CHAPTER V
DISCUSSION OF RESULTS

The present study was conducted in order to make a comparative study of normals and criminals at three age levels. The criminals had been further subdivided into major and minor according to the type of crime committed. This comparison between the said groups was made on the variables of intelligence and personality. The discussion of the results of the present investigation would therefore revolve around bringing out the differences between criminals and normals on the variables of intelligence and personality.

(A) DIFFERENTIATION OF NORMALS AND CRIMINALS ON INTELLIGENCE

While reviewing the literature on intelligence and crime, it was observed that though early workers had linked low intelligence to criminality (Goddard, 1912, 1921), a very convincing explanation was not offered and some studies had even found negligible differences on intelligence between normals and criminals (Murchison 1926, Tulchin 1939). The present study was therefore undertaken to investigate the differences, if any, on intelligence between normals and criminals. Intelligence was measured by the Raven's Standard Progressive Matrices (Raven's 1960) in both normal and criminal groups. The results show that the criminals have much lower intelligence than the normal group.

The mean scores on SPM for the normals at the three age levels of 21-30, 31-40 and 40+ years were 44.94, 42.66 and 39.36 respectively. For the criminals as a whole (major and minor
criminals combined), the mean scores were 36.06, 30.94, and 32.04 for the respective age levels (See Table II). The significance of difference between means of these two groups was tested through the t-ratios which were significant for all the respective three age groups.

The analysis of variance computed for intelligence scores of normals and major criminals also revealed significant differences between the two means (See Table III). The same trend in results was obtained when analysis of variance was performed on the intelligence scores for normals and minor criminals (see Table VII). This shows that there are significant differences on intelligence existing between normals and criminals of either type. Each type of criminal was much lower in intelligence than the normal group as hypothesized in Chapter III.

The literature reviewed earlier had shown that there were two existing viewpoints regarding the relationship of crime and intelligence. Some studies like those of Murchison (1926), Tulchin (1939), Warder, Prestley and Kirk (1973) had indicated that there were negligible differences in intelligence between two groups of normals and prisoners. There were other studies however, which had obtained significant differences in intelligence between normals and criminals. Earlier viewpoints had suggested that criminality was the product of low intelligence. These were based on a series of studies of families such as the Jukes, Kallikaks and Nams (Dugdale 1877, Goddard 1912, Estabrook and Davenport 1912). Later studies which had used intelligence tests
also came to the conclusion that a high percentage of criminals were feeble-minded (Goddard 1921).

Gibbons (1968) voiced what many others upholding this view had thought, "that there are intelligent criminals and stupid ones, just as there are in a normal population". He attributed the results of studies relating crime to low intelligence to the fact that prison inmates would show lower intelligence test scores because low intelligence is one of the factors which influences the probability of being apprehended, i.e., the more intelligent a criminal the less the likelihood of him being caught and vice versa.

The plausibility of this explanation at best is only hypothetical. Evidence is virtually impossible to be obtained to verify the veracity of this argument. A somewhat deductive reasoning could be furnished to bring out the dynamics of the occurrence of low intelligence in criminals. Studies had indicated that bright subjects are superior to dull ones on rote learning (Krasnogorski 1913, Ellis et al 1960 etc.). If this is true, then we can frame a further relationship of intelligence to the process of socialization, which is in essence mainly a learning process whereby societal morals are internalized. Through the process of socialization one learns the proper ethics and codes of conduct by which society hopes to stamp out antisocial tendencies. By simple deductions we can conclude that those of lower intelligence would commit crimes since they have
not learnt the social norms properly.

Another argument why criminals score less on intelligence has been offered by Gibbons (1968). He suggested that there would be differing levels of intelligence among criminals. Embezzlers and white collar offenders would exhibit higher intelligence than other kinds of law-breakers. The present results however showed that no such differences between the two types of major and minor criminals existed. The analysis of variance computed between major and minor criminals for intelligence did not yield significant differences (Table XI) as Gibbons (1968) had predicted. It could however be explained that among each type of criminals, there would be differing levels of intelligence for example one murderer (major criminal) may be highly intelligent, planning out the murder. On the other hand, there may be another murderer who commits a murder without any planning and showing a lack of intelligence. Similarly, even among minor criminals, there may be a thief who is highly intelligent, and plans out careful robberies whereas another thief may act without any sensible chalking out of a plan (evincing of poor intelligence). One cannot therefore make any categorical statement that a particular type of crime would require higher intelligence, another type on the whole, lower intelligence. Within the same type of crime there may be individual differences in intelligence between major and minor criminals. Typological differences in intelligence between major and minor criminals therefore, do not seem to exist as has been
borne out by the results of this study.

