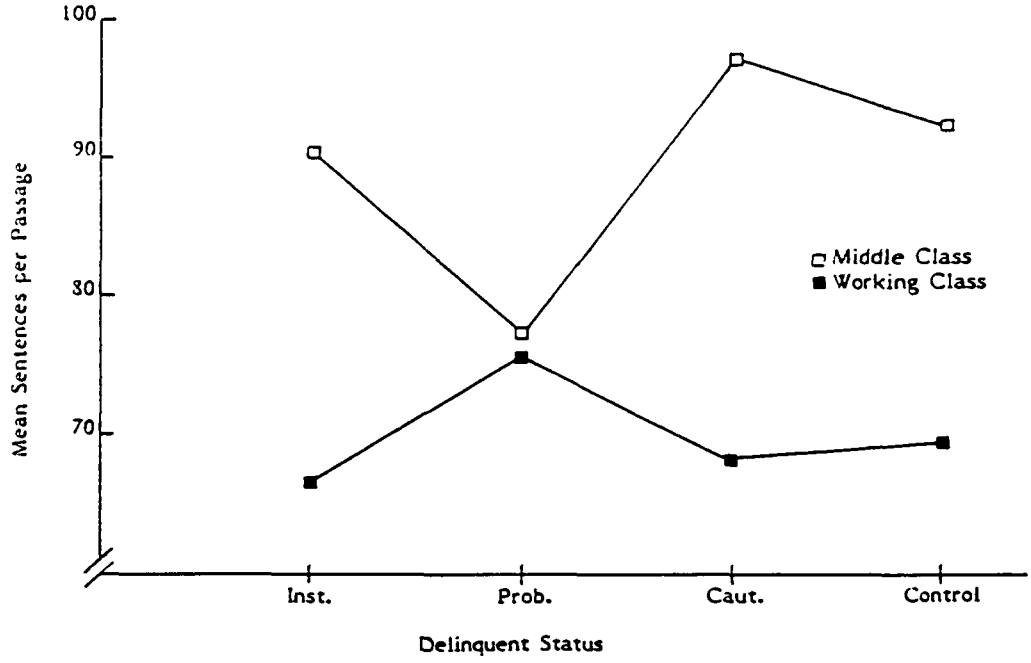
Fig. 4. Mean Scores with Intelligence Covaried for the Control Group and Delinquent Groups by Social Class for + Score, Test 8.

material but its expression, whether social-class groups and delinquent-status groups would differ in the amount and complexity of their speech. The People Photos Test and the Non-People Photos Test were used to gain evidence about this, the expectation being that, because of a motivational problem in the use of language, delinquent youths would not use as many words or sentences nor as complex a language structure as nondelinquents. Working-class groups would also not be expected to produce the same amount or complexity of language as middle-class groups because of their less advantaged circumstances. Given that reasoning, it follows that an interaction between class and delinquent status would also be expected, working-class delinquents performing least well.

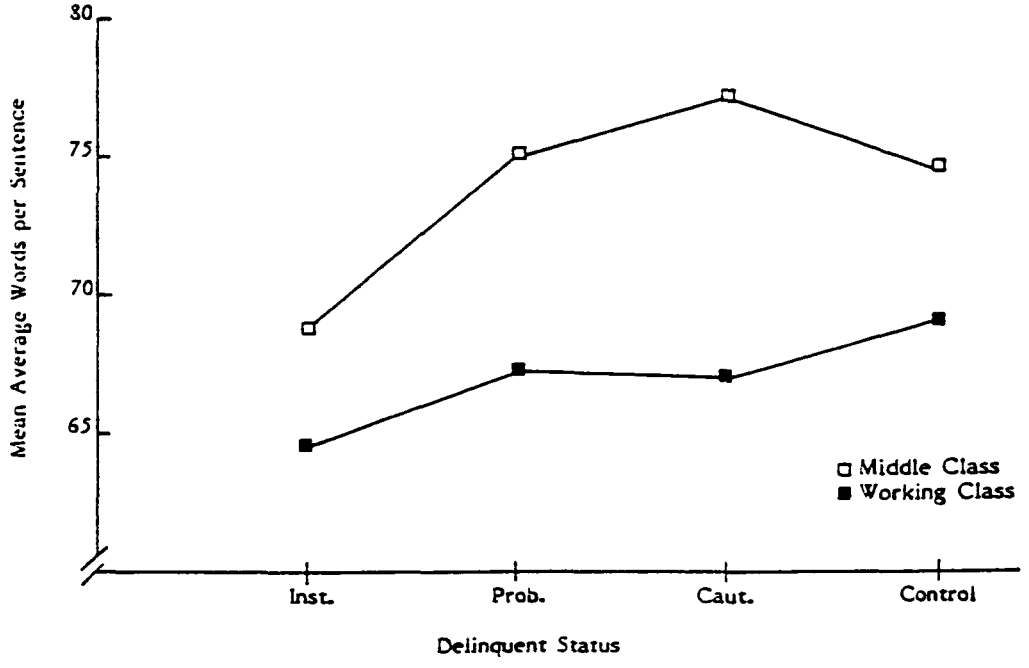
3.3.4 *People Photos Test*

Figures 5 and 6 show the mean covaried scores for indices of productivity and complexity, respectively, for each group. These figures indicate that, for both the indices of productivity (sentences per passage and average words per sentence) and for the two complexity indices (sum of subordinate clauses and Loban index), middle-class groups performed at a higher level than did working-class groups. Results of analysis of covariance applied to these data are presented in Table 5.

As can be seen from that table, middle-class groups used significantly more sentences in their description of photographs, they more frequently used subordinate clauses, and, on a further index of complexity, were found to use significantly more complex sentence structures than working-class groups. The hypothesis, that middle-class youths would use more language and, indeed, more complex language than

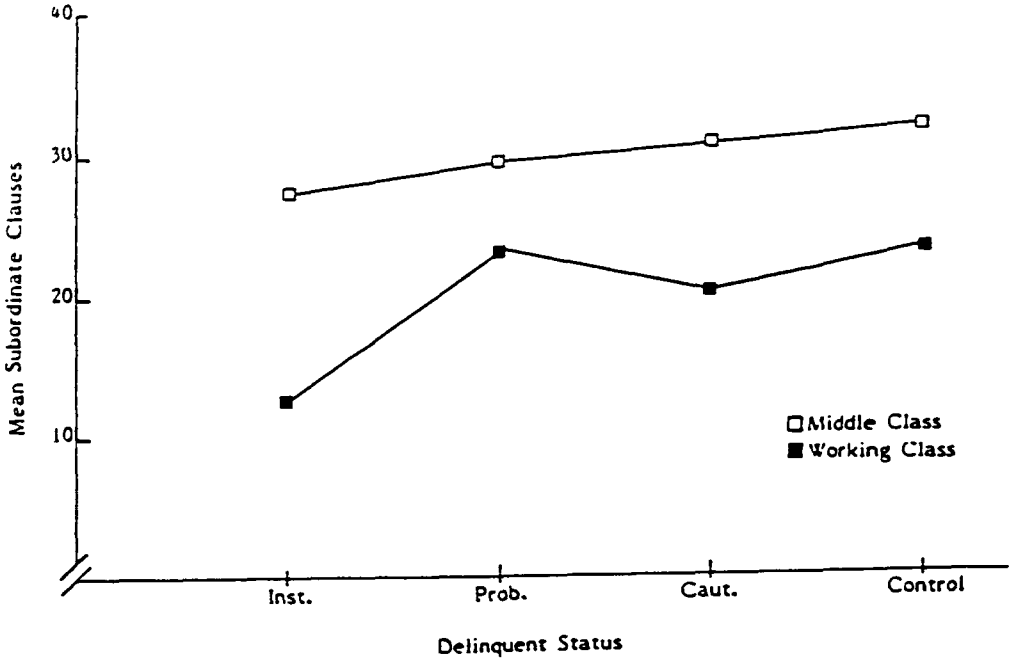


(a). People Photos Test, Sentences per Passage

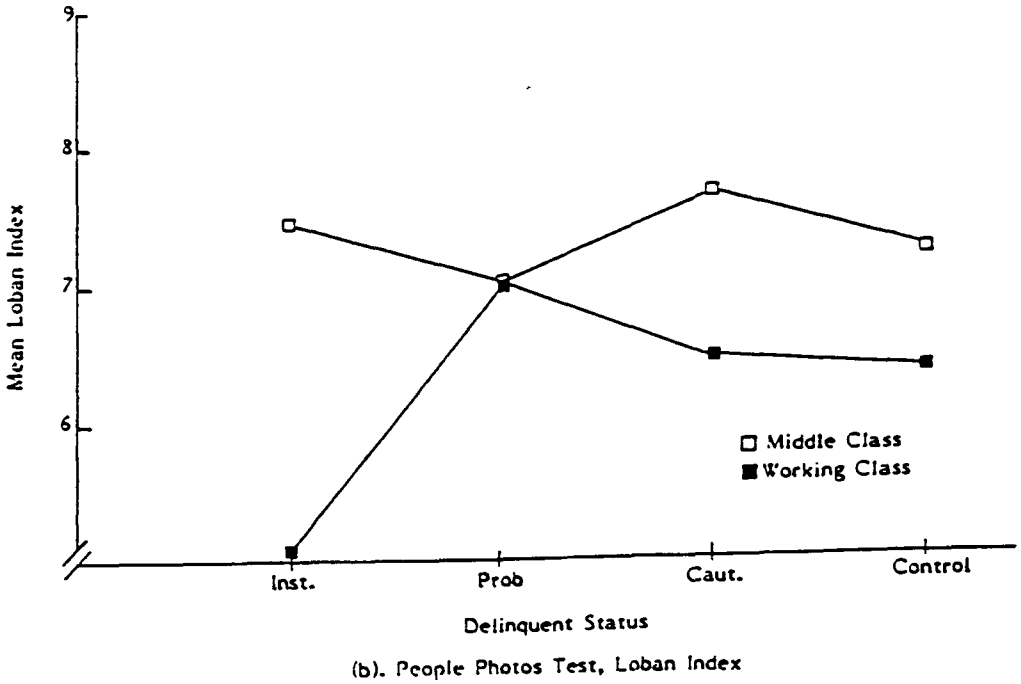


(b). People Photos Test, Average Words per Sentence

Fig. 5. Mean Scores with Intelligence Covaried for the Control Group and Delinquent Groups by Social Class for People Photos Test, Indices of Productivity.



(a). People Photos Test, Sum of Subordinate Clauses



(b). People Photos Test, Loban Index

Fig. 6. Mean Scores with Intelligence Covaried for the Control Group and Delinquent Groups by Social Class for People Photos Test, Indices of Complexity.

Table 5

People Photos Test: Results of Analysis of Covariance for Social Class, Class by Delinquent Status Interaction, and Planned Comparisons for Delinquent Status (with Raven's IQ as the Covariate).

Variable	Class F(1,171)	Delinquent Status F(1,171)	Interaction F(3,171)
Sentences per Passage	6.80**	Comparison 1 0.02 Comparison 2 0.34 Comparison 3 0.13	1.36
Average Words per Sentence	5.01	Comparison 1 0.61 Comparison 2 1.00 Comparison 3 2.41	0.26
Sum of Subordinate Clauses	7.70**	Comparison 1 0.88 Comparison 2 0.41 Comparison 3 2.04	0.32
Loban Index	7.14**	Comparison 1 0.02 Comparison 2 0.72 Comparison 3 2.24	2.08

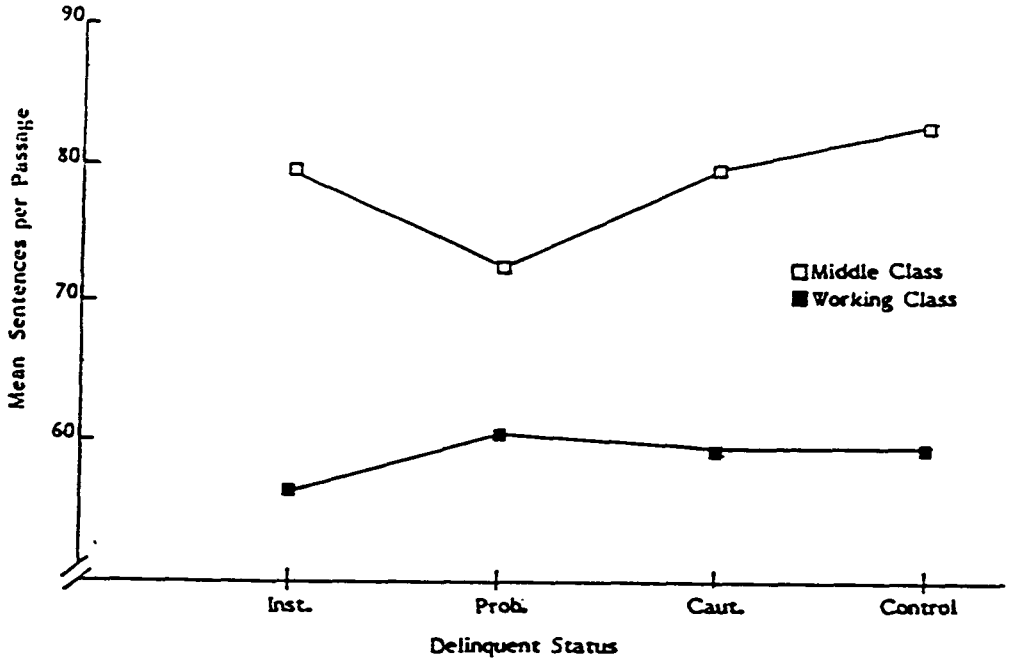
working-class youths, was therefore largely substantiated, only the actual number of words used failing to discriminate statistically. It is interesting with respect to this latter variable, words per sentence, that the main effect for social class was significant when the analysis was performed on uncovaried data (see Brown, 1989,

Appendix J). Contrary to what had been expected, there was no interaction between class and delinquent status for any variable scored from this test, nor did delinquents use language that was significantly more limited in amount, nor less complex, than that used by nondelinquents (cf. planned comparisons, Table 5). Similarly, planned comparisons two and three showed no significant differences between groups of delinquents compared.

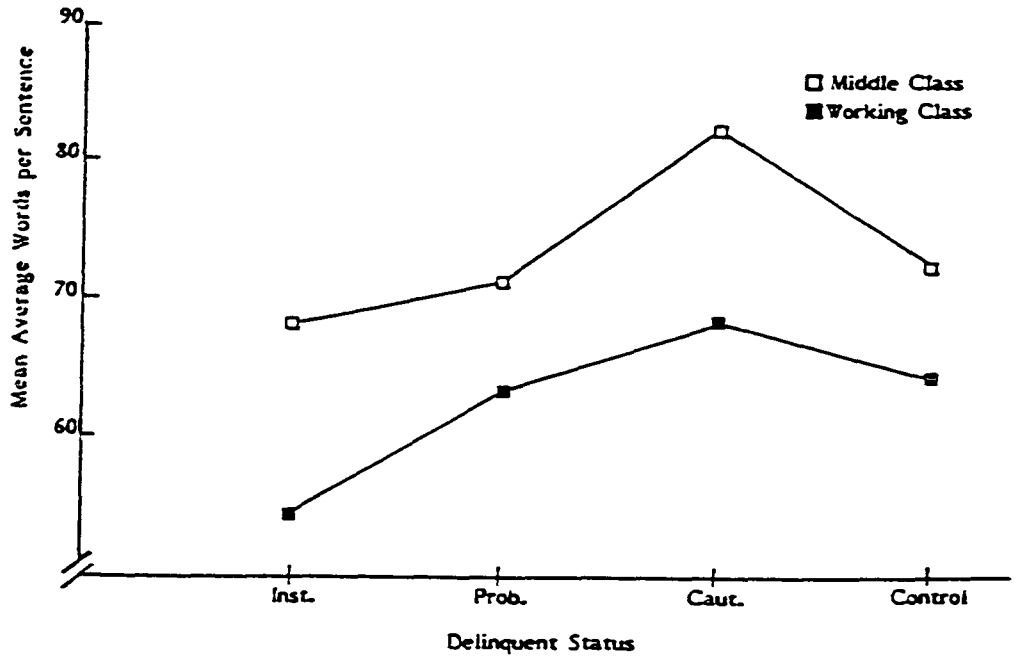
3.3.5 *Non-People Photos Test*

The expectations concerning the amount and complexity of language shown on the Non-People Photos Test were similar to those for the People Photos Test. It was anticipated that both working-class and delinquent groups would not produce as much language or language that was as complex in structure, as would middle-class groups and nondelinquent groups. Also, it was expected that there would be an interaction between social class and delinquent status in the covaried results.

Adjusted group mean scores for indices of productivity and complexity are plotted in Figures 7 and 8 respectively. It is evident from these figures that middle-class groups performed better than working-class groups on all variables of this test. Indeed, there was no overlap at all, working-class groups being consistently less verbally productive, using fewer sentences, fewer words, and showing less complexity in their verbal productions than middle-class groups. Analysis of covariance results reported in Table 6 show that the main effect for social class was significant for all test measures. The expectation that the middle-class groups would perform significantly better on this task, in terms of the amount of language used and

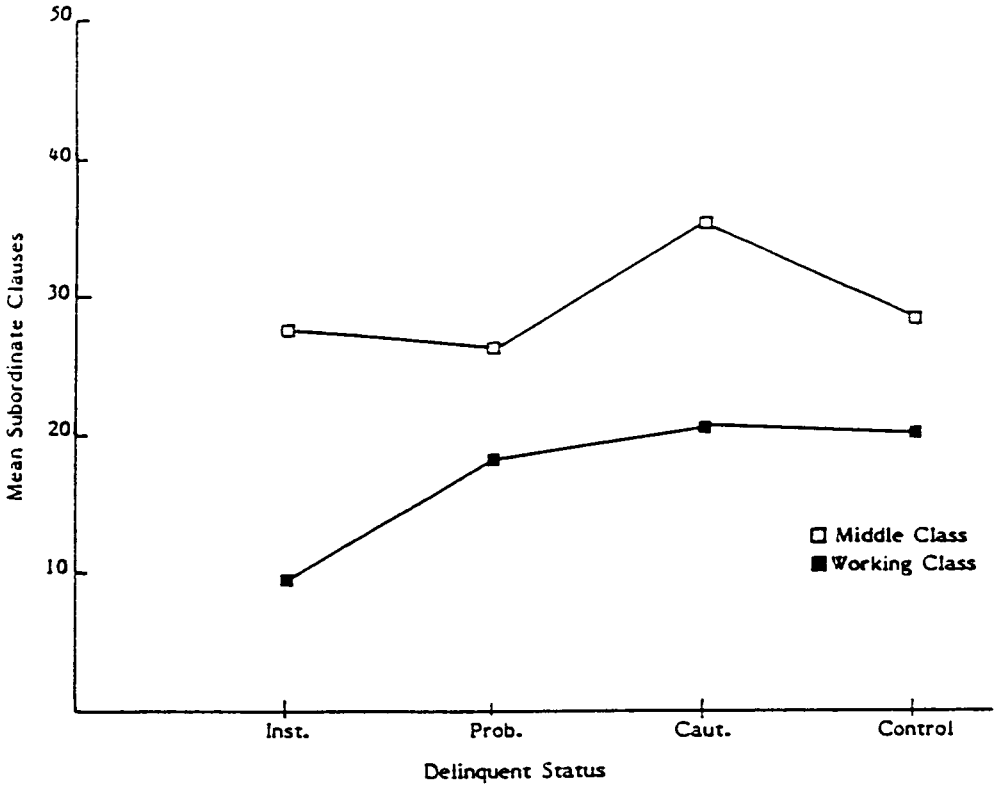


(a). Non-People Photos Test, Sentences per Passage

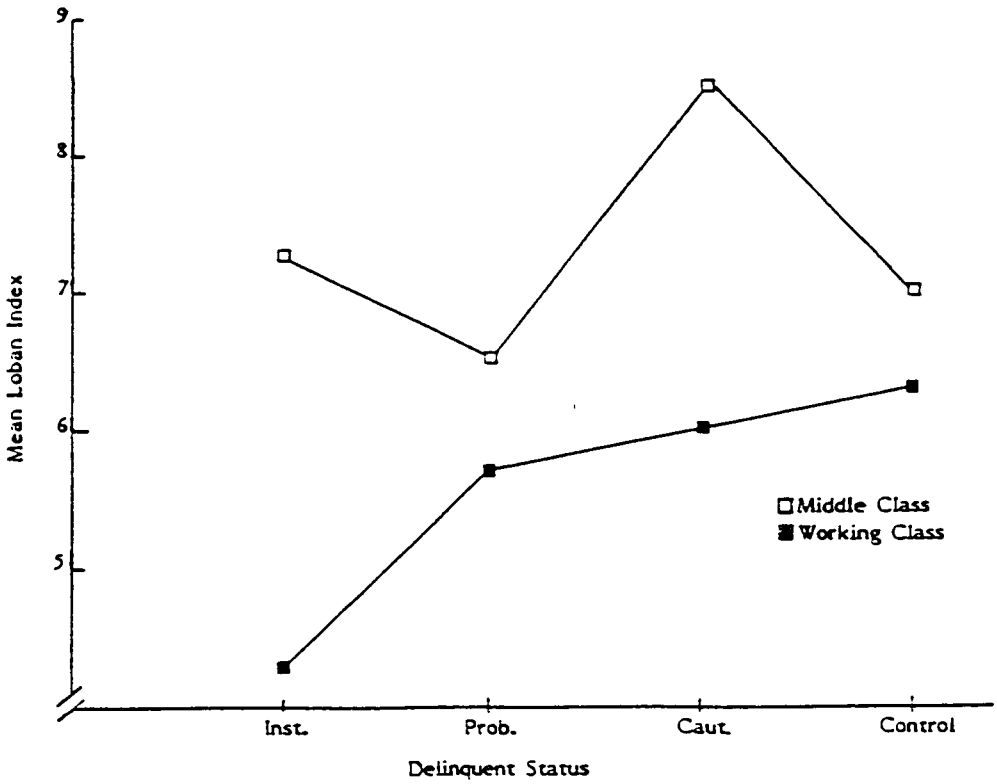


(b). Non - People Photos Test, Average Words per Sentence

Fig. 7. Mean Scores with Intelligence Covaried for the Control Group and Delinquent Groups by Social Class for Non-People Photos Test, Indices of Productivity.