(B) PERSONALITY OF CRIMINALS

A second comparison between criminals and normals was made for the variable of personality. Three major personality concepts, i.e., those of Taylor, Eysenck and Cattell were studied to bring out the differences, if any, between normals and criminals. These variables were measured by the TMAS, PEN and NSQ. The following discussion deals with the differences in personality between normals and criminals.

1. DIFFERENTIATION OF NORMALS AND CRIMINALS ON ANXIETY

We will commence our discussion of personality variables tested in criminals by analyzing the results obtained on the dimension of Taylor's Manifest Anxiety. The results of the present investigation demonstrate that there is some relation of crime with Anxiety. The main feature of the present findings on Anxiety is that the two types of criminals differ from the normals on Anxiety but the direction of difference is in diagrammatically opposite directions. The mean scores for the three age levels were 12.74, 12.60 and 12.02 respectively. For the major criminals the means were 11.04, 15.66 and 13.14 and for the minor criminals the mean scores were 12.90, 11.66 and 11.92 for the three age groups respectively (See Table I). The t-ratio was calculated to see the difference between normals and criminals as a whole (major and minor combined). This was
significant only for the 31-40 age group (Table II). What may have happened is that since the minor criminals are less anxious than the normals, and the major criminals are more anxious, the combined effect neutralized the differences. This has been borne out by the significant F-ratios between minor and major criminals (Table XII). This suggests that Eysenck (1970) had correctly supposed that there would be differences among different criminal types, if these were separately categorized and studied.

Taylor (1956) had viewed Anxiety in terms of Hullian Drive. Various studies had thereby emerged suggesting some relationship of drive with performance in learning tasks. A well known observation in the area of learning according to Bourne, Ekstrand and Dominowski (1971), is the Yerkes-Dodson (1908) effect. This law was reviewed by Broadhurst (1957) who found a curvilinear relation between Anxiety, Drive and learning. High and low anxieties were less effective than moderate anxiety on tasks of medium difficulty (Mohan 1976). But with tasks of higher difficulty, too much of Drive has been found to be disadvantageous. According to the said law, a low level of Anxiety will be optimal for more complex tasks. This has been confirmed by Mohan (1976) and Kumar (1976). The operation of the Yerkes-Dodson Law in relation to performance on learning tasks can be best appreciated through a review of experimental evidence. The evidence of high Drive being favourable to conditioning comes from the Iowa studies and those
of Sweetbaum (1963), Mohan and Claire (1968) etc. Besides task
difficulty, Passingham (1972) makes a clarification that the
learning of an avoidance response involves two stages: (1) the
acquisition of a conditioned emotional response (CER), and (2)
the acquisition of an instrumental avoidance response (IAR).
(Mower 1950, Solomon and Brush 1956). Though high anxiety may
lead to better learning of a CER, it may also lead to poorer
learning of an IAR by the operation of the Yerkes-Dodson Law
(Jones, 1960).

We had earlier hypothesized that high anxious individuals
would not be criminal on the basis of two deductions. The first
reasoning has already been discussed in terms of conditionability.
Secondly, the deduction based on Schalling's (1970) hypothesis
was that low anxiety-prone individuals would have lower pain
thresholds and lower tolerance levels. Since low Anxiety-
proneness was indicative of lower thresholds of impending pain,
such individuals would have a disregard for punitive measures
employed by socializing agents and also for future aversive events.
Low anxious individuals were therefore assumed to be more likely
to be criminal. Gough (1948) had made a similar kind of
approach to the problem of psychopathy. He stated a role-taking
theory in which psychopaths are viewed as critically different
in the ability to look upon oneself as an object or identify
with another's point of view - role-taking ability. Thus the
psychopath does not experience social emotions. It is likely that
this view could be linked to Schalling's (1970) expectations.
The results obtained, however, do not corroborate these expectations. They may be explained in terms of the earlier suggestion relating Drive to the operation of the Yerkes-Dodson Law. Since high Drive is related to conditioning, it was supposed that high anxious individuals would learn better. Because of this, they would also socialize better (since socialization is a learning procedure of inner controls and contemporary conduct norms). Criminals could therefore be expected to be low on anxiety due to poorer socialization as compared to high anxious individuals. It must be kept in mind however that task difficulty is an important determiner in learning. Though high anxious individuals would perform better on simple tasks, in complex situations, the motivating force or drive may become disorganizing (Mohan 1976). It is not clear therefore whether high anxious individuals learn better under such situations as may occur during socialization or socialize worse than low anxious persons. The degree of conditioning would reflect in the amount of socialization.

Gough (1948) had conceptualized psychopathy as a continuum of socialization which would range from the exemplary citizen on the one extreme to the markedly asocial individual at the other end. The degree of socialization would therefore run parallel to the amount of anxiety manifested by an individual. In our study therefore, the high anxious individual might be poorly socialized due to his high level of anxiety acting as
a disruptive force, whereas the low anxious individual would also be socializing poorly due to lack of sufficient drive leading to inability to condition well the norms of society. Both are representing therefore the poorly socialized individuals who would commit criminal acts.

2. **DIFFERENTIATION OF NORMALS AND CRIMINALS ON EYSENCK'S PERSONALITY DIMENSIONS**

In our review of theories of crime we had finally suggested that more attention is required to the task of putting forth hypotheses which spell out the specific constellation of personality ingredients assumed to accompany some specific pattern of criminality. Eysenck's (1970) theory of crime had suggested such a hypothesis and an attempt had therefore been made in the present study to investigate these specific personality factors of P, E/I, and N. Each dimension will now be dealt with reference to the performance of criminals.

(a) **Psychoticism and Crime**

Though a number of studies relating E/I and N to crime had been done, the concept of P was only recently considered in the light of criminality. It was only in the 1970s that Eysenck and Eysenck suggested that in addition to E/I and N, P too would be implicated in the causation of crime. The results on this personality dimension are quite in accordance with Eysenck and Eysenck's (1970) prediction relating crime to P and to the hypothesis framed earlier in Chapter III. The mean scores of criminals and normals (Table I) show these differences on P. Whereas the mean scores of normals is 4.25, the mean score
of criminals is 7.98 wherein age and type of crime have been pooled (See Table II). The t-ratio between criminals as a whole and normals was 11.30 which is highly significant.

These differences between the total group of criminals and normals were further borne out in the subgroups of criminals. The analysis of variance for normals and major criminals (Table V) and for normals and minor criminals (Table IX), showed similar significant results. Unlike Anxiety, which showed that there were differences between types of criminals, no such differences were found for Psychoticism. The results for P were similar to those on Intelligence where overall differences between criminals and normals were obtained.

The present finding on criminals supports most of the earlier evidence that had accumulated in favour of criminals being high on P. Medor (1914), Rudin (1916), Essen-Moller (1946) Odsgard (1963) and Planansky (1966), all obtained evidence to give weight to one of Eysenck and Eysenck's (1970) reason for implicating Psychoticism in the causation of crime, i.e., that Psychosis and criminality have a particularly close connection. Studies by Segraves (1969) Wilson and Maclean (1974), Singh (1976), all obtained evidence to show that criminals tend to be more psychotic than normals.

Eysenck (1971) had said that some of the P items are not endorsed by prisoners in the appropriate direction because of their similarity to L items. They had suggested that since
prisoners are characterized by elevated Lie Scale scores, it would be likely that the scores on P would be raised by something like 15 to 20 per cent at least. In the present case too the criminals have higher lie scores in comparison to the normals.

Another relevant point is the fact that many of the P items are saturated on processes which are related to socialization. Since the criminals are scoring high on P, it would evidently show a lack of socialization in them, which as we had earlier stressed, is extremely important in the making of the final criminal.

Besides, P, E/I too has been regarded by Eysenck (1969) as important in criminality. The results of the present study reveal some of the recent hypotheses regarding E/I and crime as the following discussion shows.

(b) Extraversion and Crime: The earlier review of literature showed that Eysenck's (1964) theory of crime relating it to E/I had been discredited by many studies (e.g., Little 1963, Hough and Forrest 1968). Later modification by him on his theory regarding E/I linked crime to the impulsivity aspect of E/I rather than the sociability side.

The results of this study are in accordance with the hypothesis proposed earlier that criminals would have lower scores on E/I as measured by the PEN scale (Eysenck and Eysenck 1970).
A comparison of the mean scores of normals and criminals reveals this trend of lower B/I in criminals. For the age groups 21-30, 31-40, and 40+ years, the mean scores of the normals are 12.96, 13.14 and 11.00 respectively. The Mean scores of the major criminals are 11.10, 8.82 and 9.56; and for the minor criminals they are 8.92, 11.00 and 9.88 for the respective age groups (See Table I). The t-ratio for the significance of difference between means of normals and criminals as a whole for all three age groups is significant (See Table II). This result is further substantiated by the F-ratios which yield significance for the normals and major criminals and for the normals and minor criminals (See Tables V and IX).

Eysenck and Eysenck (1971) had said that criminal behaviour may be accounted for in terms of a failure to elaborate those conditioned responses, which underlie what in popular parlance is frequently called "conscience" (Eysenck 1964). Mowrer (1950) has shown how the disciplinary activities of parents, school teachers and the child's peers may act as unconditioned stimuli to produce sympathetic, autonomic reactions to the undesirable asocial type of behaviour which society requires to be stamped out. On Eysenck's original theory, extraverts who condition poorly would therefore be predisposed towards criminal behaviour reflecting asocial viewpoints. Gough (1948) and Cleckley (1964) had aptly described criminals as "poorly socialized". Several studies by Berry (1966),
Forrest and Hoghugh (1968), Singh (1976) failed to confirm Eysenck's theory regarding extraversion, and obtained scores lower on E/I for criminals when compared to non-criminal groups.