(a). Non-People Photos Test, Sum of Subordinate Clauses



(b). Non-People Photos Test, Loban Index

Fig. 8. Mean Scores with Intelligence Covaried for the Control Group and Delinquent Groups by Social Class for Non-People Photos Test, Indices of Complexity.

the frequency with which they used complex language structures, was, then, entirely supported.

On the other hand, the expected interaction between social class and delinquent status was not found for any variable (cf. Table 6). As can be seen further from Table 6, the results of planned comparisons reveal only one significant finding of group differences on the basis of delinquent status, the cautioned groups employing more words per sentence than the institutional plus probation groups together. While this finding would be expected if severity of delinquent status were to relate to language production, in the absence of any results showing that delinquents were less able than controls, the finding is
anomalous. It must be concluded that delinquent status did not generally influence performance on this test.

Viewed together, the results of the People Photos Test and the Non-People Photos Test indicate a general pattern of difference between social classes in the amount and complexity of the language they produce, but no such significant difference between delinquents and nondelinquents. Also, in view of this lack of significant difference between delinquents and controls on either of the photos tests, as had occurred with Tests 7 and 8 (Processing of Instructions, Impersonal and Interpersonal), it was then not appropriate to pursue differences between delinquents and controls with respect to a further dimension on which the tests varied, the interpersonal/noninterpersonal dimension.

Table 6

Non-People Photos Test: Results of Analysis of Covariance for Social Class, Class by Delinquent Status Interaction, and Planned Comparisons for Delinquent Status (with Raven's IQ as the Covariate).

Variable	Class F(1,171)	Delinquent Status F(1,171)	Interaction F(3,171)
Sentences per Passage	14.38**	Comparison 1 0.22 Comparison 2 0.10 Comparison 3 0.16	0.61
Average Words per Sentence	8.69**	Comparison 1 0.01 Comparison 2 7.81** Comparison 3 3.10	0.43
Sum of Subordinate Clauses	13.23**	Comparison 1 0.07 Comparison 2 3.50 Comparison 3 0.61	0.55
Loban Index	15.62**	Comparison 1 0.24 Comparison 2 5.49 Comparison 3 0.25	1.76

To this stage in the detailing of the findings of this study, it has been shown that, as hypothesized, a significant difference in language can be demonstrated between social classes, the working class performing less well than the middle class in their knowledge of vocabulary and in the amount of speech they produce and in its complexity. By contrast, as hypothesized, there was no difference in the ways the two social classes responded to verbal instructions, this being an index of their ability to comprehend, to process, language.

Where significant differences between groups were anticipated on the basis of delinquent status, the results proved, however, to be chequered. As expected, delinquent groups demonstrated more limited vocabulary knowledge than nondelinquents, but no interaction with social class was found such that working-class delinquents showed least vocabulary knowledge. The results from the four tests which were planful but varied on the interpersonal/ noninterpersonal and verbal expressive/nonverbal expressive dimensions, namely Tests 7 and 8 (Processing of Instructions Impersonal and Interpersonal) and the People Photos and Non-People Photos tests (cf. p.88 where this design is detailed), were instructive. Contrary to expectation, delinquent groups showed no less facility in responding appropriately to verbal instruction than did controls, when verbal expression was not also required of them (Tests 7 and 8). When they did have to verbalize, however (People Photos and Non-People Photos tests), also contrary to expectation they showed no decrement in language compared with controls, in terms of the amount and the complexity of the speech they used. Since none of the tests discriminated between delinquents and controls, the issue of whether the groups responded better when the tasks were interpersonal or impersonal became irrelevant.

It can be said, then, in summary, that when tasks were not planful, and irrespective of whether they were interpersonal or impersonal in nature, the results indicate that delinquents attended to verbal instructions and produced similar amounts and complexity of speech as did nondelinquents. As indicated before, however, the vocabulary knowledge of delinquents and controls nevertheless differed.

The next question to be considered, and one that was touched upon in the

detailing of the results of Tests 7 and 8, was whether there is any evidence to suggest that a motivational problem in dealing with language material might exist on the part of delinquent-status groups but not social-class groups. The Attitude to Language Test had been used to examine this question.

3.3.6 *Attitude to Language Test*

It was anticipated that the results of this test would show no significant difference between the performance of the middle-class and working-class groups. It was also anticipated that delinquents would less often endorse language and more often endorse movement activities as being important to them, and rate their liking of language lower and their liking of movement activities higher than would nondelinquents. From such findings, a poorer motivation to use language and a corresponding predilection for movement activities might be construed for delinquents as compared with nondelinquents.

Adjusted group mean scores for the four Attitude to Language Test variables are depicted in Figure 9. As is evident from this figure, there was no consistent difference between middle class and working-class groups on this test. The analysis of covariance results shown in Table 7 verify that, as expected, there was no significant main effect for social class and no significant interaction between social class and delinquent status for any of the four variables.

Also, the results of planned comparisons computed to investigate differences which might exist between delinquent status groups (see Table 7) were generally consistent

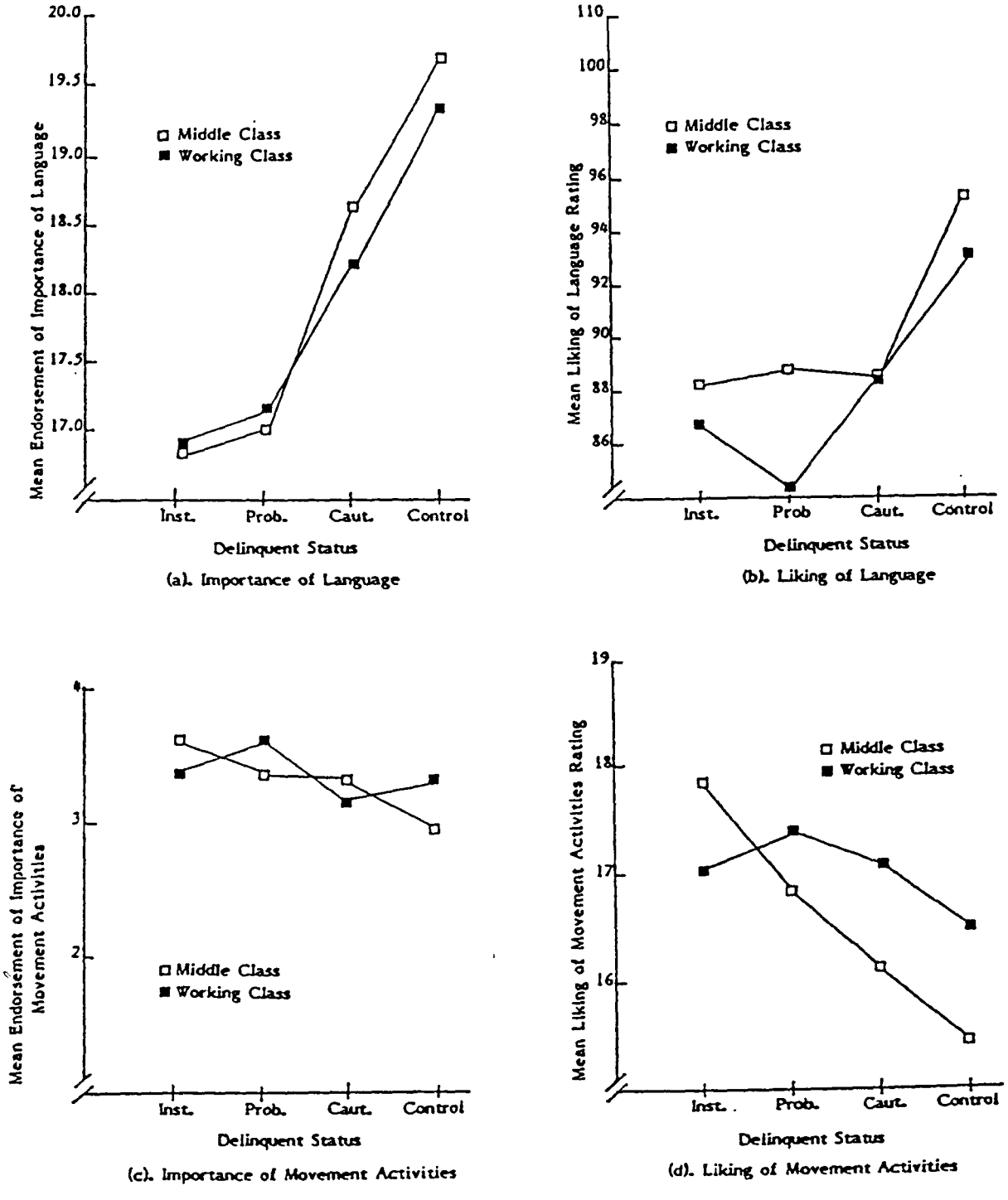


Fig. 9. Mean Scores with Intelligence Covaried for the Control Group and Delinquent Groups by Social Class for Attitude to Language Test Variables.

Table 7

Attitude to Language Test: Results of Analysis of Covariance for Social Class, Class by Delinquent Status Interaction, and Planned Comparisons for Delinquent Status (with Raven's IQ as the Covariate).

Variable	Class F(1,171)	Delinquent Status F(1,171)		Interaction F(3,171)
Importance of Language	0.16	Comparison 1 Comparison 2 Comparison 3	8.55** 2.89 0.03	0.18
Liking of Language	0.57	Comparison 1 Comparison 2 Comparison 3	9.10** 0.33 0.20	0.23
Importance of Movement Activities	0.14	Comparison 1 Comparison 2 Comparison 3	6.63 3.00 0.01	1.96
Liking of Movement Activities	0.13	Comparison 1 Comparison 2 Comparison 3	8.22** 2.00 0.45	1.33

with the hypotheses made. On all but one variable of the Attitude to Language Test, delinquent groups performed significantly differently from controls. Delinquents significantly less often endorsed language as being important to them, rated liking of language lower and expressed more liking for movement activities than did controls. The one variable which failed to significantly discriminate was importance of movement activities. It is noteworthy that, when analysis of variance was applied to these data (cf. Brown, 1989, Appendix O), the variable did significantly discriminate between delinquents and controls, the delinquents more often endorsing movement as being important to them. Once intelligence was covaried, however, the difference

failed to reach significance. It would seem that, in contrast to the liking of movement activities, perceiving them as important may be partially mediated by the intelligence of delinquents.

The results from the Attitude to Language Test were, overall, in accord with the expectation that delinquents would have a poorer attitude to language but more positive feelings towards movement activities in comparison with controls, and that working and middle classes would not respond differently on the test. From those results lower motivation to deal with language might be inferred for delinquents than for nondelinquents.

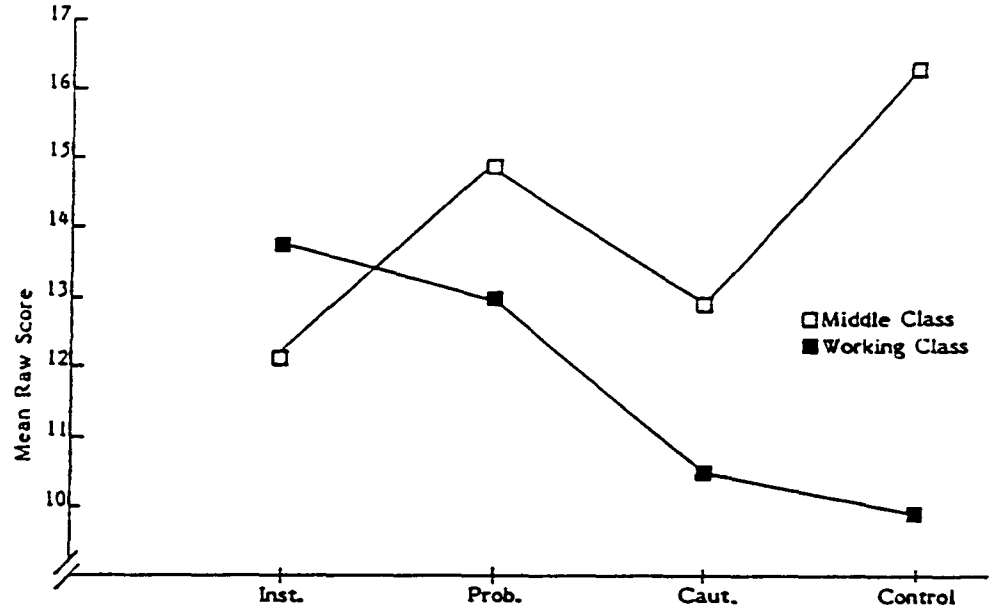
In addition to exploring such parameters of the language performance of delinquents and comparing these with the performance of social-class groups, it was also the task of this study to investigate the planning capacity of delinquents, looking for links between language deficit and any lack of efficiency in planning. As previously indicated, four of the tests discussed to date, namely, Tests 7 and 8 (Processing of Instructions, Impersonal and Interpersonal) and the People Photos and Non-People Photos tests, had been varied according to verbal expressive/ nonverbal expressive and interpersonal/ noninterpersonal dimensions but had not involved any evident planning component. The four tests to follow, while also having been varied on the verbal expressive/nonverbal expressive and the interpersonal/ impersonal (noninterpersonal) dimensions, are all planful (cf. p.88 detailing this design). The two which required no verbal expression, Picture Arrangement and Porteus Maze, will be considered first. Since both these tests required largely visual planning and

also needed no verbal response, it was not expected that delinquents and controls would differ on the tests. Also, there were no grounds to believe that social-class groups would perform differently on either test.

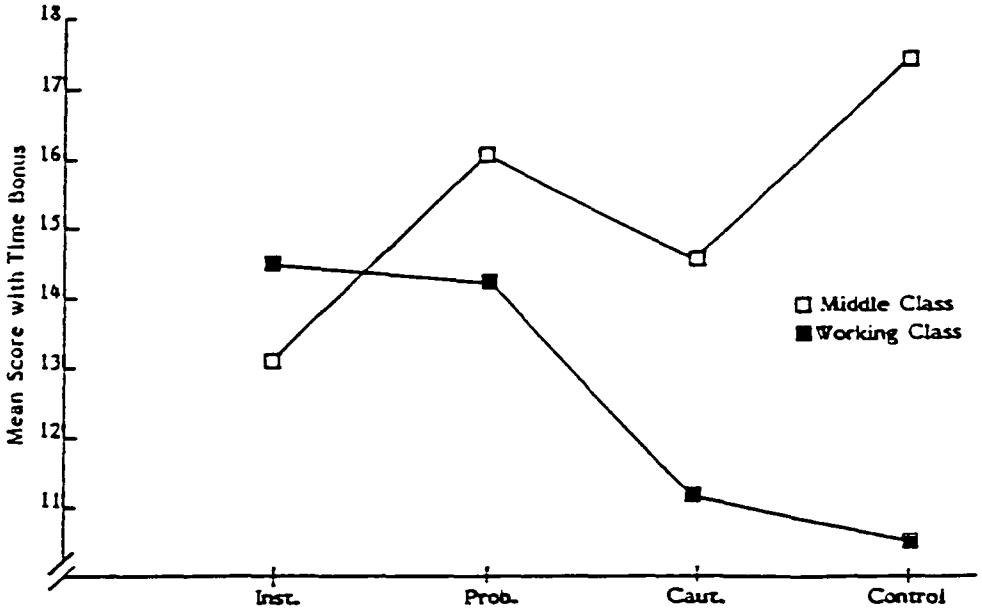
3.3.7 *Picture Arrangement*

The adjusted mean scores for the two dependent variables of this test, raw score and score with time bonus, are presented graphically in Figure 10. While this figure shows that there was a tendency for the middle-class groups to score better on both measures of Picture Arrangement, the tendency was not statistically significant. Analysis of covariance applied to the data from the variable, raw score, showed no significant main effect for class, $F(1,171) = 0.12$. The interaction between social class and delinquent status, $F(3,171) = 2.86^*$, did, however, exceed the $P < .05$ criterion level applied to interaction effects. For the second variable, score with time bonus, neither the main effect for social class, $F(1,171) = 0.46$, nor the interaction between social class and delinquent status, $F(3,171) = 2.57$, was significant.

Because of the interaction result for raw score, Picture Arrangement, planned comparisons of delinquent-status groups were determined for middle class and for working class separately for this variable. None of the comparisons proved significant. There was no overall significant difference between the middle-class nondelinquent and delinquent groups, $F(1,171) = 4.70$. Also, the institutional and probation groups together did not differ significantly from the cautioned, $F(1,171) = 0.20$, and the probation group and the institutional group also did not perform significantly differently, $F(1,171) = 2.57$. For the working-class groups, there were, similarly, no significant differences found in performance between any of the



(a). Picture Arrangement, Raw Score



(b). Picture Arrangement, Score with Time Bonus

Fig. 10. Mean Scores with Intelligence Covaried for the Control Group and Delinquent Groups by Social Class for Picture Arrangement Variables, Raw Score and Score with Time Bonus.

groups compared, for controls compared with delinquents, $F(1,171) = 2.74$, institutional and probation groups combined compared with those cautioned, $F(1,171) = 2.39$, or between the institutional and probation groups, $F(1,171) = 0.23$.

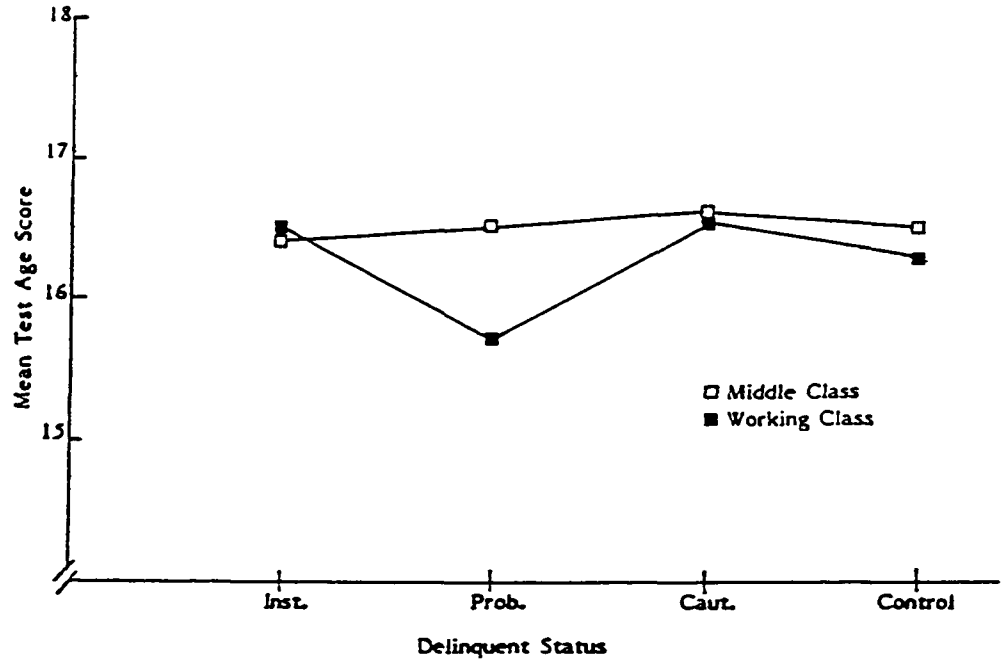
For performance scored with a time bonus, neither planned comparisons one, two, nor three proved significant. Delinquents did not differ significantly from controls on this variable, $F(1,171) = 0.02$; the institutional and probation groups together did not differ significantly from the cautioned groups, $F(1,171) = 1.25$, nor did the institutional and probation groups perform significantly differently, $F(1,171) = 1.13$.

In sum, the prediction that the Picture Arrangement test would not discriminate between groups on the basis of either class or delinquent status was supported. This was so irrespective of whether or not the speed of completion of the task was taken into account.

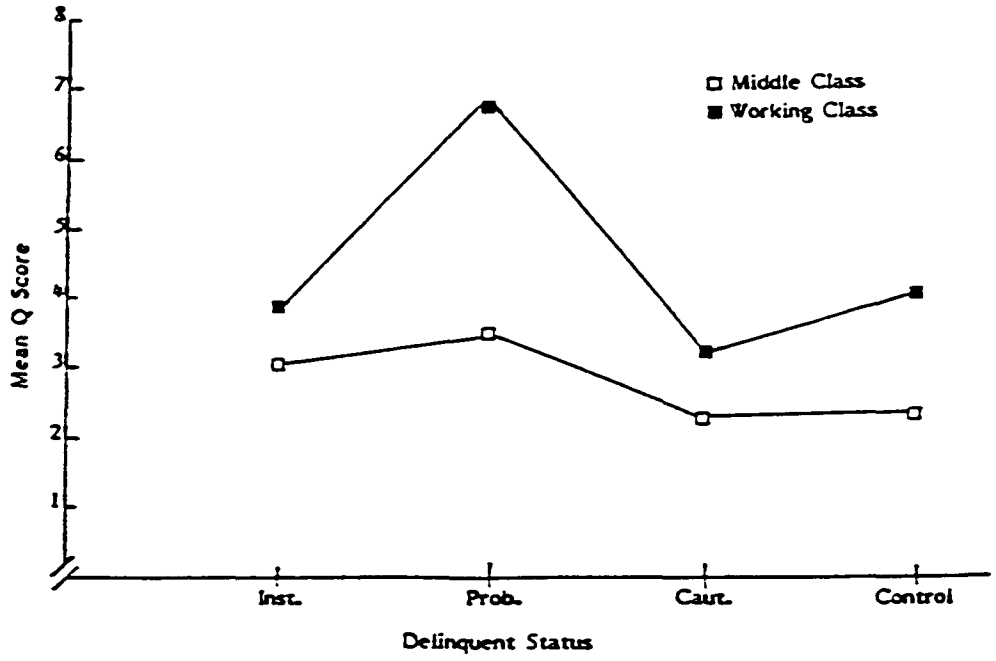
3.3.8 *The Porteus Maze Test*

Adjusted group mean scores for the two Porteus Maze variables are depicted in Figure 11. With respect to test age score, the analysis showed that, as anticipated, the main effect for social class was not significant, $F(1,171) = 2.17$. However, there was an unexpected significant interaction between social class and delinquent status, $F(3,171) = 3.61^{**}$.

Because of this significant interaction, orthogonal, planned comparisons were made separately for middle-class and for working-class groups, to establish



(a). Porteus Maze Test Age Score



(b). Porteus Maze Q Score

Fig.11. Mean Scores with Intelligence Covaried for the Control Group and Delinquent Groups by Social Class for Porteus Maze Variables, Test Age Score and Q Score.

whether significant differences existed between delinquent-status groups. The expectation was that no such difference would be found. None of the three comparisons made between the middle-class groups was significant, whether the comparison was between delinquents and controls, $F(1,171) = 0.04$, between institutional and probation groups together compared with those cautioned, $F(1,171) = 0.43$, or between institutional and probation groups, $F(1,171) = 0.19$.