It would be reasonable to conclude that those studies which could not confirm Eysenck's theory regarding E/I had methodological errors in that the tools used for Personality measurement, were not clearly differentiated into relative proportions of sociability and impulsivity items. The MPI, for example, has a large number of sociability items in the Extraversion scale which could account for the failure of studies using MPI to obtain significantly higher E/I scores in criminals. Eysenck (1964) has commented that certain items on the MPI, particularly those loading on sociability, may be of doubtful validity when used on a prison population. Several studies have tried to isolate the contributions of the first order factor of sociability and impulsivity to the scores obtained from offenders. Field (1959) found four hundred recidivists to score lower than 100 apprentices on social E and higher on behavioural E (impulsivity). This clearly shows that it is the impulsivity items which differentiate criminals from normals and that criminals could be therefore expected to score lower on the sociability items of E.

Sanocki (1969) found that the prison sample differed from matched controls on 572 items on the short form of the MPI. Of the three E/I items, almost all referred to "liveliness". Schalling and Holmberg (1970) found prisoners higher than controls
in impulsivity and lower on sociability, thus not altogether differing on the second order factor of E/I.

Eysenck and Eysenck (1971), in a study where item analysis of questionnaire responses was done, tested the hypothesis that items relating to sociability would discriminate less well than items relating to impulsivity. They found that 'in toto' the items referring to sociability failed to discriminate on the whole, between criminals and controls. Eysenck and Eysenck (1971) suggested a similar relationship with conditioning, and reanalysis of their data showed that the correlation between eyeblink conditioning and Extraversion is mediated by the impulsivity items in the scale rather than the sociability ones. This suggests that individuals high on sociability would condition poorly and also thereby socialize less well than individuals high on impulsivity.

Deficiencies in the socialization process leading to socially deviant behaviour have frequently been accounted for in terms of learning theory. They have been ascribed either to a special constellation of early learning experiences or to an inability on the part of the individual to learn the rules of society. Schalling (1970) had proposed that the relation postulated by Eysenck to exist between cortical arousal, conditionability and E/I are valid only for the impulsivity component. In line with this reasoning, it was hypothesized and later tested by Schalling (1970), that criminals are higher than non-criminals in impulsivity whereas they may be assumed to be lower in sociability.

On the basis of his personality model assuming a lower cortical arousal in extraverts, Eysenck (1967) predicted that
extraverts have a higher pain tolerance than introverts. The hypothesis was supported by Lynn and Eysenck (1961), using thermal stimulation and continuous stimulation. Schalling (1970) using thermal stimulation and continuous stimulation. Schalling (1970) assumed that "the relations hypothesized by Eysenck to exist between pain tolerance and extraversion are possibly restricted to the impulsivity component of E/I. Consequently in a study, Schalling (1970) found results indicating that extravert-impulsive subjects were consistently less sensitive to pain stimulation in line with the assumption of low cortical arousal, slow-wave activity in EEG, and a consequent attenuation of sensory input in these subjects.

The implications of this study only helps to build up the general conclusion which would follow this line of reasoning, i.e., criminals would be higher in impulsivity or vice versa, lower in sociability. The results obtained in the present study bear out these predictions that criminals when measured on E/I would be lower than normals on this dimension. Since the PEN is a measure mainly of sociability and containing only 2-3 items relating to impulsivity (according to factor loadings on these items given by Eysenck and Eysenck 1970a), this strengthens our argument that criminals would be lower in sociability.

(c) Neuroticism and Crime: The third aspect of Eysenck's personality system which has been related to crime is that of Neuroticism. Though relegated to secondary importance as compared
to Extraversion by Eysenck, other investigators have stressed
the importance of this dimension as well on crime. The results
of the present study support this contention.

According to Eysenck (1964) psychopaths were assumed to
have high scores in N and consequently high autonomic lability.
Empirical studies have not however consistently confirmed this
assumption (Schalling 1970). The marked disregard for future
consequences of acts, which is observed in psychopaths, has been
conceptualized as a learning deficit, implying the failure of
cues associated with punishment to arouse sufficient anxiety to
motivate avoidance behaviour. This was on the basis of
experimental evidence on deficit avoidance learning in psychopaths
(Iyken 1957) Schachter and Latane 1964, Schoenherr 1964, and
Schmauk 1968) and on a specific learning deficit Model for
psychopathy, emphasizing temporal aspects. Schalling made an
assumption and later tested it experimentally that psychopaths
as compared to non-psychopathic individuals, will show less sign
of anxiety or fear arousal.