For working-class groups, there was no significant difference found on test age score betwen delinquents and controls, $F(1,171) = 0.05$, nor between institutional and probation groups combined compared with the cautioned group, $F(1,171) = 3.71$. However, there was an anomalous finding of the working-class probation group scoring significantly lower than the working-class institutional group for this variable, $F(1,171) = 13.24^{**}$. It seems that the significant interaction resulted largely from this effect. Comment on this finding is best related to one which follows shortly, resulting from the comparison between institutional and probation groups on Q score.

The group data from the second Porteus Maze Test measure, Q score, the number of qualitative errors in performance, can be seen in Figure 11. Contrary to expectation, the middle-class groups made significantly fewer qualitative errors on the test than did the working-class groups, $F(1,171) = 7.37^{**}$. The interaction between social class and delinquent status was not significant, $F(3,171) = 1.79$.

Planned comparisons calculated for Q score resulted, as expected, in no significant difference being found between delinquents and controls, $F(1,171) =$

1.51, nor between institutional plus probation groups compared with the cautioned groups, $F(1,171) = 6.77$. However, the probation groups were found to make more qualitative errors than the institutional groups, $F(1,171) = 8.04^{**}$. This latter finding was not expected. Indeed, in the absence of there being also a significant difference between delinquents and controls on either of the Porteus Maze variables, it would be difficult to interpret the two anomalous findings related to the comparisons of institutional and probation groups, more especially when the probation groups fared worse. One explanation might be that somehow an atypical probation group had been selected. However, the following issues need also to be considered: 1) Both the probation and the institutional subjects had been chosen on a first come, first selected basis once they had fitted the basic criteria; 2) findings from other tests did not show this pattern of differences between the institutional and probation groups; and 3) the findings pertained only to the working-class probation group compared with the working-class institutional group for test age score, but to the middle-class and working-class groups combined for probation compared with institutional group findings for Q score. Consequently, the notion of an atypical selection of the probation group seems an inadequate explanation. These particular results defy ready interpretation.

Covariance of the analysis did cause some changes to occur in the results from the Porteus Maze Test from those found when uncovaried data were used in the analysis (cf. Brown, 1989, Appendix I) but not with respect to the most important aspects under scrutiny: There was no change in results concerning class main effects nor in the results of comparisons of the performance of delinquents and controls. The

change in results related to the comparison of institutional and probation groups combined compared with the cautioned groups. Uncovaried planned comparison number two of the Porteus Maze test age score, calculated for social-class groups separately, resulted in the working-class institutional plus probation groups achieving a significantly lower test age score from that of the cautioned group. With intelligence compensated for, the significant difference was no longer in evidence. Similarly, uncovaried planned comparison number two of Q score, which was a comparison of middle-class plus working-class groups, resulted in the cautioned group evidencing significantly fewer qualitative errors than the institutional and probation groups combined. This significant effect disappeared, also, with intelligence covaried. These changes in results when covaried data were used are not surprising, in that the working-class groups had been found initially to be significantly less intelligent than the middle-class groups, and the cautioned groups more intelligent than the institutional plus probation groups.

From the results of performance on Porteus Maze, what can be said is that, in terms of the major planning variable of this test, test age score, no significant difference was found on the basis of social class. For the variable thought to be related more to temperament or style than planning, Q score, there was an unexpected significant difference found between working-class and middle-class groups. As anticipated, however, neither variable significantly discriminated delinquents in general from controls.

Viewing together the results of the two nonverbal planful tests, Picture

Arrangement and the Porteus Maze Test, it seems that, as expected, both social classes were, overall, able to negotiate them similarly, although the less effective manner in which working-class compared with middle-class groups set about implementing the maze task (Q score, Porteus Maze) as distinct from planning it (test age score, Porteus Maze) would need to be discussed. On the other hand, also as expected, on neither test did delinquents have more difficulty than controls. Also, since there was no significant difference between delinquents and controls on these tests, it seemed unnecessary to make a further comparison of these groups on the basis of the other dimension on which the two tests were varied, the interpersonal/noninterpersonal dimension.

It remains now to detail the results of the final two tests in the design, Means - Ends Problem Solving and the Survival Tasks, which were both planful and verbal expressive but varied on the interpersonal/noninterpersonal dimension. For both those tests, it was anticipated that there would be no grounds to expect differences in performance on the basis of social class but that, because of the verbal, planful nature of the tasks, the delinquent groups would score significantly less well on productive measures and more highly on non-productive measures on these tests than would controls. Also, a comparison of the performance on both tests should then reveal better performance by delinquents as compared with controls on the noninterpersonal test (Survival Tasks) than on the interpersonal test (Means - Ends Problem Solving).

3.3.9 *Means - Ends Problem Solving*

The analysis of data from the productive and the non-productive variables of the Means-Ends procedure, the group mean scores from which are depicted in Figures 12 and 13 repectively, resulted largely as had been expected for social class: As detailed in Table 8, there was, in general, no significant difference between the middle class and the working class in the efficacy of their solutions to interpersonal problems. In the generation of means to problem solution and the ability to elaborate on those means, and the number of obstacles foreseen and the elaboration on those obstacles, the working-class groups showed equal facility with the middle-class groups. Similarly, the two social classes did not vary significantly in the frequency with which they gave irrelevant means, or no means, or magical means.

There were, nevertheless, two exceptions to this general pattern. In the first instance, no response was significantly more prevalent among the working class than the middle class. It would be questionable to give emphasis to this result, however, since extremely small numbers were involved in the scores (cf. Brown, 1989, Appendix F). The second, unanticipated finding of a significant difference between the classes on introspection (the working class less often mentioning thinking before action) was problematic for facets of the theory of delinquency proposed. As will be discussed in the following chapter, the finding could be indicative of an incipient difficulty in interpersonal problem solution for the working class in comparison with the middle class, not tapped by the nature of the Means-Ends procedure.

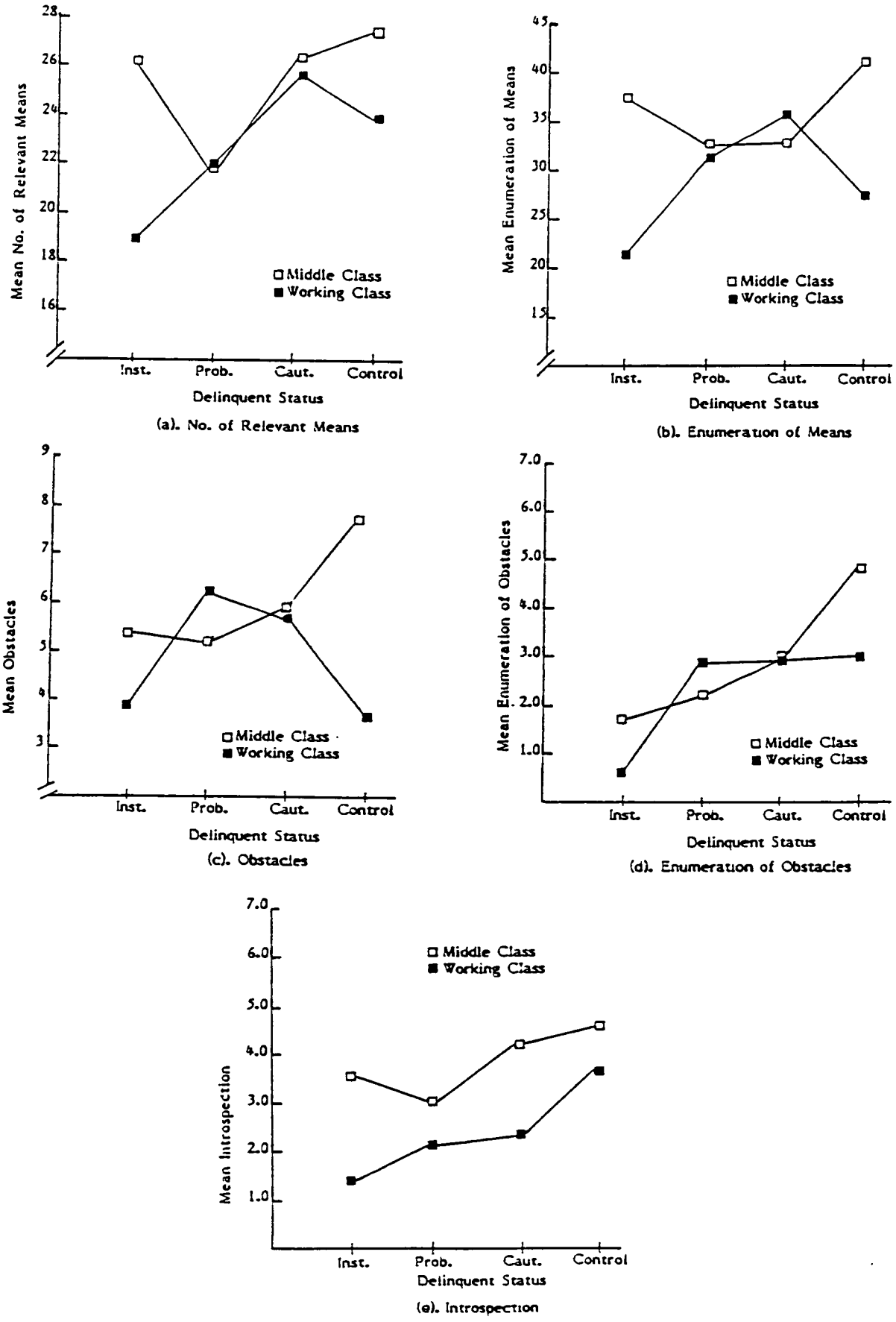


Fig. 12. Mean Scores with Intelligence Covaried for the Control Group and Delinquent Groups by Social Class for the Productive Variables of Means-Ends Problem Solving.

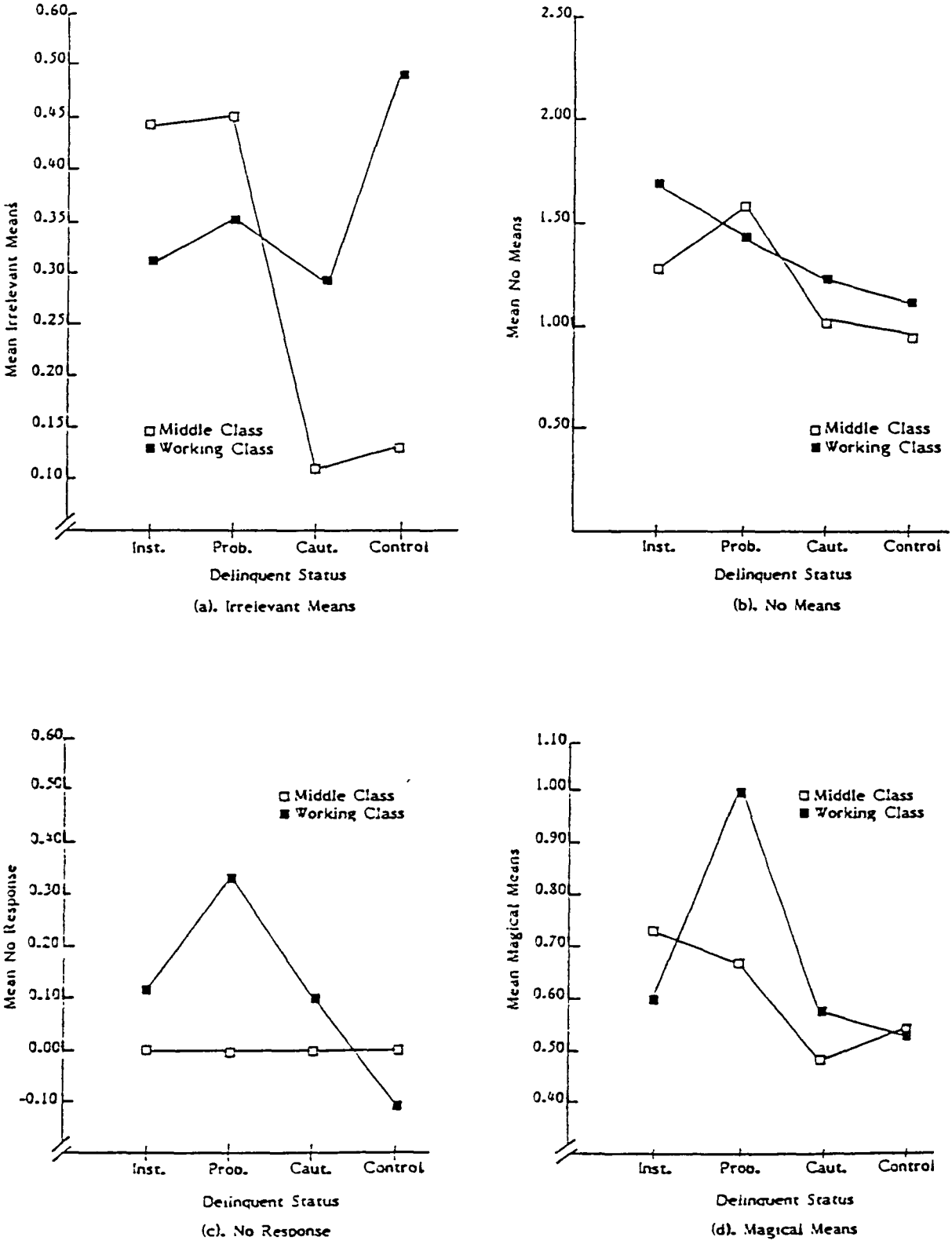


Fig.13. Mean Scores with Intelligence Covaried for the Control Group and Delinquent Groups by Social Class for the Non - Productive Variables of Means-Ends Problem Solving.

Table 8

Means-Ends Problem Solving: Results of Analysis of Covariance for Social Class, Class by Delinquent Status Interaction, and Planned Comparisons for Delinquent Status (with Raven's IQ as the Covariate).

Variable	Class F(1,171)	Delinquent Status F(1,171)		Interaction F(3,171)
Number of Relevant Means	3.51	Comparison 1 Comparison 2 Comparison 3	2.53 4.72 0.24	1.79
Enumeration of Means	3.36	Comparison 1 Comparison 2 Comparison 3	0.24 0.65 0.18	2.39
Obstacles	1.32	Comparison 1 Comparison 2 Comparison 3	0.06 0.24 0.90	2.21
Enumeration of Obstacles	0.28	Comparison 1 Comparison 2 Comparison 3	6.24 1.90 3.19	1.02
Introspection	15.10**	Comparison 1 Comparison 2 Comparison 3	13.18** 2.65 0.00	0.89
Irrelevant Means	0.91	Comparison 1 Comparison 2 Comparison 3	0.02 2.09 0.06	1.82

cont...

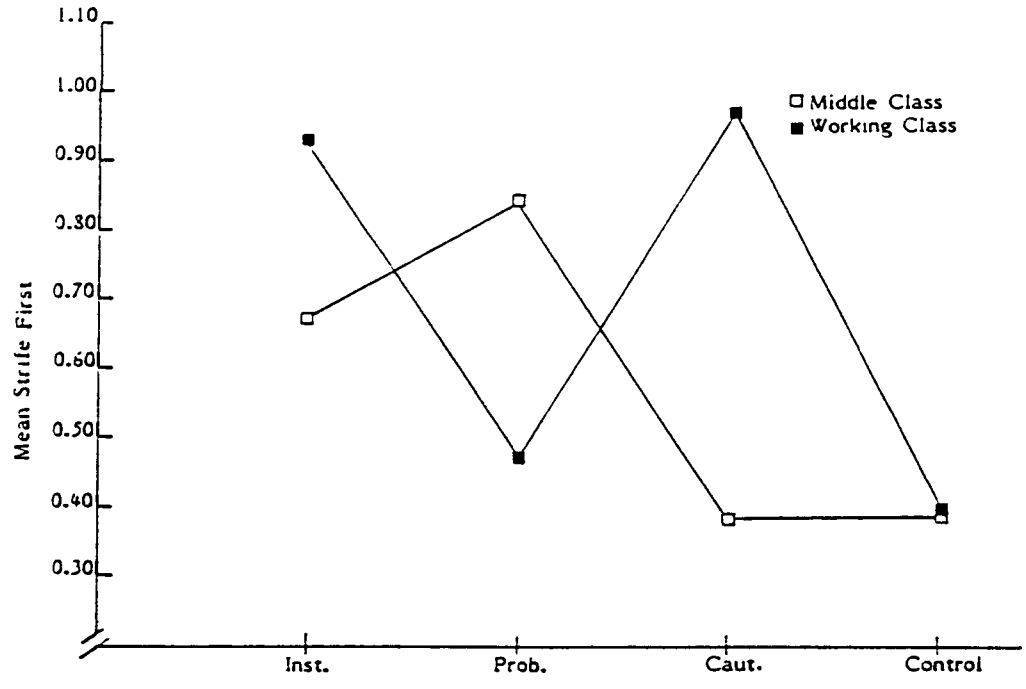
Variable	Class F(1,171)	Delinquent Status F(1,171)	Interaction F(3,171)
No Means	0.64	Comparison 1 3.20 Comparison 2 2.22 Comparison 3 0.00	0.68
No Response	9.41**	Comparison 1 4.94 Comparison 2 1.00 Comparison 3 3.04	2.01
Magical Means	0.21	Comparison 1 1.44 Comparison 2 1.64 Comparison 3 0.59	0.83
Strife First	0.29	<u>Middle Class</u> Comparison 1 2.08 Comparison 2 3.04 Comparison 3 0.68 <u>Working Class</u> Comparison 1 4.33 Comparison 2 1.28 Comparison 3 4.03	2.74*
Strife Last	2.23	Comparison 1 0.75 Comparison 2 0.13 Comparison 3 0.56	0.35

On the remaining two variables scored from the Means-Ends Problem-Solving procedure, strife first and strife last, variables included to gain an index of cognitive impulsiveness, no significant difference between middle-class and working-class groups had been anticipated. The findings were as expected, neither

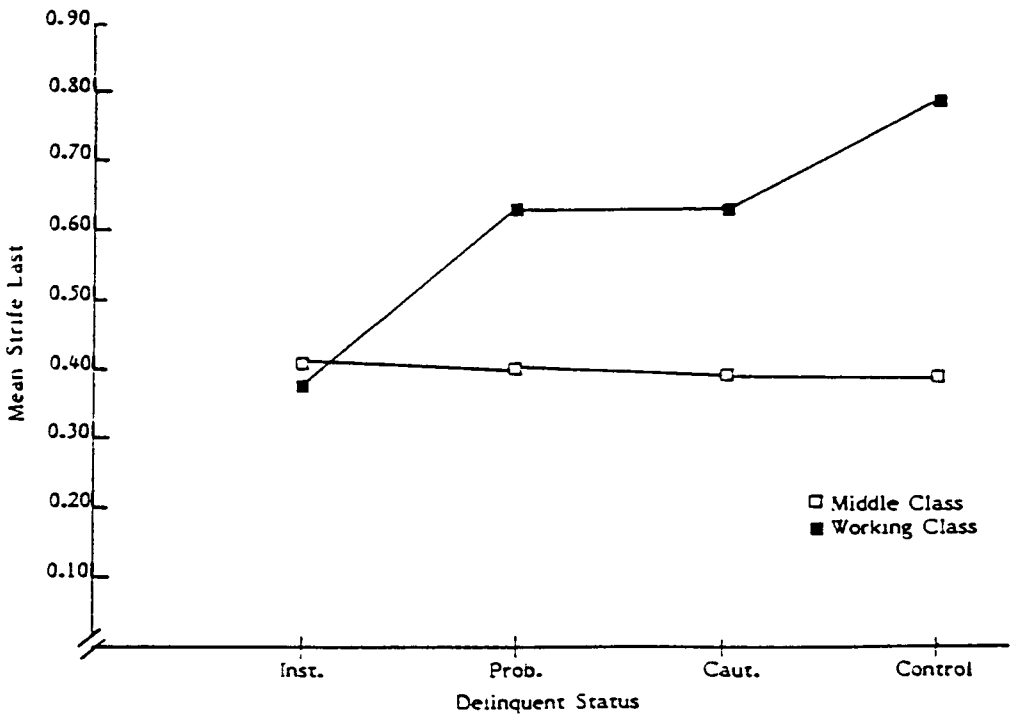
variable discriminating between the social-class groups. Figure 14 depicts those results.

It is noteworthy with respect to social-class groups that the covariance of the analysis did have an effect on the outcome of results for the important Means-Ends variable of number of relevant means, and also for enumeration of means. When uncovaried data were used in the analysis (cf. Brown, 1989, Appendix F), the middle class was able to devise significantly more means to reaching a goal in an interpersonal situation, and to elaborate on these, than was the working class. However, statistical compensation for intelligence obviated those significant differences.

It was not expected that groups within middle class and working class would necessarily vary significantly in performance on the Means-Ends procedure as a function of delinquent status, and that generally proved to be so. There was no significant interaction between class and delinquent status on any of the productive or non-productive variables. However, for the variable, strife first, an interaction between social class and delinquent status was found that was significant at the .05 level established for interactions. (It is noteworthy that none of the comparisons for strife first subsequently calculated separately for working-class and middle-class delinquent-status groups proved significant. Presumably the .01 criterion applied to comparisons, as compared with the .05 criterion applied exclusively to interactions - cf. section 3.1 - could account for those findings.)



(a). Strife First



(b). Strife Last

Fig. 14. Mean Scores with Intelligence Covaried for the Control Group and Delinquent Groups by Social Class for Means-Ends Problem-Solving Variables, Strife First and Strife Last.

With respect to differences between groups relative to delinquent status, it was expected that the planning to solution of interpersonal problems would be less comprehensive on the part of delinquents as compared with controls, and, indeed, that this might well be reflected across the various groups as a function of severity of delinquent status. Similarly, it was anticipated that cognitive impulsiveness would be more in evidence for delinquent groups in comparison with controls and would also relate to the severity of delinquent status. In general, this was not found. On the non-productive variables and all but one of the productive variables of Means-Ends Problem Solving (cf. Figures 12 and 13 and Table 8) there were no statistically significant differences between delinquents and controls, nor significant differences between delinquent groups compared. Such were the findings also for the variables that were to provide an index of cognitive impulsiveness - for strife first, as already detailed, and for strife last.

Of particular note was the fact that delinquent groups did not show statistically significant evidence of poorer efficacy in interpersonal planning as measured by the important Means-Ends category, number of relevant means. That finding and the findings of no significant difference related to delinquent status for irrelevant means, no means, no response, enumeration of means, obstacles, and magical means fail also to support the notion of a general relationship between delinquency and Means-Ends Problem Solving. Be that as it may, the fact that, as hypothesized, the second important category scored from this test - introspection - occurred significantly less often in the responses of delinquent groups than for nondelinquents suggests that some problem in the planning process could nevertheless exist for delinquents.

Covariance led to few differences in results of delinquent-status comparisons for the Means-Ends variables, from what was found when the analysis was uncovaried. (For uncovaried results, see Brown, 1989, Appendix F.) Uncovaried analysis did produce a significant difference between delinquents and controls in enumeration of obstacles, the controls scoring higher, but this dissipated once statistical compensation was made for intelligence. Also, the category, strife first, previously mentioned in this section, which needs to be detailed in conjunction with the second category of aggressive story content, strife last, evidenced significantly different results according to whether intelligence was statistically compensated for. It is interesting that resorting to strife last, finally resorting to an aggressive option in stories, showed no significant relationship to delinquent status whether uncovaried or covaried analyses were used. This was not the case for strife first, resorting to aggression from the outset. Strife first did discriminate between delinquents and controls, in interaction with class, when the analysis did not control for intelligence. With intelligence covaried, the significant difference between working-class delinquents and nondelinquents, the delinquents more frequently scoring on this category, disappeared. From such results, one is led to conclude that quick aggression as a means of solution to interpersonal problems seems at least in part to be related to intelligence, but not primarily to a delinquency process, and only indirectly to social class.

In summary, Means-Ends Problem Solving was, in general, as ably coped with by working-class as by middle-class groups and by delinquents as by nondelinquents, this latter finding being contrary to expectation. An important exception to this pattern was that, in relation to their comparison groups, the

working class and the delinquents evidenced significantly fewer introspections in the process of solving interpersonal problems.

3.3.10 *Survival Tasks*

Adjusted group mean scores for this test are depicted in Figures 15 and 16. When analysis of covariance was applied to these data it was found, as detailed in Table 9, that three of the productive variables of the Survival Tasks, those to do with the number of means devised and their elaboration, and the foreseeing of obstacles to a goal, did occur significantly more often among middle-class than working-class groups. A further significant class main effect found, for no response, would seem to be of limited import because of the extremely small number of scores involved (see Brown, 1989, Appendix G). On the basis of these results, the hypothesis that no difference would be found between social-class groups on this test cannot be accepted. Given this conclusion, it is noteworthy that the further important variable scored from the Survival Tasks, introspection, failed, nevertheless, to discriminate between social classes but had been a significant between-classes discriminator for Means-Ends Problem Solving.

Covariance of intelligence changed only two results related to social-class differences from this test, these results pertaining to non-productive variables of the Survival Tasks. When intelligence was compensated for, the significant social-class main effect found with analysis of variance for the variable, no means, the working class scoring higher (cf. Brown, 1989, Appendix G), disappeared. Further, while a nonsignificant main effect for social class was found through uncovaried analysis for the variable, no response, the main effect was significant, the working class scoring higher, when the influence of intelligence was controlled.

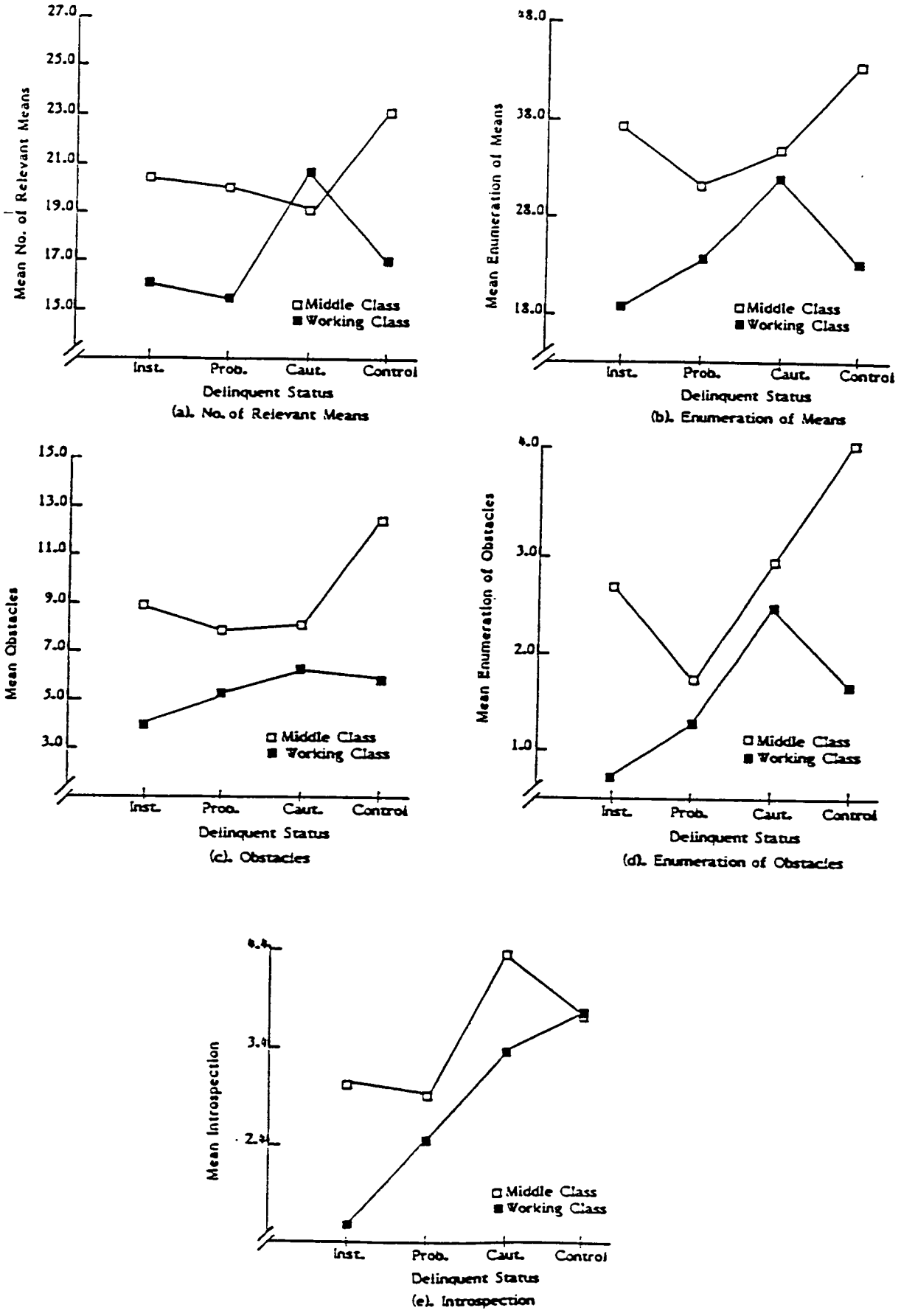


Fig.15. Mean Scores with Intelligence Covaried for the Control Group and Delinquent Groups by Social Class for Productive Variables of the Survival Tasks.

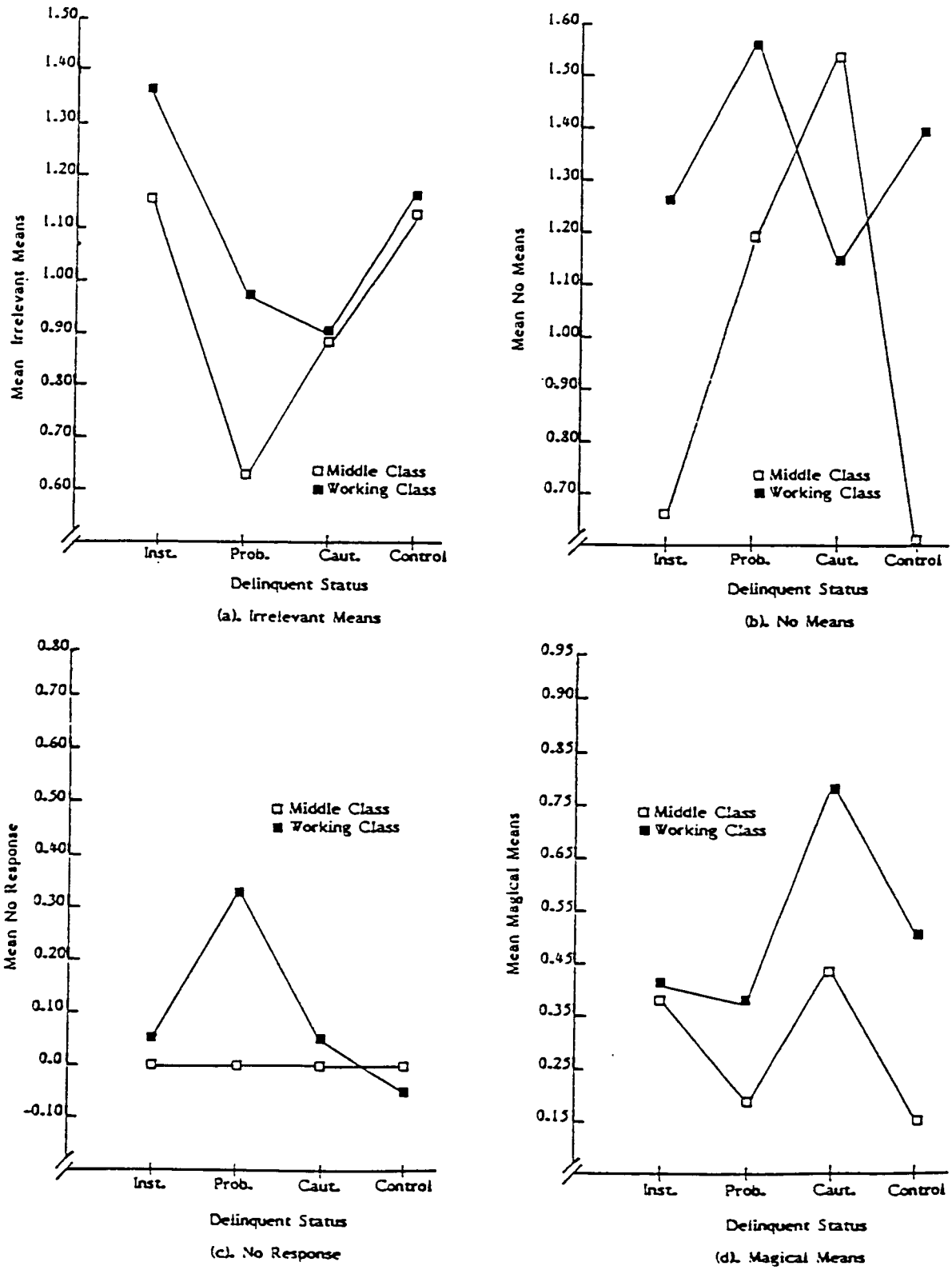


Fig. 16. Means Scores with Intelligence Covaried for the Control Group and Delinquent Groups by Social Class for the Non - Productive Variables of the Survival Tasks.

Table 9

Survival Tasks: Results of Analysis of Covariance for Social Class, Class by Delinquent Status Interaction, and Planned Comparisons for Delinquent Status (with Raven's IQ as the Covariate).

Variable	Class F(1,171)	Delinquent Status F(1,171)		Interaction F(3,171)
Number of Relevant Means	10.40**	Comparison 1 Comparison 2 Comparison 3	0.86 1.63 0.27	1.94
Enumeration of Means	13.42**	Comparison 1 Comparison 2 Comparison 3	0.92 1.46 0.15	2.12
Obstacles	7.58**	Comparison 1 Comparison 2 Comparison 3	1.93 0.16 0.00	1.34
Enumeration of Obstacles	2.85	Comparison 1 Comparison 2 Comparison 3	1.26 1.54 0.17	1.15
Introspection	1.65	Comparison 1 Comparison 2 Comparison 3	3.11 7.23** 0.51	0.42
Irrelevant Means	0.84	Comparison 1 Comparison 2 Comparison 3	1.23 0.50 4.74	0.15

cont...

Variable	Class F(1,171)	Delinquent Status F(1,171)	Interaction F(3,171)
No Means	5.29	Comparison 1 1.72 Comparison 2 0.58 Comparison 3 3.46	2.02
Magical Means	2.05	Comparison 1 0.97 Comparison 2 3.39 Comparison 3 0.96	0.22
No Response	7.60**	Middle Class Comparison 1 0.00 Comparison 2 0.00 Comparison 3 0.00 Working Class Comparison 1 0.94 Comparison 2 1.37 Comparison 3 5.95	3.24*

Although, as expected, there was in general no significant interaction found between social-class and delinquent status, the interaction result for the variable, no response, did exceed the $p < .05$ criterion level. However, again it is pointed out that the number of scores involved in this result was extremely small (see Brown, 1989, Appendix G). Despite the interaction found, no social-class delinquent-status group performed significantly differently for the no response variable. Indeed, it can be seen further from the results of planned comparisons in Table 9 that, as anticipated, there was no significant difference between delinquents and controls on any variable

scored from the Survival Tasks. Also, with only one exception, there were no significant differences found between delinquent groups compared, for the Survival Tasks variables. The exception, that cautioned groups showed more introspection than institutional and probation groups combined, was anomalous considering that delinquents and controls had not significantly differed, although it will be argued in a further section that the cautioned youths were more intellectually able than other delinquent groups.

Comparing the results of the covaried analysis with those when data were uncovaried (cf. Brown, 1989, Appendix G), it was found that covariance had caused only one material change: A significant difference found between working-class institutional and probation groups in terms of how frequently they gave no response, the working-class probation group scoring higher, was no longer in evidence when intelligence was compensated for.

To summarize the major findings from the Survival Tasks: Firstly, contrary to expectation, important differences between social classes were found, the middle class being able to think of more means, to elaborate on them, and foresee obstacles in the solution of noninterpersonal coping problems than did the working class. Secondly, there was no difference found between delinquents and controls on any of the Survival Tasks variables. This latter finding was also not anticipated.

A comparison of the results of Means-Ends Problem Solving and the Survival Tasks is interesting. It had been expected that the findings from those tests

which were both planful and verbal expressive would have been in the same direction, being influenced by delinquent status but not social class. Instead, the results were not uniform. The working-class groups were significantly less able to manage the Survival Tasks than were the middle-class groups but there were no comparable class findings for Means-Ends Problem Solving, middle class and working class responding, similarly, overall. There were two exceptions to this result pertaining to class on Means-Ends Problem Solving, the first being a significant finding, based on small numbers, of more frequent failure by the working-class groups to make any response. The second was the provocative finding that the working class did not significantly demonstrate as much evidence of thinking before embarking on a solution (introspection).

The fact that the two tests were also varied importantly on the interpersonal/ noninterpersonal dimension was especially relevant in the comparison of the performance on these tests by delinquents and controls, since it was hypothesized that delinquents would not perform as well on the interpersonal Means-Ends Problem-Solving test as on the noninterpersonal Survival Tasks. There was generally no evidence to sustain this hypothesis. Indeed, the performance of delinquents on both tests was similar. On only one variable of Means-Ends Problem Solving, introspection, did delinquents perform significantly differently from controls. Nevertheless, it will be argued that this finding could be one of considerable conceptual importance.

3.4 *Summary of Major Test Findings*

The major test findings have been summarized in Table 10.

Table 10

Summary of Major Test Findings

✓ Results as hypothesized

x Anticipated results not found

o Results in addition to those hypothesized

Test	Categories Scored from Test	Delinquents Significantly Less Able than Controls	Working Class Significantly Less Able than Middle Class	Significant Interaction Resulting In Working-Class Delinquents Performing Least Ably
Quick Test	Raw Score	✓	✓	x
Test 8	+ Score	x		
Test 7	+ Score	x		
People Photos	Sentences per Passage	x	✓	x
	Words per Sentence	x	x	x
	Sum of Subordinate Clauses	x	✓	x
	Loban Index	x	✓	x
Non-People Photos	Sentences per Passage	x	✓	x
	Words per Sentence	x	✓	x
	Sum of Subordinate Clauses	x	✓	x
	Loban Index	x	✓	x

cont.

Test	Categories Scored from Test	Delinquents Significantly Less Able than Controls	Working Class Significantly Less Able than Middle Class	Significant Interaction Resulting In Working-Class Delinquents Performing Least Ably
Attitude to Language Test	Importance of Language	✓		
	Liking of Language	✓		
	Importance of Movement Activities	x		
	Liking of Movement Activities	✓		
Picture Arrangement	Raw Score			
	Score with Time Bonus			
Porteus Maze	Test Age Score			
	Q Score		o	
Means-Ends Problem Solving	Number of Relevant Means	x		
	Enumeration of Means	x		
	Obstacles	x		
	Enumeration of Obstacles	x		
	Introspection	✓	o	
	Irrelevant Means	x		
	No Means	x		

Test	Categories Scored from Test	Delinquents Significantly Less Able than Controls	Working Class Significantly Less Able than Middle Class	Significant Interaction Resulting In Working-Class Delinquents Performing Least Ably
Means-Ends Problem Solving cont.	No Response	x	o	
	Magical Means	x		
	Strife First	x		
	Strife Last			
Survival Tasks	Number of Relevant Means	x	o	
	Enumeration of Means	x	o	
	Obstacles	x	o	
	Enumeration of Obstacles	x		
	Introspection	x		
	Irrelevant Means	x		
	No Means	x		
	No Response	x	o	
	Magical Means	x		

CHAPTER FOUR

Discussion

The findings of the study, to be appraised in this chapter, suggest that much of the language presentation of adjudicated young offenders is related to their social class rather than to their delinquency. Of social-class groups and delinquent-status groups, it was the social class groups which showed a broader spectrum of language differences, the working class (which presents most frequently to the court/policing agent systems) demonstrating significantly less language competence than the middle class. That problems coping through language were, however, also found for delinquents in comparison with nondelinquents irrespective of their social class, with the profile of language-coping problems being different from that found for social-class groups, seems theoretically important. As for being able to find evidence of a process through which poorer language coping might be related to delinquency, explicit evidence was lacking. One possible means was nevertheless suggested from the results: A finding of more limited introspection where interpersonal cognitive problem solving was required provided a hint about the mechanism through which a relatively thoughtless kind of delinquency could potentially occur.

What follows is firstly a synopsis, then a discussion of the findings where planful/nonplanful, verbal expressive/nonverbal expressive, and interpersonal/ noninterpersonal dimensions were systematically varied, and an examination of the implications of the findings for the theory advanced in Chapter One.

4.1 *Synopsis of Findings*

Once statistical compensation was made for differences between groups in intelligence, delinquents were found to be as able as nondelinquents to plan and execute solutions to largely nonverbal problems, whether they were person related or non-person related (Picture Arrangement and Porteus Maze Test results). While these results obtained for delinquents and controls regardless of social-class membership, there was, additionally, a social-class difference, the working class performing less well than the middle class on the Porteus Maze Test.

With respect to the solution of verbally related problems which involved planning and oral verbal explication, delinquents performed, in general, no less well than nondelinquents, whether these tasks were interpersonal or noninterpersonal (Means-Ends Problem Solving and the Survival Tasks). However, when the task was people related, delinquent groups did not demonstrate introspection in the course of planning to the same extent as did nondelinquents. The social classes responded differently to these tests, in that the middle class was able to deal more comprehensively with the noninterpersonal Survival Tasks problems than was the working class. On the interpersonal, Means-Ends Problem-Solving tasks, however, neither class gave evidence of more comprehensive solutions, although it was noteworthy that the middle-class groups showed more introspection than did the working-class groups.

On nonplanful tasks that require verbal expression, be the stimulus people-related or non-people related (People Photos and Non-People Photos Tests), delinquents performed verbally as well as nondelinquents: No difference was found between delinquent and nondelinquent groups in verbal productiveness - numbers of

sentences and words produced - when descriptions were required of them, or in the complexity of their productions. In contrast to there being a lack of significant difference between delinquents and controls, social-class differences in verbal ability on these tasks were clear, middle-class groups scoring higher on language productivity and complexity indices than working-class groups.

When tasks were nonplanful, and required no verbal response, but the attending to and comprehension of language, delinquents showed no more difficulty than nondelinquents in the processing of wordy instructions whether these were impersonal or interpersonal in content, or in the execution of those instructions (Tests 7 and 8, Processing of Instructions, Impersonal and Interpersonal). Similarly, there were no significant social-class differences in performance.

In addition to those findings related to the verbal/planful/interpersonal dimensions and their opposites that were systematically varied, were those concerning the working vocabulary of delinquents compared with nondelinquents (Quick Test), and their motivation in respect of the use of language as opposed to action (Attitude to Language Test). It was found that delinquents, irrespective of class, considered language less important, and liked the use of language less than did nondelinquents. On the other hand, their liking of movement activities exceeded that of nondelinquents. Their attribution of importance to movement activities was, however, no more than for nondelinquents. It is interesting that the motivation towards the use of language or action was not found to be related to social-class membership.

Finally, the working vocabulary of delinquents based on performance on the

Quick Test was clearly more impoverished than that of nondelinquents, irrespective of social class. Also, middle-class groups showed superior vocabulary knowledge in comparison with working-class groups.

4.2 *Language Coping and Delinquency*

4.2.1 *Language Deficit and Its Implications for the Delinquency Process*

The model of delinquent functioning put forward in section 1.10 gave no primacy to deficits in the language knowledge and in the communicative competence of delinquents as compared with nondelinquents, in the actual process of delinquency. Rather, emphasis was given to the motivation to use language and the ultimate effect of this on verbal planning, and hence on control. Nevertheless, it was thought that by-products of this process would be a reduction in language efficacy and expressiveness for delinquents compared with nondelinquents, irrespective of their social class, although working-class delinquents would be expected to perform least ably, lower social-class resources compounding the language problem. This reduced language performance by delinquents was expected to be especially evident when they were dealing with stressful, that is, people-related material.

Certainly, the findings of the research are chequered in respect of those "by-products", and are not as demonstrative of difficulties in language expression for delinquents as had been expected. This is especially noteworthy since further findings do show delinquents to have had, at the same time, poorer motivation to deal with language material. These findings also contrast with those for social class, which was the source of considerable difference in language expressiveness. Contrary to expectation, delinquents were as able as nondelinquents to process instructions given them, although it must also be said that the instructions were profuse rather than

qualitatively complex: The instructions (Tests 7 and 8, Processing of Instructions, Impersonal and Interpersonal) were padded with everyday words, so would questionably have taxed vocabulary knowledge. Thus, the test served perhaps more the purpose of establishing whether many words would repel delinquents from paying attention rather than testing their understanding of a range of words.