On these grounds, and those relating N to conditioning,
we had framed a hypothesis that criminals would be lower on
anxiety than non-criminals. The salient feature of the present
study regarding N is that the criminals are less neurotic than
the normal subjects. This is evident from the means for the
normals which are 9.68, 8.86 and 8.08 for the 3 age groups. The
means for the major and minor criminals combined are 8.50, 7.52 and 6.93 for the respective age groups (See Table I). The t-ratio between normals and criminals was significant at all age levels (See Table II). The F-ratios were significant for the analysis of variance between normals and major criminals, between normals and minor criminals (See Tables V, IX). The criminals as a whole are less neurotic than the normals.

We had earlier suggested that N and anxiety are intercorrelated (Bendig 1957). The intercorrelations of the present study indicated similar trend. Neuroticism is seen to intercorrelate with Taylor's Anxiety significantly. These results appear for all three groups of normals, the major criminals and minor criminals (Tables XV, XVI and XVII). In discussing N therefore it is evident that any hypothesis relating Anxiety to crime would apply equally to N and vice versa since they are highly interconnected concepts.

In framing the hypothesis for N (Chapter III) we had earlier deduced that N is related to learning and conditionability. The evidence for high Drive being favourable to conditioning comes from the Iowa studies. But as Mohan (1976) had suggested, on comparatively simpler tasks, neurotics perform better and on complex problems, stable Ss are performing better. These findings are in accordance with the Yerkes-Dodson-Law (1908). On the other hand, on comparatively simpler tasks, high Drive seems to have
a facilitative effect. Spence and Spence (1964) found MAS and N to be positively and significantly related to performance on eyelid conditioning. But as earlier suggested, with increase in Drive level, how far this Drive will retain its facilitative function and not become stressful, would depend on the level of task difficulty (Mohan 1976).

The present results can best be explained in terms of these relationships of Drive to learning processes. Eysenck (1965) had argued that under certain conditions, neurotics will condition better than non-neurotics. It is evident from the preceding discussion that task difficulty is a major determinant of performance of Neurotics in learning situations. If Neurotics are conditioning better than the stables and the situation involves simpler tasks, they will perform better such as socialization which involves simple learning procedures.

Eysenck (1970) while explaining crime had talked mainly of classical conditioning during socialization. The Pavlovian conditioning involves rather simplified learning processes unlike operant behaviour in which alternate forms of responses are possible. If socialization is primarily a resultant of classical conditioning, then it is quite natural that neurotics will socialize better. Better socialized individuals would have lesser susceptibility to crime. The present results richly substantiate this argument.
3. DIFFERENTIATION OF NORMALS AND CRIMINALS ON CATTELL'S PERSONALITY

So far the discussion has revolved around the relationship between crime and intelligence and between crime and Taylor's anxiety and Eysenck's Personality Theory. The results of the present study indicate that Cattell's personality factors emerged as having an important relationship with crime as well. The intercorrelations for the normals and criminals do not yield any significant correlations of every variable with each other (Tables XV, XVI, XVII). This showed that each factor is a separate entity and therefore discussed individually below.

The main findings of the present study in relation to Cattell's personality and crime were that criminals as a group were low on Factor I (femininity), Factor P (desurgency), Anxiety and Overall Neurotic Trend (Total NSQ score). This was in accordance with the hypotheses framed earlier regarding these factors as put forth by Scheier and Cattell (1961).

(a) Factor I (femininity) and Crime: The results obtained show that the criminals have lower scores on Factor I (femininity) compared to the normals who score high on this component.

The mean scores (Table I) for the three age groups in the normals and criminals reflect this conclusion. The mean scores of the normals and major criminals (21-30, 31-40 and 40+ years) are 10.18, 9.96, 9.78 and 9.28, 9.38 and 8.34 in the age groups respectively. For the minor criminals in the same age groups, they are 9.40, 9.82 and 8.68 respectively. The t-ratio between
normals and criminals as a whole was significant at .01 level (See Table II) this showed that criminals were more masculine than the normals who were higher on femininity. The F-ratios further bear out this result in that for all the analysis of variance, they are significant (Tables VI, X).

According to Scheier and Cattell (1961), an individual with a high score on this component is "tenderminded sensitive and fastidious in the sense that woman typically are, as contrasted with men". By contrast, the low scorer or I(-) person might be described as unfeeling, "Philistine", often brusque in manner. He tends to lack artistic interest and sensitivity.

In our hypothesis (Chapter III) we had suggested that those characteristics describing a person low on this component have more of a similarity to criminal personalities than the high scoring traits. It would be reasonable to suppose, therefore, that criminals would be low on this component displaying "masculine" traits as has been aptly proved by the results.

(b) Factor F (desurgency) and Crime: The prisoners in the present study indicate a trend lower scores on factor F(desurgency) in general than the normals. This was in keeping with the results obtained by Cattell and Eber (1959) that criminals are decidedly above average on factor F(surgency) (on 16 PF).

The mean scores of the normals and criminals give evidence of this finding that criminals score lower on this factor. The means for the normals aged 21-30, 31-40 and 40+ years were 9.00, 9.54 and 9.98 respectively. The means for the major criminals,
on the other hand, were 9.88, 9.94 and 9.16 respectively and for the minor criminals they are 9.10, 9.06 and 7.96 respectively (See Table I). Though the t-ratio was insignificant the means were indicative of a trend that in general the criminals have lower scores on factor F (desurgency) than the normals. The F-ratio between normals and major criminals was insignificant (Table VII). The F-ratios between normals and minor criminals (Table X) and major and minor criminals were significant (Table XIV) showing that type differences between criminals have a prevailing influence.

According to Scheier and Cattell (1961), the person with a high score on this component shows an almost classical picture of depression. By contrast the low score pole person i.e. "cheerful, happy-go-lucky", the life of the party. "He is humorous and witty, cheerful to the point of manic elation....."

This person is described as being both sociable and impulsive. Eysenck and Eysenck (1970) had said that factor F is one of the primary factors contributing to the higher order E/I factor. Since impulsivity is considered to be higher in criminals (Eysenck and Eysenck 1971), by virtue of its relationship to factor F (desurgency), criminals could be expected to score lower on this factor as well. However, the results obtained showed that the criminals do not differ to a very great degree from normals on this factor. While discussing these results, criterion contamination must be considered. It could be possible that this factor is not a clear-cut measure of
impulsivity alone and the results obtained could have been affected by the relative mixture of impulsivity and sociability items in this factor.

(e) **Factor F (submissiveness) and Crime:** The present results indicate that the criminals were more dominant than the normals but these differences failed to be significant.

The means of the normals, major and minor criminals give a similar trend of higher dominance in criminals (See Table I) with only a relative difference between the normals and criminals. The F-ratios were also insignificant in keeping with this trend (Tables VI, X and XIV).

Cattell and Warburton (1961) and Eysenck and Eysenck (1970a) had suggested that this factor of dominance was related to E/I in Eysenck’s system. Banister, Smith, Heskin and Bolton (1973) had later suggested that factor F (dominance) is a measure of the sociability aspect of E/I in Eysenck’s system. Eysenck and Eysenck (1970a) had also said that it is the sociability part of his E/I which is related to Cattell’s Extraversion.

Warburton (in Eysenck 1964) had found that the trait of sociability grouped under the E/I heading, did not apply to criminals. It is clear from these suggested relationships that (1) factor F (submissiveness) is a measure of sociability, (2) the sociability trait of Cattell’s Extraversion will therefore not be related to crime (since it is the impulsivity part of E/I which is linked with crime). This is borne out by the results of the present study, where no significant differences between criminals and normals are obtained.
The intercorrelations revealed that this factor of E(submissiveness) is not intercorrelated with Eysenck's E/I dimension (see Tables XV, XVI and XVII). This would mean that what PEN measures (i.e., the sociability aspect of Eysenck's E/I) and that is measured by the NSQ factor E(submissiveness) are not estimates of the same basic variable viz., factor E (submissiveness) contrary to what Banister et al (1973) and Eysenck and Eysenck (1970a) suggested is not related to the sociability aspect of E/I. In the light of these deductions, the results obtained would seem to be better clarified, i.e., the lack of difference between normals and criminals.

(d) Anxiety and Crime: It had earlier been hypothesized in Chapter III that criminals in general would be lower on this factor than the non-criminals. The results of the present study bear out this hypothesis. The mean scores of the normals are much higher than those of major criminals, but those of the minor criminals, do not show any obvious differences from the normals (Table I). The t-ratios were calculated for normals and criminals as a whole and this did yield significance only for the 21-30 age group. The F-ratios show significance for all three analysis of variance which were computed (Tables VI, X and XIV).

The F-ratio between major and minor criminals were significant. This showed that because of type differences where the major criminals were scoring lower and the minor criminals scoring higher than normals, this effect neutralized and no significant differences between normals and criminals in general were obtained.
It has earlier been suggested (Chapter II) that since Taylor's Manifest Anxiety, Eysenck's Neuroticism and Cattell's Anxiety are all related concepts and measures of the same basic variable, by virtue of its relationship, NSQ Anxiety would have a similar relationship with crime as had been hypothesized for Taylor's Anxiety and Neuroticism, i.e., criminals would be lower on Anxiety as compared to non-criminals groups. Since no direct evidence linking Cattell's Anxiety with Crime has been established, indirect evidence, such as these have to be made, i.e., until studies relating Cattell's Anxiety to conditioning and to crime are verified.

The intercorrelations for the normals which were obtained in this study further established the fact that NSQ Anxiety, Taylor's Manifest Anxiety and Neuroticism are intercorrelated positively in some of the groups (See Tables XV, XVI and XVII). These intercorrelations were in accordance with other results obtained earlier especially that of Adcock (1965), Crookes and Pearson (1970). They found high correlations between 16 PF Anxiety and EPT Neuroticism.