Also contrary to what was anticipated, in terms of the sheer amount of speech used in descriptions, and the complexity of their descriptions, delinquents showed similar performance to nondelinquents, irrespective of whether what they were describing was people related or not people related. Since there seem to be no evident grounds to assume that the indices of amount and complexity used were not reasonable indicators, the matter of why more limitation for delinquents than for controls did not result from using these indices needs to be further addressed. Perhaps descriptions of pictures do not approach the reality of how delinquents express themselves in in vivo situations with people. Indeed, related to this, perhaps the interpersonal dimensions tapped variously in this research would not really represent stress situations. Undoubtedly, it would be helpful to know whether delinquents produce less speech in true-life interpersonal situations where they do not feel compelled by a formal task to keep talking. However, since it is being suggested within the theory presented, that the dislike of the use of language would have become entrenched through habit and would accordingly also have generalized, it might be assumed that some reserve in the use of words might show even when interpersonal situations are represented in a picture description task. Within the restrictions of the measurements used in this research, there was, however, no significant difference from controls in the amount of their speech and in the clause

complexity of their statements. The delinquents could perform normally. That language becomes less a preferred mode of coping when times become more difficult than the test situation could effect, or even merely when there is no test situation setting up a pressure to perform verbally, would need to be shown from future research.

A further possible explanation of these results must be examined. It could be that the motivational problem in approaching language would not have the effect at all of reducing the ability of delinquents to express themselves, or to use verbal thought, appropriately; indeed, that the theory is without real grounds. This is a possibility. On the other hand, one would expect that if an entrenched motivational problem towards language use did exist, that it would have demonstrable effects on verbal performance. A further explanation could be that, because the problem for delinquents is not necessarily one of lack of cultural opportunity, when they do respond verbally they do so with the same verbal complexity in terms of sentence construction, and with the same volubility as their social class models. Less often tuning in to or involving themselves in language situations may nevertheless affect the *quality* of the *vocabulary* they use, normal growth in vocabulary perhaps needing consistency in word practice.

This latter argument is bolstered by a strong finding that the working vocabulary of delinquents as compared with controls was qualitatively more limited. It follows that they would not be able to speak as well or compete verbally with the same efficacy as nondelinquents. A number of issues arise here. Firstly, the test used which produced this finding, the Quick Test, seems to have been an optimum choice. It had been used because of the apprehensiveness expressed by some pilot-study subjects

about written work perhaps being required of them. To respond to this test, subjects needed merely to point to pictures. Accordingly, they responded well to it and the results are probably reliable. Secondly, the words used as stimuli for the picture choices were graded in difficulty, so the score from the test subsumed a qualitative dimension. Thirdly, the authors of this test point to its correlation with intelligence. However, even when statistical compensation was made for at least nonverbal intelligence in this research, the test discriminated significantly between delinquents and nondelinquents, a discrimination which might then be assumed to be in large part verbally related.

The question arises also, whether this finding merely reflects a formal educational difference between delinquent and nondelinquent groups. Certainly the difference between controls and the delinquent groups in numbers still attending school at the time of testing, when there was no significant difference in terms of age between delinquents and controls, attests to a longer time at school by controls and, thus, longer potential exposure to school learning. This could have contributed in some measure to the finding of a lower vocabulary level for delinquents. However, there is reason to question that this would have been at all a sufficient explanation of the more limited vocabulary of delinquents. Once intelligence was covaried in the analysis of results, there was no significant difference between the social-class rating of delinquents and controls. Thus, to accept an explanation of difference in vocabulary largely because of time at school would be to negate the considerable influence of the home and the broader environment of social-class in the process of education.

4.2.2 *Opportunity Versus Poor Motivation to Acquire Language*

The middle-class delinquent groups present the best perspective from which to argue an idea of opportunity versus poor motivation to acquire language. It might reasonably be assumed that in middle-class homes there is an emphasis given to language skill and encouragement to acquire it. Indeed, for the middle-class research sample this would no doubt be so, considering that it was defined, in part, in terms of parents' education. This premium on language learning would, in turn, affect vocabulary knowledge. It should also be said that numbers of middle-class delinquents in the sample had already had the benefit of time at a substantial private school before leaving formal education.

The matter seems not so much one of opportunity for exposure to expanded vocabulary as of resistance to acquiring it. In this vein it might also be mentioned that a resistance to education, for whatever reason, seems to be reflected in the fact that, in many cases middle-class (and working-class) delinquent youths in the sample had been expelled from school, and there was a tendency found for the middle-class delinquent youths to progress from private schools into the state school system, or sometimes vice versa, then to expulsion. Along the way, it seems that language suffered. A motivational hypothesis as a primary explanation of this difference in vocabulary level seems a more reasonable alternative to one of opportunity for educational exposure.

Further weight is given to this interpretation by the significant findings concerning less positive attitudes to language issues by young offenders as compared with controls, which has by implication been deemed motivational. Delinquent groups endorsed language-related items on the Attitude to Languge Test as being important

significantly less often, and rated the matter of these items as being less liked, than did nondelinquents. Since the actual language items, hidden among others to disguise the purpose of the test, involved language related to self and others - listening to, reading, expressing in a number of contexts - it would seem at face value that they do tap an attitude to language, and this attitude differentiates the two groups. It could be argued that to extrapolate from observations of language being less important and less liked to ideas of motivation - not wanting to use or deal with language - is contentious. It is asserted, however, that motivational difficulty would in fact be a plausible sequel to such attitudes.

What is also interesting and consistent with the model proposed is that, while language was less popular with delinquents, movement activities were more popular with them than with controls. (Also, with intelligence statistically compensated for, delinquents could show an awareness of movement activities being not necessarily important while nevertheless liking them more than did nondelinquents.) Although only four items were used to together constitute the attitude to movement measure, those items involved exercise, doing, fixing, and the connotation of movement through the word "motorbikes", so would seem to have face validity. These findings, in conjunction with those related to attitude to language, lead to a further possible conclusion: If language was less liked and movement was more liked by delinquents, then movement, action, or doing was preferred to language activities. This is, of course, an important proposition of the model of delinquency outlined.

Before extending the scope of this discussion to whether there was evidence that any reduction in the capacity to plan verbally related material at least co-existed

with a more negative appraisal of language activities, it is time to consider other implications of a more limited vocabulary, and some likely concomitants of a preference for action rather than words by delinquent groups.

4.2.3 *Further Implications of a Limited Vocabulary Together with a Preference for Action*

It seems reasonable to suggest that once a comparatively negative motivation towards language and a preference for action are set in motion, there would not only be a reduction in vocabulary growth, but a progression in this reduction over time. That would be accompanied by a growing discomfort with the world of words, in comparison with the experience of nondelinquents whose greater liking of language would make them more open to its acquisition and use. A loss of personal influence could result: Power in the general community would seem to reside in being able to verbalize skilfully, and, as Edelman (1977) pointed out, for power to be maintained, competence may need to be developed in higher order, esoteric systems of "in" words, like those used by professionals. Delinquents as a group would thus be excluded from power by their lack of comparative facility with language.

A forerunner of exclusion from power would be first experienced at school. Since school revolves primarily around words, those whose preferred mode of self-expression is not through language, and whose quality of language is poorer than that of others, could well, in time, fail to compete and feel alienated from those who can. Pickar's (1986) review of research on psychosocial aspects of learning disabilities, which suggested that self-esteem, locus of control, and difficulties in interpersonal relationships accrue to such disabilities, might well be logically extrapolated to motivationally based language problems. Although not designated

specific learning disabilities, these could nevertheless influence school adjustment and achievement.

That school achievement is an important variable in delinquency is well documented. The research of Polk, Frease, and Richmond (1974) into social class, school experience, and delinquency indicated that delinquency was related to academic performance, regardless of social class. Similarly, Polk and Halferty (1966) concluded from their study that school failure produced delinquency among white-and blue-collar boys alike. Linden (1978) concluded also that school adjustment was related to delinquency irrespective of social class. More recently, Liska and Reed (1985), looking at the sequence of the effects of delinquency, school attachment, and parental attachment, reported that parental attachment affected delinquency, that delinquency affected school attachment, and that school attachment affected parental attachment.

There was no direct focus given to school adjustment in the present research because of its theorized more indirect relationship to delinquency, and also for the pragmatic reason that four hours time had already being asked of subjects in the researching of other issues. However, anecdotal information gained confirmed that many delinquent youths expressed dissatisfaction with school, indicating that either truancy, expulsion, numerous changes of school, or leaving before a school year was completed had occurred. Indeed, to have finished a last year at school seemed to be a rarity in the delinquent groups, and the expression of liking of school by delinquent youths who still attended was infrequent. One can say, then, that there was at least a tendency found for dissatisfaction with school on the part of delinquent groups. This would seem to link with more limited verbal facility.

At a theoretical level, however, in contrast with social control theorists such as Hirschi (1969), who have in recent times done most research into school attachment as an insulator against delinquency, it is not postulated that school problems would necessarily predate delinquency. On the contrary, it is suggested that verbal problems underlie both the delinquency and the school problems, but that school problems would then exacerbate delinquency through increasing stress.

With respect to the findings in this research of a significantly lower vocabulary level for delinquents than nondelinquents, together with less liking of language, a recent finding by Spellacy and Brown (1984) is interesting. They reported that among the variables that made a significant contribution to the prediction of recidivism from among delinquent groups were spelling and word fluency. Spellacy and Brown used the Spreen and Benton (1977) Word Fluency test from the Neurosensory Center Comprehensive Examination for Aphasia as an index of word fluency: This test calls on vocabulary knowledge, subjects having to name as many words as they can which begin with a particular letter, for example, b - bin, bottle, ban - and so forth, within a span of time. The Spellacy and Brown study gives support to a proposition that verbal problems may also be related to severity of delinquency, a notion similarly bolstered by the findings from the present research that the institutional groups performed significantly worse than probationers on working vocabulary. (That there was also a significant difference between institutional and probation groups on social-class rating - even after the influence of intelligence on social class was attenuated by covariance - makes such a conclusion from this study more tenuous, however.)

At this point it becomes appropriate to consider whether, if the vocabulary

level of delinquents regardless of their social class was more limited, and they showed what could be construed as evidence of less motivation to deal with language than nondelinquents, they did, at the same time, show any evidence of reduced ability to cope with interpersonal verbal planning?

4.2.4 *The Performance of Delinquents on Interpersonal Verbal Planning*

The following propositions from the theory outlined in section 1.10 are reiterated to lend meaning to the importance of the foregoing question: If when a small child is learning to talk, language and anxiety become paired because of a stressful, interpersonal environment, the child may learn a tendency to a "no thought" strategy in interpersonal, words situations, and, indeed, the childhood propensity for language to precipitate action rather than verbal thought may be prolonged. Action rather than language may become consolidated as a preferred mode of coping. In time, overt verbal skills might suffer, the extent of this depending also on the strength of environmental pressure to acquire language skill. This could have a variety of implications for the person's well-being and acceptance in the environment. Also, through not learning to stop first and cue him or herself in verbal thought, habits of poor planfulness may become entrenched and lead to inadequate, abbreviated problem solving in - now generalized - interpersonal situations which have triggered the cognitive flight. Gradually, habit could dictate that the person learns to react immediately when stressed, and should stresses increase, for example, during adolescence, the sheer number of unplanned or poorly planned responses that could eventuate would make the likelihood of illegal activities grow. When they did occur, literally almost thoughtlessly, they would be reinforced largely by the responses from the environment - from home, school authorities and peers - and would continue until stresses ameliorate.

The importance of interpersonal cognitive problem solving in the actual delinquency process can be seen from the above framework, and a poorer performance by delinquents than by nondelinquents would be necessary if the theory was not ultimately to founder. However, the question is raised whether the measures of interpersonal cognitive problem solving used in the research, and indeed that are available to psychology, would ever be able to offer unequivocal evidence. The problem is this : The design to test for efficacy in interpersonal cognitive problem solving seemed appropriate, contrasting planful/verbal/ people-related dimensions and their opposites, to establish whether planfulness would be manifestly more difficult for delinquents than controls with people-related material where verbal thought was required. However, because outcome was measured by overt response, it did not directly measure what actually occurred in thought during planning. It raises the classic psychological dilemma of the relationship between verbal thought and language and how one obtains adequate evidence of the one through the other.

To ensure at least a basis for an assumption of some correspondence between covert and overt language, contrasting tasks were selected which, on face value, seemed to vary on the amount of verbal thought required, whether it was little verbal thought or much verbal thought, but, of course, the matter of how much verbal thought was used in the solution of nonverbal tasks (and nonverbal thought in verbal tasks) was not able to be controlled. Also, the ultimate matter of whether a dearth in verbal problem solving by delinquents relative to controls would mean that they had not thought, or merely that they had not expressed the thoughts they did have towards problem solution, is insoluble. For this population in particular, who had also demonstrated that they do not like language to the same extent as nondelinquents and

are not as proficient in its use, an insufficiency in problem-solving skills measured by verbal response of any kind may merely reflect their motivation towards the overt use of language. This constitutes a substantial reservation about the interpretation of findings, a reservation that must obtain generally for current researching of interpersonal cognitive problem solving in the field, especially with delinquent youth. Because these considerations make *the testing* of a link between attitude to language and problem solving tenuous, a balance needs now to be given to allow some credence to relevant results in this research.

On the positive side, the design, which enables a stepwise elimination of possibilities, allows for some confidence in the results. From this design, it was reasoned that the interpersonal cognitive problem-solving task should show up most difference between delinquents and nondelinquents. Such a finding would stand in relief from the findings from the three other tests which also required verbal response and where the thought/expression of thought dilemma was therefore a constant. Were the hypothesized findings to have occurred, the least that could be said would be that verbally responding to interpersonal planning tasks gives delinquents more difficulty than verbally responding to noninterpersonal planning tasks or to person-related and non-person related tasks which are not planful. This would, of course, at least give weight to a notion that the interpersonal planning as well as the verbal dimensions are of concern for this population. In view of the design, the discussion of findings in this section will proceed through the step-wise possibilities, culminating in the findings concerning interpersonal cognitive problem solving.

That delinquents were as able as nondelinquents to plan and execute solutions

to largely nonverbal problems was as hypothesized, but some findings were contrary to what might have been expected from psychological literature, particularly with respect to the Q score of the Porteus Maze. Numbers of researchers (Wright, 1944, Porteus 1945, 1965; Docter and Winder, 1954, Fooks and Thomas, 1957) have reported differences between delinquents and nondelinquents on Q score, centering attention on this variable deemed to tap temperament, rather than on test age score which was considered more of a planning measure.

Porteus (1965) saw delinquents as being able to negotiate the planning component but not to execute the task with the careful precision that would obviate minor errors. There seems, however, to be a certain arbitrariness in calling one facet of execution of a task (the finding of the way through the mazes) an index of planning, and other facets of execution (the cutting of corners, etc.) indices of temperament, since planning presumably underlies the manner in which one negotiates a course through a maze as well as the direction one takes to get through it. No doubt the argument reduces to more or less planning for these variables. Taking both Porteus Maze measures on face value as indices of planning, with Q score being, additionally, perhaps related to temperament, it is evident that what is involved in successfully completing mazes does not significantly discriminate delinquents from nondelinquents on either score of efficacy.

That a raw score and not a weighted score was used for Q score in this research could conceivably have influenced findings so that they differed from those of other researchers. However, this seems unlikely, given that two previous researchers have compared unweighted scores and weighted scores and found them not to differ substantially: Docter and Winder concluded from their research that

"Porteus' weighting scheme can be rationalized and used but does not seem to add to the efficiency of the test" (1954, p.13) and Fooks and Thomas, using Docter and Winder's unweighted system, concluded that "at least with regard to distinguishing between delinquents and non-delinquents, the unweighted Q score is not only easier to determine but is nearly as efficient as the Porteus system" (1957, p.352).

An alternative explanation of the finding that the Q score of delinquents was, as hypothesized, not significantly higher than that of nondelinquents seems more reasonable. It may be attributable to two features of the design, firstly, to the selection of middle-class and working-class groups on the basis of comprehensive criteria of family occupation and education, and secondly, to the range of delinquent groups chosen, from those institutionalized to those merely cautioned. As will be expanded further, the use of such a range of groups eliminates the possibility of a focus on extremes, which too often happens in delinquency research. While one averages out delinquent status by such a design and uses strict indices of social class, it is likely that the Q score effect, significantly higher scores by delinquents than nondelinquents, would generally not be found.

A finding also conflicting with other theoretical positions is the hypothesized no difference result between delinquents and nondelinquents on Picture Arrangement variables. This was expected in this research because, although people related, Picture Arrangement is not largely a verbally loaded test. The background to a contrary prediction from that of other orientations is best explained from a cursory look at the focus of developmental psychology on delinquency, especially in recent times. There has been a progression in the psychological literature from Gough's (1948) suggestion that psychopathy is attributable to limitations in role taking,

through to a broadening of the base of questions concerning deficient development in self and in social cognition, and in the moral development of delinquents. Lately also, there has been an emphasis on developmental delay. (Spivack, Platt, and Shure, 1976; Jurkovic and Prentice, 1977; Selman, Jaquette, and Lavin, 1977; Kohlberg, 1978; Shure and Spivack, 1980; Hains and Miller, 1980; Bernstein, 1981; Hains and Ryan, 1983; Gaffney, 1984; Hayes and Walker, 1986 and Short, 1986).

Measures of what is deficient or delayed in the process of social cognition have included Chandler's (1973 a, 1973 b) Index of Social Egocentrism, used to measure perspective-taking skills. This measure is based on the Wechsler Adult Intelligent Scale, Picture Arrangement, a test that is reported by Wechsler (1958) not only to be loaded on a nonverbal organization factor but possibly to measure social awareness. Using this measure, but requiring responses that were different from those traditionally asked of subjects doing Picture Arrangement, researchers did produce significant differences between groups of delinquents (Short, 1986) and between normal and deviant adolescents (Chandler, 1973 , b). However, it is suggested that the very nature of the difference in responses required of subjects produced those results which contrast with the findings of this research. Rather than merely to reorder cards presented in a disarranged fashion, so that they made sense, Chandler's and Short's subjects were *to verbalize*, to describe the sequence, and, in a further section of the task, to interpret the story from the viewpoint of a person shown only a part of the sequence of cards. It is contended here that their findings may not be related to difficulty in perspective taking, so much as to a reaction to verbalizing.

Certainly, the results of the present research indicate no difficulty for

delinquents in the solution of largely nonverbal planning problems, even if people related. Where the tests were, by contrast, largely nonplanful, and required no verbal responses of the subjects, again, no significant differences eventuated. In these latter instances, however, differences had been expected between delinquents and nondelinquents because the barrage of words in instructions were hypothesized to cause a "no thought" (or "less thought") strategy to occur for delinquents (Tests 7 and 8, Processing of Instructions, Impersonal and Interpersonal). The results suggest that delinquents can attend to and comprehend wordy, verbal instructions as well as do nondelinquents, can evidently retain the verbal input in memory, and can direct their actions through that verbal memory.

This is a problematic finding for the theory presented, the implication being that wordiness does not impel delinquents to a "less thought" strategy. Two issues need to be considered in relation to these findings. Firstly, the impression was gained during testing that the subjects generally took Tests 7 and 8 as a personal challenge, took pride in remembering what they were asked to do, and attention to instructions seemed acute. Under those circumstances, where an element of pleasing or impressing the experimenter seemed to be present, a competing response to a normal reticence in the face of wordy instructions could well have been occurring, and the basic ability to pay attention rather than a habit of non-attention gave rise to the results found. There is another interpretation also possible, however: that a "less thought" strategy was not inoperative but, where language needs merely to be processed and recalled and no extensive verbal cognitive manipulation through planning is involved, the "less thought" strategy may have no registerable effect on output. For the effect to become manifest, more complicated cognitive, verbal activity might be needed. In this event, also, whether the material to be dealt with were person related or non-person related

would have little additional impact, where, already, no impact was evident. The second interpretation is opted for since it allows a consistency with interpretations to follow.

Although these findings can, then, with some expansion of the theory, be incorporated within it, the findings do present some difficulties for researchers who espouse ideas that delinquents show attention deficit. An example of research into, among other things, attention deficit, is that by Voorhees (1981). Voorhees, quoting Duane (1977, source unspecified) thus, "Those classified as delinquents generally display impaired learning abilities as well as a number of deviant behaviour patterns. These patterns consist of diminished attention, distractiveness, low frustration tolerance and impulsiveness" (Voorhees, 1981, p.57), predicated research into a queried neurological basis to delinquency on those descriptions of delinquent functioning. From his research, he concluded that "those tasks requiring sustained levels of concentration and attention (visual, mnestic, autoverbal, arithmetic, speech) provided the greatest difficulty for the delinquent group" (Voorhees, 1981, p.64).

Such results contrast with those of the present study, although the stimuli used were somewhat different. It is suggested that findings from studies like those of Voorhees (1981) should perhaps not be generalized beyond context. Once again, young offenders from a juvenile facility (28 subjects) had been used as delinquent subjects and so cannot be considered as generally representative of adjudicated groups. If the institutional groups in the present study had been found to perform significantly least well in comparison with other groups on Tests 7 and 8 (Processing of Instructions, Impersonal and Interpersonal), and this did not occur, this would have given added

impetus to an argument that Voorhees' findings may have been due largely to his sampling (which in turn could relate to social deprivation variables). On the other hand, Voorhees did use different measures in his research. It does seem reasonable to contend that unrepresentative sampling, together with specific effects related to measures used, could account for the attention deficit effects reported in the literature as being characteristic of delinquents, rather than this needing to be seen as part of any delinquent process or state.

It is concluded from the present research that there has been no evidence of attention deficit on the part of young offenders. Moreover, when tasks are verbally loaded in terms of instructions, but require limited planfulness, they are negotiated as well by delinquents as nondelinquents, irrespective of whether their content is person or not person related. Does then, requiring subjects to give verbal responses rather than merely following verbal instructions to largely nonplanful tasks (descriptions of people and non-people photographs) lead to a significant difference in performance between delinquents and controls? It had been expected that, because of the requirement of speech from the subjects, a no - or "less thought" strategy would operate to depress the performance of delinquents. Again, this did not occur, and again, such a finding presents difficulty for the theory.

Perhaps his own overt speech in a social situation does not cause a "no thought" (or "less thought") strategy to occur in the young offender, after all. On the other hand, it is possible that the nature of the task has created a situation that is different from that which normally occurs in real life, where a reticence in the use of speech might be found. In this contrived, research situation a conflicting pressure has been set up where there is a strong social expectation on the person to perform.

Since learning to survive in the environment may insure that words will occur where *required,* the young offender performs, although the inferior quality of his performance, found in this research from the vocabulary test, indicates the likelihood of a more limited use of language normally. Perhaps also, mere verbal description, a labelling of what is seen and thought, may still not involve a sufficiently complex process for a "less thought" strategy to be able to cause any evident disorganization or insufficiency in the performance of delinquents. For this to occur, the complexity of verbal planning may be needed.

Also, in relation to the verbal expressive but nonplanful (People and Non-People Photos) tests, the lack of significant difference between delinquents and controls, whether the test material was people related or not, seems explainable in terms of the subjects being already in the interpersonal situation of using speech to someone as they performed both tasks. The content of what was being spoken about, particularly when it related to inanimate photographs, may have been of little additional moment.

To this point, results according to the design varying verbal, interpersonal, and planful dimensions and their opposites suggest that the performance of delinquents seems not to materially differ from that of nondelinquents, regardless of person or not person relatedness of material, 1) where a task has an apparently negligible verbal component but is planful, and 2) when a task has a verbal component of wordy instructions, or requires a response of verbal descriptions, but at the same time is largely nonplanful. The remaining possibilities, then, relative to the design, reduce to whether there is a significant difference between delinquents and nondelinquents in a words situation where planning is required, the expectation being that in such

situations (i.e. for both Means-Ends Problem Solving and the Survival Tasks) the delinquent groups would do less well than the nondelinquents. Also, when problems to be solved were related to people, the delinquent groups would do even less well than when they were not people related. Because there was a difference found between Means-Ends Problem Solving and the Survival Tasks results, and because conceptual problems accrue to the Survival Tasks findings, these two tests are to be considered separately, as well as conjointly.

On no Survival Tasks variable did delinquents perform significantly worse than nondelinquents. Certainly such a finding negates the underlying model proposed. At the least it challenges the notion of an inhibitive process being set in motion in an interpersonal, words situation - the adoption of a "no thought" strategy. After all, to explain the previous two unexpected findings, it was reasoned that situations that required either wordy instructions or verbal responses failed to distinguish delinquents from controls, because the verbal components of those tasks - the processing and memory of language on the one hand, and descriptive expression on the other - were insufficiently complex to cause disorganization.

When results of difference between delinquent and controls have not been found in a situation of more complexity - verbal planning - the alternative to abandonment of the theory would require an extension of what has been postulated. Perhaps this could be achieved as follows: If, as has been reasoned previously, thought processes are interfered with when 1) threat in the situation is high (cf. section 1.10), and 2) complex verbal processing is involved, it could be that the failure of delinquents to show inferior performance on Survival Tasks was not related to the complexity component but to insufficient threat. Perhaps the *content* of the task

needs, in addition, to be interpersonal, for the threat in the (interpersonal) situation to be high enough to cause an effect. The postulate of language relatedness leading to disorganization through a "no thought" strategy would need, then, to be expanded to suggest that a "no thought" regime is set in motion in an interpersonal, words situation where the young offender is required to think through interpersonal coping strategies. (Probably this relates to most real-life interpersonal situations, since presumably few such situations would have sufficient interpersonal structure to require no planning.) If that is so, then, there needs to be evidence of less planning efficacy for delinquents than nondelinquents on Means-Ends Problem Solving. In fact the evidence for this is extremely limited in terms of quantity of findings yet potentially strong in conceptual significance in the one instance where it was found.

Findings from both tests suggested that delinquents can conceptualize a plan of how to deal with problems in living put to them, whether they are interpersonal or noninterpersonal. As reported, they can think of as many steps to problem solutions, elaborate on these means, foresee obstacles and expand on these, and engage no more frequently in non-productive steps to solutions like relying on magical means than do nondelinquents.

However, one important difference was found that distinguished the performance of delinquents on Means-Ends Problem Solving as compared with Survival Tasks: They reported introspecting significantly less often in the course of their stories of managing interpersonal problems than did controls. This is the possible key to how a "no thought" strategy is implemented, how dislike of language situations may affect interpersonal planning: In an interpersonal language situation, where planning of interpersonal material is required, there may be a failure to stop

and think before a planning sequence is set in motion.

Before proceeding to the implications of this finding for the efficacy of planning, it is necessary to examine how introspection scores were derived. Introspection was scored when there was mention of thinking, pondering, ruminating, "having ideas", or making a decision before the person in story implemented action, whether it was at the beginning of the story or as he proceeded to change tack in light of an obstacle encountered. It was a statement about having thought, from which inference of thought was to be made. Now, since there was no difference between delinquents and nondelinquents in statements about action, one might deduce that a difference between them on statement of thought would either reflect 1) habit formed of more or less thought before proceeding, or 2) a reticence to talk in terms of thinking.

Since findings of difference for delinquents from controls on introspection obtained for both social classes, an explanation of 2) in terms of class affiliation and customary social-class practice would not be tenable. Indeed, unless related back to 1) it would be difficult to comprehend; presumably one talks more readily about something one feels comfortable with and discomfort would seem, in turn, to imply less habit through usage. It is concluded, then, that this measure may reasonably be thought to infer a habit of more or less thought before action.

There are at once two implications from the findings from this measure. As suggested, it provides the possible link between dislike of use of language and interpersonal cognitive planning. At the same time, it becomes, indirectly, a pointer to potential problems in implementing *appropriate* plans. There seems no doubt on

the basis of the interpersonal cognitive problem-solving test used in this study that the young offenders could plan relevant steps to the solution of a problem - they knew how to sequence their thoughts logically to reach a solution. However, whether the plan formulated by them was the best one for the circumstance is quite another question and one not measured in this research. It is suggested that efficacy of planning might well suffer if lack of introspection occurs initially, because alternative formulations, and where alternatives would lead, would then be less likely to be considered. To be sure, in the Means-Ends Problem-Solving test the variable, obstacles, did imply that some consideration of the efficacy of the plan took place. However, it was still a questioning within the same plan as action proceeded, rather than a broader consideration of alternatives at its inception.

Perhaps rather than a test like Means-Ends Problem Solving which gives emphasis to the quantity of relevant means to interpersonal problems, one that looked at their cogency would have been more appropriately used. The Awareness of Consequences Test, another of the cognitive interpersonal problem-solving measures of Platt and Spivack (1977), may have led to more explicit results concerning the efficacy of planning by delinquents, since it was devised to test the ability to weigh the pros and cons of conflicting choices of action, to consider their consequences before the individual decides what to do. On the other hand, were the Awareness of Consequences Test to show up performance deficits for delinquents compared with controls, one would further need to question whether the efficacy of plans of action chosen might be limited, not only because different options are insufficiently considered for consequence, but because too few options for action are initially generated.

To research the possibility that too few alternatives may be being initially

generated, the Optional Thinking Test (Alternative Thinking) of Platt and Spivack (1977) could be useful. At least with preschoolers Spivack et al. (1976) found a consistent relationship between alternative thinking ability and behavioural adjustment. It is suggested, then, that future research with delinquents should target both the number of solutions of different content generated to an interpersonal problem, as well as the comparative qualitative efficacy of the subsequent response choice. This might elucidate what less frequent introspection by delinquents than controls could mean in the process of interpersonal problem solution.

To this point, it has been demonstrated that delinquents as a group may have no difficulty with tasks that are nonverbal and planful, nor verbal and nonplanful, regardless of whether or not they are related to people, in content. Similarly, there seems to be no evident problem when tasks are verbal and planful. However, when this latter condition (verbal and planful) is, additionally, made people related, there is indication of at least potential difficulty for delinquents in problem solving since they show less evidence of introspection in that circumstance. Thus, this three-fold nexus of conditions may need to obtain for difficulty in problem solution to become evident for delinquents, these conditions perhaps also being integral to the process of delinquency. This could result because firstly, the task of planning is cognitively complex. Secondly, since they call up anxiety, people relatedness and language may lead at once to a "no thought" strategy, where speech becomes an impellant and introspection may then not occur; possibilities for action and their consequences thereby remain imperfectly appraised.

4.2.4.1 *A Comparison of Findings With Other Research*

While studies exclusively focused on social skills, like that of Schumaker,

Hazel, Sherman, and Sheldon (1982), cause one to question whether situations that are problematic for delinquents are in fact more often social than nonsocial, the present study shows the complexity of the question. (The situation might well need, for example, to be complex and verbal as well as social.) There is, however, consensus that interpersonal cognitive problem solving seems more difficult for delinquents than for nondelinquents. (Little and Kendall, 1979; Schumaker et al., 1982; Gaffney, 1984; Hains, 1984). Nevertheless, there is limited evidence or conceptual agreement on how this might occur. The different theoretical orientations researched variously, often using delinquent groups of very different consistency, tend to obscure communalities in findings that could relate to process. As Blasi pointed out, however, "cognitive-developmental theory ... offers only the vaguest guidelines for approaching the relations of cognition and action, simply hypothesizing a positive correlation between the two." (Blasi, 1980, p.1).

In what follows, some relevant research findings from different orientations, which could be reinterpreted in the light of the theory propounded in this research, will be briefly mentioned to lend added meaning to the findings from this study. The research orientations range from those involving a relatively atheoretical search for problem-solving skills deficits in delinquents for the purpose of establishing strategies for change, to information processing of various levels of intricacy. More than one group of researchers has, for example, sought to demonstrate the existence of cognitive dimensions related to social functioning.

The emphasis by the Hahneman group, Spivack, Platt, and Shure (1976), on interpersonal cognitive problem solving being most likely a discrete dimension of thinking - a point of view which receives at least some support from the findings

from this study - is reflected also in Flavell's (1974) processing model of social cognition. The model contains four components: Existence - the structure of knowledge a person has built up about social cognitive events; Need - awareness that social cognitive operations are required in the circumstance; Inference - the selection of a strategy; and Application - behaviour as a consequence of inferences made.

An investigation by Hains and Ryan (1983) sought, among other things, to gain evidence about where, within Flavell's framework, the social cognitions of delinquents might show deficit. Their findings showed a comparable knowledge about strategies to solve social problems on the part of delinquents and nondelinquents (findings which appear consistent with the results of the Means-Ends Problem-Solving test in this research) and Hains and Ryan suggested that future researchers should not presume on a structural deficit or a problem of Existence. However, they also concluded that "while solving social problems, delinquents may not be as exhaustive as nondelinquents in their consideration of certain problem-solving dimensions, possibly due to problems of Need (for the older delinquents) and Inference (for younger delinquents). If that is the case, then in actual social situations their behaviour could be adversely affected" (Hains and Ryan, 1983, p.1543).

Certainly an extension of research seems necessary of the Flavell and the Spivack, Platt, and Shure dimensions of social cognitive problem solving, for more specific answers about where deficits could lie. The present research suggests that delinquents may well know the logical steps to problem solution but the concomitant finding of poorer introspection on their part implies that they could experience difficulty with Inference, within Flavell's model. If findings of difficulty for

delinquents in selecting and appraising the outcome of options were to be subsequently found, the theory outlined in the present research would suggest that such findings would then need to be related back to a problem on which these may be contingent - the failure to stop first to think.

The findings of Gaffney (1984) reinforce the query raised in the present study about whether less frequent introspection in the course of interpersonal problem solving by delinquents may lead to less effective means to problem solution being used. Gaffney gave a multiple choice test to delinquent and nondelinquent girls, the subjects having to select from five responses the one most similar to what they would say or do to solve a social problem situation. She found a significant difference between delinquents and controls and, indeed, the more the involvement in delinquency the less effectively a subject was found to perform on the social skills measure. The difficulty that the delinquent group had in a choice situation fits the suggestion that while a "no thought" strategy at the inception of a verbal, interpersonal problem may cause no evident difficulty for following the steps to solution of the only course of action countenanced, it could pose difficulty for the appropriate choice of action from among others. Gaffney's subjects may well have been used to not appraising a range of options before action.

Slightly more specificity is given to the underlying mechanism of how poor social responding could occur where notions of self-control are introduced. Little and Kendall (1979), in their review of self-control issues, suggested that the governing of one's behaviour requires both the cognitive skills to generate and evaluate alternatives, these comprising the legislative function, as well as the capacity to "inhibit acting on the discarded alternatives and to engage in the selected option"

(Little and Kendall, 1979, p.100), this being deemed the executive function. The theory of delinquency on which the present research is based would suggest a temporal reordering of the legislative and executive functions, since, while it is possible that delinquents lack the cognitive skills to generate and evaluate alternatives for behaving, it is suggested that problems in the capacity to inhibit action predate issues of selecting alternatives. That is, a central issue for delinquents may not be one of inhibiting competing response alternatives perused, but of ensuring they will reach a stage of considering alternatives rather than acting prematurely on a first option.

In a previous section of the study (1.8), Little and Kendall's (1979) interesting observation that for many delinquents, words could serve more as an impellant than as an inhibitory function, in the Lurian sense, has already been cited. These authors failed to pursue theoretical speculation about this, but it seems compelling to suggest that the impellant function might promote the launching into a first option of thinking in verbal interpersonal problem-solving (planful) situations, rather than to allow the slight delay necessary for the consideration of multiple options. Findings researched from quite another perspective also seem provocative when related to theoretical notions and results from this study. Rosenthal and Lani (1981), reviewing studies about the information processing of delinquents, presented findings from their own research for the hypothesis that delinquents may selectively attend to different information from matched controls.

In what was perhaps a minor problem-solving task, subjects were shown slides of actors and actresses showing several different emotions, slides containing short sentences, and slides with the sentences appearing beneath the pictures. When both facial (pictures) and verbal (sentences) cues were on a slide together, the

messages were inconsistent in affect. Each subject rated the slides in five conditions: only facial cues, only verbal cues, facial and verbal cues together, facial and verbal together with instructions to ignore the facial data, and facial and verbal together with instructions to ignore the verbal data. Subjects rated, on a seven point scale, the degree of liking of each slide. It was found that the normal adolescents were more distracted than delinquents by extraneous facial cues, while delinquents were more distracted than normals by extraneous verbal cues.

An interpretation could be made of these findings that when language instructions and also irrelevant verbal cues combine as stimuli to make a cognitive situation of, then, some complexity (having to work on ignoring language), and content is, in addition, person related, what then becomes a stress situation, because of earlier conditioning in relation to language, causes an avoidance-of-thought response. This is an impellant to action, and, in this circumstance, delinquents become cognitively disorganized. In this framework, Rosenthal and Lani's (1981) findings would also imply that people-relatedness is less potent in causing disorganization than is language complexity.

With respect to Luria's notion of language being an impellant to action (cf. section 1.7), what is being suggested here is a muted such effect: A total regression to earlier childhood mechanisms, where speech could impel behaviour but not regulate it through the meaning of the words said, is not being suggested. If this were so, no doubt the delinquents in Rosenthal and Lani's (1981) research would have responded poorly in both situations where they were instructed to ignore either verbal or facial cues. Rather, it is suggested that the vicissitudes of life have caused learning to intrude on the process and, while they are not unable to respond to meaning, for delinquents

meaning and the sound of speech momentarily compete. This becomes the "no thought" strategy, the lack of initial introspection. When the task at hand is additionally sufficiently complex, disorganization results and less efficacious output becomes noticeable.

Before leaving this section where the implication of language coping for the delinquency process has been highlighted, some findings from Means-Ends Problem Solving and from the Survival Tasks, related to the content of responses - a dimension only briefly touched upon in this research - remain to be discussed. The variables to be discussed were included in the research for interest sake rather than because of material relationship to the theory. They serve now to illustrate the place of the content of thought in the theory propounded in this research.

Two variables pertaining to aggression, strife first and strife last, were scored from the content of responses to the interpersonal problem-solving (Means-Ends) task. It had been reasoned that if strife was chosen as the first means towards the solution of a problem, rather than as a last means, this could be an indication of impulsiveness. There was a significant difference found for delinquents as compared with nondelinquents to resort more often to strife first in their stories, but this difference was related to class (working class) in interaction with intelligence, since, once intelligence was covaried, the significant difference disappeared. It seems reasonable to suggest on the basis of such results that to aggress quickly as a means of solving a problem may be at least in part related to intelligence, not primarily to any delinquent process, and only indirectly to class.

A further variable, magical means, whether the subject relied on a solution

materializing as opposed to planning it, was scored from the content of responses to both the verbal problem-solving tasks (Means-Ends Problem Solving and Survival Tasks). It was reasoned that relying on happening on a solution could indicate poor motivation to plan. The measure failed to show up any difference of significance between the delinquent and control groups. These findings, while not providing evidence of impulsiveness or of poorer motivation to plan for delinquents compared with controls, pradoxically do not conflict with the theory underlying this research. Indeed, if one considers that the theory would give no importance to the content of thought, the findings are unremarkable; it is not a theory of moral reasoning, and offers no explanation of why one kind of response would be called forth as the first option of choice which is then precipitately acted upon, save perhaps that it is the most familiar or rewarded option in terms of one's life experience.

4.2.5 *Summary*

To this point in the discussion, how delinquents comprehended language and expressed themselves verbally in comparison with nondelinquents, and how they responded to a variety of tasks, varied to display their functioning when the content was verbal, planful, and also interpersonal, has been discussed. The study has been able to show that, in comparison with nondelinquents and irrespective of their class, delinquents had qualitatively poorer language and more limited motivation to deal with language material. Nevertheless, in terms of the sheer volubility and structural complexity of their speech and in their processing of what was said to them, they could function as did nondelinquents. They could generally execute planning tasks as well as nondelinquents whether those were verbal, nonverbal, interpersonal, or impersonal. However, where a task was interpersonal, verbal, and planful they showed more limited introspection, something that may affect the cogency of their solutions to

interpersonal problems, although further research would be needed to elucidate this. As for the theory proposed, it would need the reformulations forced by the results of this study to remain a viable proposition for continued research. The reformulations have been detailed.

What needs to be elucidated still in the discussion is the role of social class in the language coping of delinquents.

4.3 *Language Coping and Social Class*

The theory devised to guide the present research would give no primacy to social class in the aetiology of delinquency, except to suggest that stress factors in the early lives of those less materially advantaged may be higher: Stress and language might, thus, have greater opportunity of being paired to affect motivation to use language. Also, it was considered that social-class factors would heighten or diminish any growing difficulty with language related to poor motivation to its use. For this research, then, it seemed important to first demonstrate that, irrespective of class, certain language-coping differences would obtain as a function of delinquent status.

A further issue also required the separation of language-coping problems related to class from those related to delinquency. As was discussed in section 1.4, there is arguably a greater representation of working-class youths in official delinquency statistics. Also, there is a greater likelihood of institutionalized offenders being from the working class, for reasons ranging from a possibly higher rate of offending to lack of comparative power, including limited social presence in the face of authorities. This likelihood was well demonstrated in the course of data collection for the present study where middle-class institutionalized offenders were found to be

very rare when compared with those available from the working class. Now, since researchers not infrequently use institutionalized delinquent groups as subjects, for evident reasons of expediency, it would follow that a confounding of issues related to class and those related to delinquency process might well permeate the knowledge-base of delinquency research. Yet, remediation for adjudicated young offenders would be predicated on knowing what influences are due to social class and what to delinquent status in their coping profiles. It was precisely to delineate such differences with respect to language, as well as to show that social-class issues are not primarily related to delinquency process, that social class received the research emphasis that it did in this study.

The findings from the study have shown that there were, indeed, variables that related to delinquency, irrespective of social class and these have been discussed. With respect to those variables which discriminated between groups on the basis of social-class membership, two issues are of note. Firstly, it was always in the direction of the working class showing inferior performance. Secondly, certain of those variables additionally discriminated between groups on the basis of delinquent status, so the issue of whether the mechanisms that produce those effects for social-class and for delinquent-status groups alike have similar origins becomes of interest. In what follows, points one and two will be examined as they arise in discussion since the issues overlap.

4.3.1 *Comparative Deficits in Working-Class Performance*

A broader range of differences in overt language expression was found on the basis of social class than those already reported for delinquent status. While no significant difference was found between the social classes in receptive language (the

comprehension of lengthy instructions), both productivity (number of words and number of sentences) and complexity (number of subordinate clauses and clause complexity) of expressive language differed between classes, as did vocabulary knowledge. It is true to say, that those differences were of course differences in amount, the two classes producing the same phenomena but with the middle class producing more. Nonetheless, differences in amount would no doubt have implications for social coping, for the quality of interactions.

The findings from this study pertaining to middle-class and to working-class speech are consistent with previous findings from Australian research. It will be recalled from section 1.5 that Russell (1970) had found that productivity (words) discriminated between middle-class and working-class groups, and Russell (1970) and Poole (1973) had found that measures of subordination discriminated between middle-class and working-class groups, the middle class producing more of both these categories. Also, researchers outside of Australia showed children from lower-class backgrounds to differ significantly from middle-class peers in vocabulary size (Deutsch, Fishman, Kogan, North, and Whiteman, 1964; Lesser, Fifer, and Clark, 1965; Stodolsky, 1965). Additional descriptive data from a longitudinal study at Turner House Preschool reported by Hart (1982), are of interest. This study drew on three different settings, two which consisted of children from a black, economically impoverished community, and another from a preschool where those enrolled were chiefly children of a University staff. Findings from that study suggested that, over time, advantaged children add new words to their working vocabulary more frequently than do children reared in poverty. Thus, what has been found with respect to middle-class and working-class speech characteristics in this research is not novel.

Why these differences exist and how one might conceptualize a different pattern of differences in speech characteristics of the social classes as arising, from that found in the comparison of delinquents and nondelinquents, are more the issues to address.

4.3.2 *A Conceptualization of Deficit in Terms of Cultural Opportunity*

With respect to the question of how comparative verbal expressiveness difficulties come about for the working class, observations from research into the language characteristics of young children in poverty circumstances compared with middle-class children seem instructive. It is acknowledged that findings related to children may have quite diminished relevance when explanations are sought about adolescents. Also, the working-class groups derived for this research from an admixture of unskilled, semi-skilled and skilled worker backgrounds are groups to which the term "poverty" might ill apply. Nevertheless, they are groups less advantaged materially and in terms of parental education than the middle-class groups, and would thus be affected by different cultural opportunities. For the purpose of advancing speculation then, it seems reasonable to use certain of the findings from the literature concerning children of disadvantage as a spring-board.