(e) Overall Neurotic Trend and Crime: It has been hypothesized in Chapter III that since the criminals were expected to score lower than normals on all the four components of NSQ and since the Overall Neurotic Trend is a subtotal of all these four components, this score too could be deduced to be lower in criminals. The finding of this study bear out this expectation.
The intercorrelational matrices (Tables XV, XVI and XVII) showed that all the various factors of NSQ are correlated highly with the Overall Neurotic Trend. This only helped to strengthen our earlier hypothesis that if the scores of criminals on the other factors are lower, then the Overall Neurotic Trend, by virtue of being the subtotal of all the components, would be lower in criminals.

That the criminals were lower than the normals on Overall Neurotic Trend was evidenced from their comparative mean scores which are highest for the normals followed by the minor criminal scores, and the major criminals are least anxious (Table I). The t-ratio (See Table II) is significant for the age groups of 21-30 and 40 years. The t-ratios bore out this trend in that the F-ratios were significant between normals and major criminals (Table VI) and normals and minor criminals (Table X). The F ratio for major and minor criminals (Table XIV) was not significant showing that there were no type differences but that it was in general that criminals differ from normals in having lower Overall Neurotic Trend.

(C) LYING AND CRIME

It is known from unpublished work (Eysenck and Eysenck 1971) with a lie scale that prisoners tend to have higher Lie scores, prisoners may be reluctant to admit to something obviously frowned upon by society. The present findings bear this out. The criminals as a whole had much higher lie score than the normals.
The major and minor criminals had nearly equal Lie scores (see Table XIII) and hence the mean scores for normals was 5.74, the mean score for criminals was 8.30 (age pooled) (See Table II). The t-ratio was significant beyond .01 level between normal and criminal populations. The F-ratios for these groups (Tables V and IX) were also significant showing clearly the above results of higher Lie scores in criminals.

(D) TYPE OF CRIME

Some of the studies relating crime to personality variables obtained inconsistent results. One reason for disparity in results may be due to the fact that in all these studies, criminals as a group have been compared with non-criminals. It is quite possible that different types of crime involve different personality types.

In the present study, the type of crime did affect the direction of the personality scores. In order to test the observed differences between the two broad categories of criminals, analysis of variance was computed on the scores of different personality traits and types. The F ratios were insignificant for the variables of Intelligence, P, E/I, N, factor I(femininity), factor E(submissiveness), and overall Neurotic Trend. The F-ratios for the variables Taylor's Anxiety, NSQ Anxiety and factor F (desurgency) were significant.
(a) **Anxiety and Type of Crime**

The results for Taylor’s Anxiety revealed that in general the major criminals were more anxious than the minor criminals (see means in Table I). The overall results had shown that the differences between normals and criminals were insignificant. These results were misleading since there were type differences in diagrammatically opposite directions (the major criminals being more anxious and the minor criminals less anxious than the normals) these type differences neutralize each other so that there were apparently no significant differences between normals and criminals. The F ratios for major and minor criminals were significant, further bearing out these type differences (see Table XIII).

In order to explain these differences between major and minor criminals on anxiety it is of relevance to point out the relationship between intelligence and Neuroticism/Anxiety. Eysenck (1947) reported Neurotics to be slightly more intelligent than the normal population. The major bulk of investigation had yielded a negative though small correlation between Neuroticism/Anxiety and intelligence. In most of the Iowa studies using Taylor’s Manifest Anxiety scale a negative correlation was found between Anxiety and performance of various intelligence tests like the Standard Progressive Matrices (Spielberger and Katzenmeyer 1959). As quoted by Mohan (1976) intelligence tests are type of learning material with progressive increase in task
difficulty. If the basic concept of Hullian drive is acceptable than people with high Drive but same ability as those with lower Drive will do better i.e., those with lower anxiety will perform better on intelligence tests.

The present results showed that there was a relationship of Drive and Intelligence scores. From the Table of Means (Table I) we find that those individuals who scored high on Anxiety, had lower intelligence scores and vice versa. For the major and minor criminals we can see that for example in the 31-40 age group, these trends were most significant. The major criminals are predominantly higher on Anxiety in this group. For the same group (31-40) years, the intelligence scores of these criminals was the lowest. The t-ratio was calculated between intelligence scores of major and minor criminals in this group and it was found to be 7.25 which is significant beyond the .01 level. Similarly the t-ratio between major and minor criminals on Anxiety was 14.29 which was again significant beyond .01 level. This clearly showed that the lower intelligence of major criminals was responsible for the higher anxiety (or vice versa) in this age group. This group is therefore showing the trend of more anxiety in major criminals than the minor criminals. These trends are obvious from other intelligence and anxiety/N scores, where there is reversal of means the minor criminals are scoring higher on intelligence and lower on Anxiety than the major criminals. These trends would indicate that anxiety decreases along with intelligence. The mean Anxiety score of the normals
in the age group 21-30 (Table I) demonstrates this kind of trend.