Research related to the language of disadvantaged children has progressed beyond looking for differences in structure to examining interactional speech and the different uses to which language is put. For example, Tough (1982), reporting on a longitudinal study of the development of language (Tough, 1977), presented findings not only concerning linguistic structure, but those related to the purposes of language use by children of educationally advantaged and disadvantaged parents. On all measures used of complexity of linguistic structure, which included the use of

clauses, the children of educationally advantaged parents scored higher than did the children of educationally disadvantaged parents. Such findings are echoed by those of the present study. Moreover, when the purposes for which the children used language were examined, it was found that the children of the advantaged parents "more frequently used language to analyze and reflect on present and past experiences, to reason and justify, to predict and consider alternative possibilities, to talk about events in the future, to project into the lives and feelings of others, and to build up scenes, events, and stories in the imagination" (Tough, 1982, p.6).

Hart (1982), pointing to observations made in the literature that poverty children simply do not talk very much (Bereiter and Engelmann, 1966; Williams, 1970), suggested that, like Tough's data, the descriptive data from the previously mentioned Turner House Preschool research would imply that differences between poverty and advantaged children are not syntactic but pragmatic, being related to differences in amount of talking done. She observed from the Turner House Project, that the children who talked most frequently had the largest lexicons in use and used more different words and complex sentences.

From Hart's perspective, what is happening is that children who talk a lot introduce many new topics, and focus on them in a variety of ways, examining and elaborating them. On the other hand, children who do not often talk tend to talk about a limited number of topics, like things they really need or want. She concluded that "what language does for them - and thus what language is (Halliday, 1977) - may be different from what language is for a child who talks a lot. And it may be this difference that is reflected in the long-term rate of lexical growth" (Hart, 1982, p.211).

Why the children may not have formed habits of talking more is presumably a multifaceted issue, but interactive speech with early care figures, their childrearing philosophies and speech habits, and the availability of a broad range of cultural stimuli, all interacting, would seem important. The following findings from research seem relevant to these ideas: The quality of maternal communicative styles has been found from studies like that of Ninio (1980) to vary between classes. Ninio found that middle-class mothers reading to their children used more variety in labelling attributes and actions than did those from the working class, who in turn tended to teach nouns and stress comprehension in the course of reading to their children. However, it could be that qualitative differences in input are less important for language development than is more or less access to speech interactions, perhaps as a result of differences in parental responsiveness or time taken with children.

Extensive social-class differences in the responsiveness of maternal speech to the child's speech was reported by Farran (1982). Also, findings from a study by Leibowitz (1977) suggested that middle-class mothers invest more time with their children. Further, Snow, Arlman-Rupp, Hassing, Jobse, Joosten, and Vorster (1976) found that mothers reading books to children stimulated more complex speech than in a free-play situation, so perhaps the frequency with which children are read to can influence their language characteristics. The parents' ideologies could also influence how they interact in speech with their children, although Snow, Dubber, and de Blauw (1982) quite rightly suggested that poverty may prevent mothers from caring for their children as they would like, basic survival often needing to take priority over language interchanges.

To the conclusion that deprived children may talk less frequently, and have

different or fewer speech interactions with care-givers can be added the further conclusion drawn by Farran (1982) that they have more difficulty making use of verbal material when it is provided, and, from research like that of Bernstein (1961), Ralph (1965), and Robinson (1971), the conclusion that "the poverty child functions poorly on tasks that require verbal interaction" (Feagans, 1982, p.106). Perhaps underlying all of these things is a simple factor, one pointed up by Snow (1980) at the Conference on the Language of Poverty Children, that "the differences between middle-income and poverty children lie in their knowledge of the world, which is reflected in their language" (Feagans and Farran, 1982, p.242).

The picture that thus emerges of those from materially and educationally disadvantaged homes is of a more limited world of expressed ideas, places, and things, where restricted opportunity for concept and language stimulation and dialogue, and a lack of language practice prevail. Once this cycle has begun, a perpetuation perhaps then occurs through the education system. After all, as Tizard, Philps, and Plewis (1976) have found, teachers and nursery assistants spend little time talking with individual children. When they do it is likely to be with those who already have better language skills. Similarly, Wells (1985) has concluded that children have less opportunity to extend ideas through talking at school than they do at home.

The general picture outlined makes understandable what seem to be quite cohesive findings related to social class in the present study. More limited language practice and educational opportunity related to material disadvantage would appear to explain the findings concerning expressed speech. Also, unanticipated social-class differences found on two planning tasks seem to bolster the foregoing cultural, educational deficit argument. The significantly higher score for the working class on

Q score, Porteus Maze, a score of minor errors, which, in addition to planning, could denote an attitude to care taken in executing paper and pencil tasks, might well in turn relate to quality of education, to interest in such achievement.

Similarly, cultural opportunity and education could underlie the interesting findings that working-class groups could not handle well the solution of the Survival Tasks. It is suggested that since four of the eight questions of the Survival Tasks dealt with situations of surviving alone in dangerous situations, those who had been exposed to school discussion and instructions about how to cope in such circumstances would have been better able to respond on the test. Since such instruction depends on the capacity for schools to incorporate expansive school curriculae and, in general, there is more limited resource for expanded curriculae in public schools which service the less affluent, working-class youths could well have been disadvantaged on the test. Anecdotal information gained during the research supports this view: A number of middle-class young persons, in contrast with those from the working class, used the word "hypothermia" and explained its meaning, and volunteered that they had had instruction at school about how to cope in extremes of cold. Probably too, and also in contrast to those from the working class, many of the middle-class youths would have had previous experience of at least thinking on the conditions described through being on skiing trips. Also, it is pointed out that the issue does not seem one of the working class being less able to cope with solving problem tasks in general, given the overview of test results, but of being less able to solve those kinds of problems in particular. Better opportunity for instruction and for broader life experiences seem reasonable explanations of the difference between social classes found from this test.

What has emerged from this discussion of results pertaining to social class is a coherent pattern where the language (and planning) performance deficits of the working class, in comparison with the middle class, seem consistent with more limited opportunity and education. Still to be addressed is the question of how the pattern of language deficits differs essentially from that which emerged for delinquent groups.

4.4 *Comparison of the Language Profiles of Working-Class Groups and Delinquent Groups*

It will be recalled from section 4.2.2 that findings for delinquents compared with nondelinquents formed a pattern with respect to language expressiveness which was related to a motivational difficulty with language. That the working class performed less well relative to their comparison group, in terms of the amount and syntactic complexity of the language they used, and the delinquents did not, has been explained by more limited environmental opportunity for the working class to model syntactically complex and lengthy speech sequences. They have not been raised listening to such speech, so have not copied it. Delinquents, while said to be poorly motivated to deal with language material, have not necessarily lacked models of complex and wordy speech.

Where the findings with respect to language overlap, a similar result occurring on the basis of social class as for delinquent status, different causes are, then, suggested to lead to the same effects. Thus, that the extent of vocabulary knowledge was more limited for working-class groups and for delinquent groups alike seems to be explained reasonably in respect of the social-class findings by more limited educational opportunity and language stimulation being available to the

working class than the middle class. It is the unavailability for them of more expanded language rather than any active rejection or dislike of it that is being highlighted. By contrast, it is the poorer motivation to treat with language material which is thought to produce similar effects for delinquent as compared with nondelinquent youths. It is contended that, unlike for syntactic complexity and speech volubility, for vocabulary level to be maintained relative to one's environment, a constancy of attention to language and a constancy in language practice may be needed. Poorer motivation to deal with language forestalls such attention and practice.

The question might well be asked, why does the difference in motivation necessarily occur for delinquent groups but not for the working class? Unlike for the working class, delinquents are said to have paired stress and language through traumatic events earlier in their development when, by dint of age, they were quite vulnerable. The essential difference in language motivation between the two groups is thought, then, to lie in their histories. Further, earlier in this section it was pointed out that the theory on which this research is based would suggest that working-class youths could have a vulnerability to delinquency, only in so far as lack of material resource could lead to early home stresses. These could affect the motivation to use language and, ultimately, interpersonal planning. Could one, however, subsequent to early childhood, not develop a type of emotional response in speech situations because of poor competence with language, that could lead to the same sequence suggested to culminate in delinquency? For example, perhaps lack of proficiency with words relative to the middle class on the part of working-class youths could cause embarrassment interpersonally.

If this process were to begin beyond mid-childhood, the mechanism of how it

would be implemented would most likely need to be seen as other than through a reversion to motoric responding: It would be difficult to envisage a reversion to an earlier developmental mechanism without this being begun before or at the time when change to the mechanism was in process. This argument does not, of course, preclude an emotional reaction becoming related to language situations. The point is only that it would be difficult to subsume it within the present formulation of the model. Further, in the absence of triggering a motoric responding, it seems unlikely that an emotional reaction to language based in poor language competence would habituate to the same extent and become as entrenched as is suggested to occur when a reaction is set in motion early in childhood, and in a situation of childhood distress. For these reasons, if negative feelings towards language were to result solely from a poorer competence with it than is shown by the middle class, it is suggested that these would have limited effect on the verbal planning aspects of functioning.

Probably, in practical terms the question is largely not an issue. After all, in their normal environments working-class youths would be using language as do their peers, so would be unlikely to be troubled about language differences from those they do not perceive as being a part of their immediate world. Certainly, that there was no evidence of poorer motivation to use language compared with the middle class while at the same time evidence of poorer language efficacy on their part, in this study, supports this view. However, the question, whether the sequence to delinquency through the tendency to a "no thought" strategy could be activated by other than a mechanism of motoric responding, seems intrinsically important.

The question becomes especially important in the light of a finding still to be discussed, which was unanticipated and problematic for the theory: that

working-class and delinquent groups alike were found to score significantly lower on statements of introspection than did their comparison groups, but only when the task was the planful, interpersonal, and verbal Means-Ends Problem-Solving task. In foregoing comments it was suggested that, where findings for working-class and for delinquent groups were similar, the causes could be considered different but would have the same effects. The finding of less frequent introspection on Means-Ends Problem Solving, if similarly explained in terms of effects for delinquents and for working-class groups, would have considerable social implication.

How this finding for the working-class would need to be interpreted, given the framework already constructed, becomes apparent only when at the same time all of the following issues are considered: 1) The patterning of results pertaining to social class implies disadvantage for the working class; 2) there is no *consistent* evidence of social-class-related difficulty in problem solving, be the problems verbal or otherwise; 3) additionally, there is no evidence of dislike of language nor more liking of movement activities among the working class than among the middle class; yet 4) reported introspection occurred with similar frequency for the working class as for the middle class except in verbal interpersonal problem-solving (planful) situations. One is left to conclude that the outcome would need to be explained as it has been for young offenders. If the relative dearth of introspection constitutes a tendency to a "no thought" strategy at the beginning of problem solution, this could well disrupt, at the outset, the adoption of the most efficacious plan of action.

Assuming the outcome were the same, it is suggested that the mechanism would be different. Returning now to the question previously raised: Could a "no thought" strategy, then, be implemented other than through motoric responding? It is

possible that, beginning with the speech interactions between mothers and children, the cultural, educational process for the working class does not emphasize planfulness or some aspects of planfulness in relation to interpersonal problem solving, to the same extent as for the middle class. The conclusions by Tough (1982), cited earlier, which, she suggested, pointed to language being used for different purposes by the children of advantaged parents than by children of disadvantaged parents, gives credence to this. The content of the differences she noted, examples being a more frequent use of language to project into the lives of others, to predict and consider alternative possibilities, and to reflect on present and past experiences, reinforces this view. Perhaps the thought to think in approaching interpersonal problems is not stressed to an equal extent by different social classes.

Further, since the verbal component of the verbal, interpersonal, and planful Means-Ends Problem-Solving task must be accounted for (the working class having performed similarly to the middle class on Picture Arrangement, which was nonverbal, interpersonal, and planful), it is suggested that perhaps it is not merely different components of interpersonal problem-solving strategies that are differentially learned, depending on social class. Perhaps also the learning is *situationally* bound so that, for example, in *verbal, interpersonal situations*, stopping to think at the beginning of (and during) problem solution has not been given emphasis. More limited introspection for the working class in comparison with the middle class would not, then, be an active tendency to a "no thought" strategy as for delinquents, but merely a failure to have learned or to have been adequately taught a coping strategy in a context. Be that as it may, problem solution would be disrupted. Such occurrences would become frequent in adolescence when trials at interpersonal relating increase, and the outcome for working-class youths and for delinquents would

then be similar : A proneness to precipitate actions by both groups alike, the phenomenon having different origins, could in time lead to delinquency, because of the sheer number of insufficiently planned interpersonal activities increasing the likelihood of its occurrence. This mechanism, which would indicate a proneness for the working class to delinquency, has implications for remediation : The problem for working-class youths might well be circumvented by teaching them to think about thinking in verbal, interpersonal situations. Delinquents, on the other hand, would additionally need help in overcoming a motivational resistance to language.

A final issue to be addressed, when considering social-class and delinquency findings together, was the lack of any interaction between social class and delinquent status on word knowledge and language expressiveness variables. It had been hypothesized that social class would either moderate or worsen the effects on the expressive language of delinquents created by a negative motivation towards its use, such that working-class delinquents would perform least well. Since relative to nondelinquents, delinquents did not perform more poorly at all in terms of the amount and complexity of their language, it follows that working-class delinquents would then be unlikely to do least well on those measures. What was interesting, however, was the lack of expected interaction concerning vocabulary knowledge. This finding would be understandable only if it were argued that a longstanding, negative motivation towards language may be sufficiently potent in its effects on retarding the increments to vocabulary occurring, that class-affiliation effects would be negligible. Again, however, this finding has forced a modifiction of the theory.

4.5 *The Language Coping of Delinquent-Status and Social-Class Groups: Summary Statements*

To summarize what can reasonably be said, a different pattern of results emerged relative to social class and to delinquent status, with respect to language expression and the planning of some tasks. It was therefore able to be demonstrated that delinquents, irrespective of their social class, have language coping problems, and that these are of a different order from those pertaining to class. Nevertheless, while, in general, the working class and the delinquents showed inferior performance to their comparison groups, in terms of a wider variety of indices, poorer language expression was more characteristic of the working class than of delinquents. Since the majority of adjudicated offenders normally come from the working class, these findings indicate clearly that a large part of the verbal problem usually attributed to delinquents may be more a function of their social class than of their delinquency.

In comparison with middle-class groups, there was more limitation in the complexity and amount of speech used by working-class youths, in addition to a more limited working vocabulary. There was also an indication from a paper and pencil task of possibly more disinterest in excellence of performance on such a task, and more difficulty negotiating a problem task that partly involved solving problems of sole survival that could pertain to experiential opportunities and quality of educational input. From these findings, it was thought that the overall picture gained of social-class differences in language and planning was consistent with more limited educational and cultural opportunity for working-class as compared with middle-class subjects.

By contrast, for delinquent subjects compared with nondelinquents,

contrary to what was hypothesized there was no evidence of poorer processing of what was said to them, nor of less syntactic complexity, nor of reduced amount of speech used. However, in line with the theory presented, there was a difference found in motivation towards language with respect to liking language less and thinking it less important; also, and perhaps resulting from this, there was a difference in the quality of speech, in that their working vocabulary was significantly more limited. It was reasoned that if delinquents were prone to closing off from language situations, perhaps only vocabulary would suffer after all since, unlike for syntax and the volume of speech which might become quickly overlearned from the environment, a constancy of attention may be needed to maintain vocabulary level. For the delinquent group, poorer motivation to use language rather than any deprivation in access to it seemed a reasonable explanation of language results.

Evidence was very much more tenuous when it came to trying to link the verbal characteristics of delinquents to the delinquent process itself. This was attempted through seeking to relate even the co-existence of verbal motivational problem and poorer interpersonal verbal problem solving exclusively to the delinquent groups. In spite of the test evidence of poorer motivation from the Attitude to Language Test, and the more limited vocabulary of delinquents, argued to result from that negative motivation, supportive *behavioural* evidence of this motivational problem impelling delinquents to a less thought strategy was not forthcoming: Those language tests within the design varying verbal/planful/ interpersonal dimensions and their opposites had not yielded supportive results. Modifications to the theory were needed to accommodate those findings, and it was argued that for the effect of a negative motivation to become manifest in test performance, tasks would not only require complex verbal processing but would need to be sufficiently threat-related,

in terms of being both verbal and also interpersonal in content.

The fact that no significant difference was subsequently found in the ability of delinquents to produce steps to the solution of interpersonal, verbal problems, nor in their ability to elaborate on them certainly weakened the notion of any link between verbal functioning and delinquent process. However, a hint of what could be operative in the process of delinquency came from a finding of a comparative lack of introspection by delinquents, *only in verbal interpersonal problem-solving (Means-Ends Problem Solving) tasks.* This was suggested to be a manifestation of the "no thought" strategy described in the theory outlined in Chapter One. It was argued that more limited introspection especially at the inception of interpersonal problem solution might affect the quality of choices of action. If this is so, the Means-Ends Problem-Solving task which primarily measures whether subjects can devise a concerted plan rather than measuring the efficacy of the solution chosen from among others, would not have been appropriate to tap that issue. Future research should be aimed at establishing whether the generation of, and/or the selection from among various plans of action in the solution of interpersonal problems is more difficult for delinquents than nondelinquents as a result of a dearth in introspection at the beginning of a task. If it were, then the notion of this constituting a link to delinquency would be more tenable - less effective choices of action leading to largely unpremeditated delinquency.

There was an unexpected finding that, as for delinquent groups, working-class as compared with middle-class groups showed less frequent introspection, but only in the verbal interpersonal planning task (Means-Ends Problem Solving) and not in the comparison task which was non-interpersonal

(Survival Tasks). Where this finding could lead conceptually is provocative. It was explained as being based in a difference between the working-class and the middle-class cultural, educational processes, the working-class models perhaps not emphasizing planfulness or some aspects of planfulness in relation to solving interpersonal problems. It was also argued that this problem in learning an adequate coping strategy might be situationally bound, for example, tied to verbal contexts. Thus, the working class may have not been taught the thought to think at the inception of, or during, the planning process to the solution of interpersonal problems in interpersonal, verbal situations , situations which tend to increase for juveniles during adolescence.

The outcome of a limitation in introspection would, for consistency in argumentation, need to be interpreted as it was for the delinquent groups: It could lead to truncated planfulness in interpersonal situations and to increased likelihood over time of subjects chancing on illegal responses. More proneness for working-class youths to largely unpremediated delinquency is the logical sequel. Thus, given that the theory allows for no vulnerability to delinquency related to class, except in terms of possibly more likelihood of pairing stress and language in the earlier environments of the working class, the explanation needed to rationalize this result has once again necessitated a modification of - an addition to - the theory. It needs to be said that it would, however, seem precipitate at this stage, particularly in view of the implications of such reasoning, to give significant attention to a conclusion of more proneness to delinquency by the working class, based on a fabric of logic and too small a basis in data around the issue. Too many unknowns underlie the finding for reasonable conclusions to be drawn about how the phenomenon of poorer introspection would be shared in common by delinquent groups and working-class groups. Suffice to

say that the finding is treated as a possible future link to explore in the search for explanations of delinquency process.

The hypothesis that social class should exacerbate or moderate the effects on the expressive language of delinquents was not supported, in that while vocabulary knowledge was poorer for delinquents than nondelinquents, and also, for the working class compared with the middle class, the working-class delinquents did not perform least well on vocabulary. It was argued that an ongoing poor motivation to deal with language may retard vocabulary growth, to an extent where any additional retardation in vocabulary knowledge related to working-class affiliation would be negligible. Thus, again, a modification of the theory was necessitated. Otherwise, what can be said about communality of findings between class and delinquent status is that, although the quality of the verbal coping of working-class and delinquent groups diverges, due to apparent different causes, ultimately the two groups would seem, in contrast to their comparison groups, to share a comparative lack of ease/facility in the world of words.

The profile that emerges of young offenders from this study is of persons who may have a motivational problem with language rather than deprivation in access to it. Thus, they show no difficulty in language comprehension or in complexity or amount of expressed language - they show the capacity to speak as much and as complexly as others - but they do not like the use of language as much nor think it as important as do nondelinquents, preferring, instead, self-expression through movement. Perhaps as a result, their vocabulary, irrespective of their social class, is more limited, so the quality of their speech would be different from that of nondelinquent peers. In general, they can solve both verbal and nonverbal problems with equal facility to that shown by nondelinquent peers but may have difficulty in the

area of interpersonal verbal problem solving because of more limited introspection, thinking before action or segments of action.

Since adjudicated delinquents, at least in the Australian culture researched, have been reported to more often issue from the working class, a composite picture is now made of the functioning of working-class youths and delinquent youths from this study. This may represent the likely, most frequent presentation of those juveniles who come to the attention of the police and the courts. They are young persons whose expressed language is more limited in amount and complexity than that of nondelinquents, and in level of vocabulary, and they are not motivated to use language, in so far as they do not like it or see it as important to the same extent as do nondelinquents; they prefer movement. They may approach paper and pencil tasks with an attitude of "near enough is good enough". They have difficulty solving practical problems such as those concerned with survival in dangerous situations in nature which would be predicated on special knowledge being available, but it has apparently not been; and, in addition, they may not sufficiently introspect, stop to deliberate before launching into the solution of interpersonal problems. It seems reasonable to say, from this profile, that their adjudicated status may be as well related to their social/language presentation as to their delinquency.

4.6 *Implications from the Research*

4.6.1 *The Multiple Delinquent Groups Design : Necessary or Impractical?*

What seems a major disadvantage of this kind of study is the copious amount of research time required, a disadvantage that needs to be weighed against any identifiable benefits in comparing cross-sections of offenders compared with non-offenders. The time-consuming aspect of this research was real. Certain groups

were extremely difficult to obtain, for example, middle-class institutional delinquents were particularly rare, and subjects had to be waited on to come into the system. It was also found that numbers of youths interviewed in schools with a view to their inclusion in the working-class control group could not be included because they owned to having committed delinquencies, something that occurred much less often in the quest for middle-class controls. Thus, to obtain a sample of working-class non-offenders also proved time-consuming. These kinds of problems, in addition to the four-hour-per-person time expenditure on the testing of 180 subjects, have consequent financial implications. If no difference had been found in the performance of the different delinquent groups, chosen in terms of an ostensible gradation of frequent or severe offending, the testing of a diversity of delinquent groups would need to be justified. Certain differences did obtain. These are detailed to give a profile of the groups, to help weigh the advantages of their inclusion.

Those cautioned were able to be distinguished from those in institutions and on probation on dimensions that suggested that the cautioned youths may be more intellectually able as well as more verbal than the other delinquents. They gained a statistically higher intelligence score than the institutional and probation groups combined and, even with intelligence adjusted, were more verbally productive, giving more words per sentence, at least on one test (Non-People Photos Test) than these groups combined. Also, in comparison with the institutional plus probation groups, the cautioned groups showed more frequent introspection (Survival Tasks only), a finding which becomes difficult to interpret when controls and delinquents overall failed to significantly differ with respect to introspection, although once again, it suggests that the cautioned groups may be more competent than other delinquents. One is tempted to interpret such findings as indicating that those young offenders who are

more personally talented are able to present better to police and are thus more likely to be cautioned rather than charged. However, it is possible, also, that those same talents could intervene in an offending process to stop the young offenders becoming embroiled in the more serious offences which would inevitably lead to them being charged rather than merely cautioned, were they to be caught. As well, a higher intelligence could make them normally better able to evade authorities, and a consequent lack of recorded offending history lends itself better to a cautioning than a charge when they finally do come to police attention.

The profile of the institutional offenders in this study suggests that they may be less culturally privileged than their peers, be they from the working class or the middle class. They gained a lower social-class rating and evidenced poorer word knowledge than did probationers. It was also found that the middle-class institutional group was significantly younger than the middle-class probationers which suggests that, possibly, severity of offending dictated inclusion of younger middle-class youths in institutions, although the nature of offences was not subjected to analysis. Further, from information gained after the completion of data collection, one is left to ponder whether severity of offending, a comparative limitation in cultural opportunity and perhaps more conflictual life circumstances may relate significantly to institutionalization : Of at least the 25 working-class institutionalized delinquents tested in this research, and these were chosen on a first come, first included basis where they fitted the basic criteria, two subjects independently went on to be implicated in murder. A third was himself murdered. Such extreme later events were not in evidence among other delinquent groups.

The probationers, by contrast, would appear to have been the

middle-of-the-road offender groups, those at neither extreme. They were, together with the institutional groups, less intelligent, and also (with intelligence compensated for) less verbal than the cautioned groups, in that they said fewer words in sentences than those cautioned, but in comparison with the institutional groups, they were of a higher social-class rating and had a more developed vocabulary. On the other hand, the anomalous findings from one test, Porteus Maze, defy similar interpretation of the probationers presenting no extreme : that probationers, middle-class and working-class combined, made more qualitative errors (Q score) than those institutionalized, and that working-class probationers gained a statistically lower test age score than the working-class institutional groups on this test suggests more limited competence by the probationers, and this does not readily fit the general picture of this group.

Although the different profiles of the delinquent groups do contrast,it is noteworthy that save for vocabulary knowledge which was significantly different for probation and institutional groups, on other important variables suggested to be implicated in delinquent process (attitude to language variables, and introspection on the interpersonal verbal problem-solving task), no real differences obtained. If the groups represented gradations in the severity of delinquency, differences would have been expected. On the basis of those observations it could be argued that the testing of one delinquent group may suffice, the testing of probationers perhaps being indicated, since this seemed to be the group presenting the least of extremes, an "average" group. On the other hand, since some differences in profile were demonstrable for each group, it seems evident that a richness would be lost from results if a variety of delinquent groups was not included. Also, the use of merely an "extreme" group as representative of delinquents could prove misleading. For example, the findings from

this research do provide at least a modicum of evidence in support of an objection raised earlier in the study about the exclusive use of institutionalized samples of offenders from which to extrapolate ideas about delinquents generally. The institutionalized group in this study, being inferior in socioeconomic status and in working vocabulary to the probationers, would presumably have brought more limited resources to bear if they had constituted the sole delinquent sample. In terms of providing a truer picture of what might normally obtain in the functioning of adjudicated delinquents, the inclusion of a cross-section of delinquent samples seems justifiable. If the use of different cross-sectional groups of delinquents is an important consideration in delinquency research, of no less importance is the question of the role of intelligence both for the sample selection of delinquents and nondelinquents and in the performance characteristics of both groups.

4.6.2 *The Influence of Intelligence on Results*

A most important finding from this study for future research practice was that the delinquent groups were found to be less intelligent than controls, based on a nonverbal IQ test. In section 3.2.2 it was pointed out that this may have been due to the sampling not being as representative of nondelinquent youths as it might have been.

In the case of the working-class youths, difficulty had been had in getting nondelinquents from school sources, although a reasonable number was finally obtained from schools. Because of this difficulty but also because some older-age youths, and youths already working, were needed to balance the groups, railways apprentices were approached. These seemed an optimal group because they would also have been screened by railways authorities for good behavioural history before they

were employed. However, in the economic climate of the time, where there was competition for selection as a railways apprentice, their intelligence level may have been higher than that of working-class youths in the normal community. Also, there is an important bias that cannot be controlled when school authorities are asked to recommend students known by the school not to have an offending or behaviour-problem history. They may well refer their favourite sons, those who are better at their work, more co-operative, and perhaps often more intelligent, despite requests for a cross-section of students otherwise being needed. Such bias, if it were present, could have affected the selection of controls from both social classes.

A second possibility, of course, is that rather than the controls being atypical in intelligence, delinquents are generally not as intelligent as controls and the current research findings are merely a manifestation of that, an argument that has already been considered sceptically in Chapter One. In that chapter it was suggested that past researchers may not have sufficiently controlled for verbal insufficiency in the intelligence testing of delinquents. In the present study, an attempt was made to obviate that problem by using a nonverbal intelligence measure. It is not improbable that that safeguard was helpful and, although an intellectual disparity was nonetheless found between delinquents and nondelinquents, unknown and perhaps unknowable bias in the selection of control groups remains an important possibility in explanation of this. Whatever the reason, indications from this study are that one may not assume that delinquents and nondelinquents will be comparable in measured nonverbal intelligence. Also, since covariance of unmatched control variables has not gone without controversy in the literature (cf. Lord, 1967; Freedman et al., 1978), it seems that the safest though time-consuming option indicated is to control for intelligence from the outset, in the selection of subjects.

Be that as it may, the statistical compensation for intelligence has been able to add a further dimension to findings in this research. A comparison of uncovaried analysis of variance data with those resulting when intelligence was covaried leads to interesting speculation about the influence of intelligence on the performance of delinquents and nondelinquents, and of working-class and middle-class groups.

Of particular note was the fact that in few instances did intelligence appear to influence the significance of differences between delinquent and nondelinquent groups on the measures used in the study, in that findings based on covaried data rarely differed from those where compensation for intelligence had not been made. It does not necessarily follow that delinquent process is largely unrelated to intelligence. However, that idea gains some measure of support from the fact that, of those variables thought to have particular relevance for delinquency, the Attitude to Language Test variables, vocabulary knowledge (Quick Test), and introspection from Means-Ends Problem Solving, only one, the Attitude to Language variable, importance of movement, seemed influenced by intelligence, and this finding appeared unrelated to delinquent status: Endorsing movement as being important to them was significantly more often in evidence for delinquents than controls, only when intelligence was not compensated for. Given that delinquent groups were less intelligent than controls, considering movement activities to be important could depend more on intelligence than on delinquent status.

While intelligence appears to have had very little effect on performance on those variables thought to relate importantly to delinquency, on three other variables significant differences between delinquents and controls had occurred, again only when intelligence was not covaried. In the first instance, enumeration of obstacles on the

Means-Ends Problem-Solving test (but curiously not on the Survival Tasks), controls elaborated more about the obstacles to solutions to interpersonal problems than did delinquents. However, since controls were also higher in intelligence than the delinquents, again such a finding seems less related to delinquent status than to initial differences in intelligence between groups, and perhaps also to the interpersonal nature of the test since the lack of comparable finding on the Survival Tasks remains unexplained.

The two further instances need to be viewed together. Firstly, working-class delinquents were found to give aggressive content in stories more frequently as a first option to interpersonal problem solution than did controls. Secondly, middle-class delinquents performed significantly worse than middle-class controls on picture arrangements not scored for speed of completion (Picture Arrangement, raw score). Since no significant interaction had been found between social class and delinquent status for intelligence, it seems that both a proneness to think of an aggressive option first for solving interpersonal problems, and the ability to correctly complete picture arrangements not scored for speed may not be related primarily to delinquent status but to intelligence mediated by social class. (Why on the other hand, a picture of less complexity should emerge concerning the successful completion of picture arrangements scored for speed - Picture Arrangement, score with time bonus - there being no significant difference between delinquents and controls whether uncovaried or covaried data were used - defies ready explanation).

Much as had occurred with the results for delinquents and controls, when covaried and uncovaried results were perused looking at subgroups of delinquents compared with each other, only a few instances were found where covariance of

intelligence appeared to influence results. The most notable of these pertained to Porteus Maze findings. The finding that cautioned groups made significantly fewer qualitative errors (Q score) than did the institutional and probation groups combined, only when the analysis was based on uncovaried data, seems readily explained in terms of the cautioned groups being more intelligent than the other two groups combined. At the same time, it suggests that performance on Porteus Maze Q score may be influenced by a disparity in intelligence between delinquent groups compared. This would need to be taken into account in the interpretation of future research findings from this test. Further, the finding that working-class institutional and probation groups together had a significantly lower test age score than did those cautioned, again, only when uncovaried data were used in the analysis, when at the same time there was no significant interaction between social class and delinquent status for intelligence (Ravens IQ), suggests that, when there is a comparison between the performance of delinquent groups only, the efficacy of the planning of Porteus Maze items may depend on the intelligence in conjunction with the social class of the groups. No such influences would, however, seem to affect any comparison of delinquent with nondelinquent groups.

While it has been demonstrated that intelligence infrequently appeared to influence the significance of differences in the performance of delinquents and controls as well as of the various delinquent groups compared, this was also largely the case with respect to social-class comparisons. Those comparatively few instances of disparity, where significantly better performance of the middle class was found only when uncovaried data were used, can be related to the intelligence of the middle-class groups being higher than that of the working class. The instances entailed the comprehension of verbal instructions and of memory (Test 7); speech

volubility (the number of words used per sentence on the People Photos Test); and the number of relevant means devised to the solution of interpersonal problems and the number of elaborations of these means on Means-Ends Problem Solving. (Differential findings when data were uncovaried and covaried for no response and no means on the Survival Tasks involved such small numbers that those findings may well have been spurious).

To summarize what can reasonably be said: A comparison of uncovaried analysis of variance data with those resulting when intelligence was covaried suggests that the influence of intelligence on the performance of delinquents compared with controls, (and of middle class compared with working class) at least on the kinds of tests administered in this study, was quite circumscribed.

Certain of the differences which did obtain between delinquents and controls when uncovaried but not when covaried data were used, and also between sub-groups of (institutional, probationer, and cautioned) delinquents, provided new information about the characteristics of delinquents relative to particular tests. It does seem that at least the giving of aggressive solutions to interpersonal problems in stories may be both a function of the intelligence and the social class of delinquents. Whether this has meaning for action rather than merely stories about action would need to be given other research attention. Also, it can be said that when the performance of different sub-groups of delinquents is compared using Porteus Maze, researchers would do well to be mindful of the influence of intelligence in conjunction with social class on test results.

In addition to the effects of intelligence on performance, other features of

the study have implications for future research: Conclusions need now to be drawn about how well those aspects of the theory of delinquency tested in this study fitted with the research findings, and about where research should go in the light of those findings.

4.6.3 *Implications for the Theory of Delinquency Proposed, and for Future Research*

Three facets of the theory of delinquency outlined in Chapter One were researched, the conclusions concerning each of these facets being outlined in what follows. From the outset it can be said that the findings provided some support for two of the three components of the theory but that adequate testing of the third component was ultimately lacking. Indications from investigation of this third component were, however, that modifications to the theory were needed, and further, that if links between postulates were to be established, an elaboration of hypotheses concerning process, and possibly numbers of researches would be required.

The first facet of the theory considered in the study, whether there is more limited motivation to deal with language, and a preference for action rather than words for delinquents compared with nondelinquents, was supported by the research results. Compared with nondelinquents, and irrespective of social class, delinquents were found not to like the use of language as much, they did not think it as important and liked movement activities more. This was construed as a more limited motivation to approach language and a preference for action. It needs to be said, however, that although it seemed readily able to be deduced from the rating test designed to tap attitude to language, that delinquents did show poorer motivation to deal with language

material than nondelinquents, how this translated into action was another issue, to be addressed further. (Facet Three of the theory.)

The second consideration was whether there was a problem with language expression, and whether this was further exacerbated or attenuated by social-class membership, for delinquents as compared with nondelinquents. There was some support for these propositions: Irrespective of social class, delinquents had more limited vocabulary knowledge, so the quality of their language output would be poorer than that of nondelinquents. They did not, however, show less ability to process verbal instructions given them than did nondelinquents, nor was the amount of speech they used in descriptions more limited in amount and complexity than that used by nondelinquents. While contrary results had been expected, it was reasoned that the words in the comprehension of instructions task were quite basic and would not have taxed respondents. Also, it was argued that the expectation that delinquents would do less well on syntactic and volubility measures may have been unrealistic, since a tendency to tune out of language situations may merely affect the *quality* of language, growth in vocabulary perhaps needing more consistency in attention and word practice than might syntactic knowledge and habits of volubility, readily learned from models in one's culture.

As to the expectation that membership in a social class would attenuate or exacerbate the effects on language expression of the poor motivation towards language : Interaction effects between class and delinquent status had been anticipated such that, of middle-class and working-class delinquents and controls, the working-class delinquents would show least expressive-language competence. Such interactions did not occur. It was argued, firstly, that since on the indices of complexity and amount of

language there had been no significant differences (the reasons for this already having been addressed), it would have been unlikely that subsequent interactions would emerge. Secondly, it was argued that an interaction between social class and delinquent status did not occur with respect to vocabulary knowledge, because a habitual negative motivation towards language may be sufficiently powerful in its effects on retarding increases to vocabulary growth, that any effects due to class affiliation may then be of little moment.

While it cannot be said, then, that membership in a social class further affected for the better or worse any one individual language problem evidenced by delinquents, what the research did show was that working-class membership would likely make the range of language difficulties broader for delinquents. Since working-class compared with middle-class groups (delinquent and nondelinquent) evidenced less efficacy in language expression in terms of the amount and complexity of language used, it follows that working-class young persons who were also delinquent would have a wider range of language difficulties from that experienced by delinquents from the middle class.

The third facet of the theory to be investigated was whether a disruptive effect of language inhibition on planning in verbally loaded situations, especially with interpersonal material, might be inferred from difficulty with interpersonal cognitive problem solving by delinquents. Since deficit in interpersonal cognitive problem solving by delinquents was not established from this research, an inference cannot be made about whether language inhibition disrupts planning of such material. However, it needs to be said that failure to find a behavioural demonstration of poorer functioning by delinquents on verbal tasks, from among a series of tasks varied on

planful/ interpersonal/verbal dimensions and their opposites, was a substantial negation of the model. This was especially so when these tasks culminated in the planful, interpersonal, and verbal Means-Ends Problem-Solving task. Specifically, the following findings have significant negative implications for the theory: Firstly, it was found that relative to nondelinquents, delinquents could cope with numbers of tasks where person-related language coping was required. (When interpersonal/planful/verbal dimensions and their opposites were systematically varied, delinquents could cope as well as controls with tasks that were verbal and nonplanful, and nonverbal and planful, irrespective of language relatedness, and with verbal, planful tasks that were not people related).

Secondly, when planful and verbal dimensions were varied impersonally and interpersonally in terms of task content, only verbal interpersonal problem-solving tasks (Means-Ends Problem Solving) pointed up at least some difference in functioning between delinquents and nondelinquents. However, this pertained to one variable only. These findings make tenuous the idea that the effects of a motivational problem with language might impel delinquents to a "no thought" strategy. However, since at least rating-scale evidence of the possible existence of a motivational problem with language was obtained, and since changes to the theory can be suggested on the basis of the research findings, it seems reasonable to pursue the model further as a research tool.

The findings from this study indicate the possibility that the three task components of verbal, interpersonal, and planful must be present for a significant difference in functioning to become evident. However, a conclusion cannot be firmly drawn since it would need to be shown that the variable that evidenced a significant

difference between delinquents and nondelinquents, when all these components were present - introspection - does not do so on verbal and nonplanful, nonverbal and planful tasks, regardless of people relatedness. Introspection was not measured in those latter tasks in this research. That such a difference was not found in a directly comparable noninterpersonal task (Survival Tasks), nevertheless favours such a conclusion. Also, because mere language relatedness of a task in a social situation did not lead to a display of deficit by delinquents, modification of the theory through further specification would be needed to suggest that, for deficit to be shown, a task must have firstly, verbal complexity. Secondly, it must have sufficient interpersonal threat, such as interpersonal content, in addition to merely taking place in a social situation.

While less frequent introspection by delinquents on the interpersonal verbal problem-solving task did not influence the ability of delinquents as a group to produce the steps to solution of problems, the conceptual repercussions of such a finding are in line with the reasoning of the theory: Less frequent introspection could be interpreted as a tendency to a "no thought" strategy. Perhaps lack of sufficient introspection affects interpersonal problem solving other than through the production of means to the solution of problems as tested by Means-Ends Problem Solving. It may, instead, affect, for example, the generation of a range of options, or else the selection of the most efficacious plan of action from among others, through insufficient thought at the inception of problem solution.

Thus, while no explicit evidence of difficulty for delinquents in solving interpersonal problems was found, a hint was nevertheless gained to where this might occur, this constituting a possible link to the underlying mechanism of relatively

thoughtless delinquency. Two lines of investigation would seem to flow on from these results. It needs to be established firstly, whether introspection occurs less often only when interpersonal verbal problem solving is the task, and, secondly, whether interpersonal cognitive problem solving is less ably coped with by those delinquents who introspect less often on these tasks, with fewer options being perused or the perusal of those options generated being insufficient, before a course of action is decided. To test these latter issues, the Platt and Spivack (1977) generation of alternatives task, the Optional Thinking Test, and also the consequential thinking task, the Awareness of Consequences Test, would seem optimal. In addition, to extend knowledge of the mechanism of which the "no thought" strategy is suggested to be a part, a testing of whether delinquent youths more often than nondelinquents respond motorically than semantically to interpersonal speech, through using the Luria bulb-pressing test of this phenomenon, seems indicated.

4.6.4 *Implications for Intervention/Therapy*

The findings, that irrespective of class, young offenders do not like the use of language to the same extent as do nondelinquents, do not have as extensive a vocabulary, and prefer movement activities, call into question the use of exclusively "talk therapies" as major interventions with delinquents. Yet, such therapies are the primary intervention modes still used by numbers of professionals and indeed more by some disciplines than others, because it was in those therapies, more commensurate with the presenting problems of other populations, that they were trained. Perhaps the argumentation in the literature since the early seventies about whether therapy does or does not work with this population (cf. Martinson, 1974; Wilks and Martinson, 1976; Brody, 1976; Ross and Gendreau, 1980; Ross and Fabiano, 1985) might have progressed further still if the efficacy of primarily talk

therapies had been examined.

If intervention for change is asked for by young offenders, the data from the present research suggest that it might well be geared to motivating them to approach language (and, in the case of the working-class delinquents, to additionally providing a wider range of stimulus and dialogue opportunities) through action techniques perhaps like assertion training, where an expanded use of words can be incorporated with role-play without there being necessarily an evident focus on language. In addition, the interpersonal problems played out in the role-play sequences could incorporate coaching in introspection and planning. These considerations have implication for school-based educationalists as well as for counsellors. Also, that delinquents demonstrated generally no less ability than controls to sustain attention or to concentrate, and showed no more evidence of locus of control being externalized could have meaning for how these young people are perceived relative to nondelinquents in their interchanges with authority.

Further indications concerning intervention modes, their timing and focus, follow from facets of the theory outlined but not researched in this study. These are untested, theoretical notions only: Firstly, if early stress at the time of speech development were to lead to a) a motivation not to use language in stress (interpersonal) situations, and b) the tendency for language to impel action to become prolonged, the time for intervention in the delinquency process for those at risk could reasonably be at an early age. Moreover, the focus of intervention would need to be on stimulating language use. Secondly, if the influence of important persons in the young offender's environment (cf. Brown, 1989, Appendix R), family, peers, school authorities and correctional workers, were to reinforce delinquent responses once

they did occur, through their mode of reacting to them, attention would need to be given also to that mechanism.

Finally, if control deficit through a lack of verbal cuing (insufficiency of thought) proves to be a major problem for delinquents, rather than any deficit in the level of conceptual moral development attained which could influence the quality of their thought, it would follow that perhaps for a large percentage of delinquents there is generally no forethought of malintent, merely a lack of thought. Coaching specifically in stopping to think would then need to be included in interventions offered.

4.7 *Conclusions*

The research has been able to demonstrate that the language-coping profile of adjudicated delinquents, compared with nondelinquents, differs from that obtained on the basis of social-class comparisons. The findings for delinquent groups suggest a motivational problem in the use of language rather than any deprivation in access to it, while those for social class are more indicative of less educational and cultural opportunity for the working class. However, since adjudicated delinquents, at least in the culture researched, most frequently come from the working class, the two profiles would merge in the presentation of the majority of young offenders to authorities, the language problems relating to working-class status, rather than those relating to delinquency, comprising the broader range of difficulties in evidence.

A singularly important implication for strategies for change flows from such results, namely, that therapeutic interventions that are fairly exclusively reliant on language would be contraindicated with delinquent populations, for whom

the motivation to use language is low in comparison with nondelinquents. Yet, language-based therapies are still in frequent use with such populations.

In the search for a link between language-coping characteristics and delinquency process, no explicit evidence was found. However, there was a finding of less frequent introspection (reporting of thinking first) on the part of delinquents when tasks were verbal, interpersonal, and problem solving. It is suggested that this may be a manifestation of a "no thought" strategy in such situations, which could affect the quality of the solution chosen in verbal interpersonal problem solving. Further research would be needed to elucidate whether this is so, and whether this might have a causal role in the delinquency process.

Finally, it is submitted that the theory underlying this research remains viable: Modification of the theory in light of the findings of the study would maintain it as a useful model from which to pursue further questions brought to the fore in this thesis.

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