(b) NSQ Anxiety and Type of Crime

Differences between major and minor criminals on NSQ Anxiety have also emerged. The means for the major criminals ages 21-30, 31-40 and 40 years were 10.46, 9.60 and 11.42 respectively. For the minor criminals the means were 11.82, 13.08 and 11.14 respectively (Table I). The means showed that unlike for Taylor's Anxiety, the minor criminals were more anxious than the major criminals. The F-ratios (Table XIV) revealed significance. Adcock (1965) had said that what Cattell calls anxiety is actually a measure of Neuroticism and Introversion. This would mean that NSQ Anxiety is not a pure measure of Taylor's Manifest Anxiety or Neuroticism. This would suggest that since minor criminals were scoring higher on NSQ Anxiety, they were actually high on anxiety as well as introversion. We had earlier suggested that since criminals would be less introverted (Eysenck 1964) the minor criminals could be viewed as along a criminality continuum (Gough 1948) at its extreme end and with the most amount of introversion. The major criminal would represent the other extreme and who are less introverted. This would explain why major criminals are scoring higher on the NSQ Anxiety than the minor criminals.

(c) Desurgency and Type of Crime

On factor F(desurgency) the minor criminals were scoring lower than the major criminals (See Table I). A lower score would
mean Extraversion in terms of Eysenck's personality. It may be likely that major criminals would be less extraverted (less sociable) than the minor criminals due to length of imprisonment affecting their scores. Banister et al (1973) had suggested that length of imprisonment affects the Extraversion scores of criminals, especially the sociability aspect. Major criminals have extended terms of imprisonment in comparison to minor criminals who are usually in prison only for a short while. It is possible that differing lengths of prison experience could be affecting their E/I scores, with the minor criminals more extraverted (E-) and the major criminals more introverted (I+).

(E) AGE AND CRIME

The results regarding the age factor were in general all significant. However, all these results were indicative of a trend of decline with age of the personality variables and intelligence (with a slight increase in the 31-40 age groups for most of the factors). Eysenck and Eysenck (1970a) had reported that the younger group is more neurotic and more extraverted. Sibour et al (1963) in a study had found a consistent decline for E/I with age. Eysenck (1965) supported this conclusion and said that scores on Anxiety or Neuroticism tend to show a slow decline with age. The decline of Neuroticism can be explained in terms of autonomic arousal which declines with age. Therefore N showed also decrease. In the present study, though age differences were there for most of the variables, yet some of the most
significant trends of decline with ages were for Intelligence, E/I, N, Taylor's Anxiety and NSq Anxiety. In general it was found that these variables declined considerably with age (see Figs. I, II, III, IV and V respectively).

Intelligence declines with age for normals, but in the case of criminals, intelligence was already at such a low ebb, that any further decline would not even be possible (see Fig. I).

The decline with age of E/I was most marked in normals (Fig. II) and bears out the results reported earlier of such similar trends of E/I (Sibour et al 1963, Eysenck 1965). There was an overall decline for E/I even among criminals (see Fig. II). A similar observation was made by Banister et al (1973) and can be explained to the long term effects of imprisonment, which sobers down extraverted tendencies. Items on sociability will not be answered positively by criminals who have been in prison for a number of years (e.g. those items relating to party group etc.) (Eysenck, 1964).

Neuroticism was seen to decline with age in both normals and criminals (see Fig. III). This is an interesting finding since earlier researches had suggested that though for normals Neuroticism declines with age (Sibour et al 1963, Eysenck 1965), for criminals emotionality should increase with length of imprisonment. However, if decline of autonomic arousal is considered, these should apply equally to normals and criminals, so that decrease in autonomic arousal would occur with age and a
FIG. 1  AGE AND INTELLIGENCE

 NORMALS
 CRIMINALS

MEAN SCORES

21-30  31-40  40+

AGE.
FIG. II  AGE, AND EXTRAVERSION

MEN SCORES

21-30  31-40  40+

AGE

NORMALS
CRIMINALS
The results on Taylor's Anxiety showed that though for the normals there is a consistent trend of decline with age, for the criminals, this decline is seen only in the last age group 40+ (see Fig. IV).

For the HSQ Anxiety, the normals showed a consistent decline of Anxiety with age but in the criminals this decline is only slight (Fig. V). The decline in Anxiety with age can be explained in similar lines to N., i.e., in terms of decrease in arousal with age.

The interactions between age and type which were significant for almost all the variables (except factor S(sub) ) gave a general indication that wherever there are type differences, they have been accentuated by age.