CHAPTER - IV

DISCUSSION AND IMPLICATIONS
The results support Wertheimer's theorization that the FAE scores are likely to increase under the influence of both metabolic increasers (stimulants) and decreasers (depressants); the results were, however, statistically significant only for the latter ($P < 0.01$). The results also support Eysenck's assertion in regard to the depressant drug by showing that the size of FAE increases under the influence of phenobarbitone ($P < 0.01$); for the stimulant drug not only his assumption was not upheld but a reverse trend was also observed — FAE scores tended to increase.

The finding that extraverts in comparison to introverts have larger visual FAE ($P < 0.05$, Table 2), is also consistent with Eysenck's (1967a) theory; the results for kinesthetic FAE, though statistically nonsignificant, are also in the similar direction (Tables 7, 10). Eysenck's theory of personality, based on a model of excitation and inhibition in the central nervous system, proposes that satiation is built up more strongly and quickly and persists longer in extraverts than introverts. If satiation is assumed to be the basis of FAE (Köhler, 1940; Köhler & Wallach, 1944; Köhler & Dinnerstein, 1947), then under equal conditions of stimulation, according to Eysenck's theory,
FAE should develop quicker, appear more strongly and persist longer in extraverts than introverts. This hypothesis has proved difficult to test because of difficulties encountered in ensuring equal stimulation. Moreover, the amount of satiation thus produced may also be affected by drugs in a compensatory manner (Eysenck & Easterbrook, 1960a), and further complications, particularly for visual experiments, may also arise due to a possibility of iris size being affected by drugs, and thus changing the amount of light admitted by the eye (Eysenck & Easterbrook, 1960c).

Eysenck (1967a) also suggests that the neuroticism dimension of personality is not likely to exert its influence in normal subjects under unstressed and nonanxiety-provoking conditions. It is not surprising, therefore, if in the present study for both visual and kinesthetic FAE, a nonanxiety-provoking situation, neuroticism does not exert its influence (Tables 2, 4 and 5 for visual FAE; Tables 7, 9 and 10 for kinesthetic FAE). Janke (1964) in an extensive study on the interaction of neuroticism and psychological responses to tranquilizers (meprobamate, 400 mg; promazine, 50 and 75 mg), sedatives (heptabarbital, 200 and 400 mg), a central stimulant (methylphenidate, 10 and 20 mg) and
a placebo, on various perceptual, cognitive and psychomotor tasks, found that the magnitude of the influence of neuroticism on drug effects was dependent on the type of tests or psychological functions; non-motor performance tests showed the least differential actions. Janke and Debus (1968) also hold a similar opinion and maintain that (a) experiments with unselected subjects frequently show no significant effects in tranquilizers and sedatives since non-neurotics and neurotics react in opposite ways, and (b) that tranquilizers elicit most typical effects in subjects with high neuroticism scores. About the role of situational factors in drug effects the authors assert that the action of tranquilizers and sedatives appears to be highly dependent on the absence or presence of stressors altering emotional factors. This interaction may be found in all areas of psychological functioning. Janke and Debus (1968) point out:

"The main difference between "mental strain" and "normal" conditions is the subjective difficulty of the tasks. The tasks under normal conditions are of short duration and could be done without any considerable degree of mental effort.

In conditions of mental strain the effects produced by the drugs are just the opposite to those in normal conditions: neurotic subjects are "atypical" reactors. Emotionally stable subjects react with slight emotional stabilization".

(P.209).
In the case of low mental strain as pointed out by Janke and Debus (1968), the tests are of short duration. Thus sedative characteristics do not disturb or threaten individual goals. On the other hand, the reduction of emotional tension and anxiety means a pleasant change of affects in neurotics. Thus the overall response is emotional stabilization. Activation or reduction of boredom seems to be a secondary effect resulting from a loss of extremely high emotional tension and unspecific arousal. Increased activation may be explained in terms of activation theory as a result of change to the optimal arousal level. In other words, with the reduction of excitement produced by a drug one moves over to a more favourable point on the inverted U-curve.

High mental strain elicited by tasks of longer duration leads to feelings of tiredness connected with perception of impairment of performance. Under the special conditions of demanded achievement tiredness is subjectively inappropriate and disturbing. Thus the sedating tranquilizer effect means an unwanted stimulus constellation leading to negatively toned emotions.

Eysenck (1967a, 1967b) also regards extraversion as the state of arousability; introverts being characterized by high arousal and extraverts by poor
arousal. This view is also supported by Claridge (1967), Davies and Tune (1970), and Gray (1967, 1970). Eysenck considers neuroticism to be analogous to drive (Spence, 1964) and assumes that high scorers on this scale are characterized by higher drive than their counterparts, the low scorers. Probably arousability involves certain motivating properties (Gray, 1967) and is in part related to performance in the same way as the relationship between drive and performance. Thus according to Eysenck (1967b) the four groups of subjects, in order of drive, are (from low to high): N-E+ (stable extraverts); N+E* (neurotic extraverts) and N-E- (stable introverts); and N+E- (neurotic introverts). The results clearly reveal that the groups of subjects with high (N+E-) and low (N-E+) levels of initial drive have larger visual FAE under the influence of the depressant drug ($P \leq 0.05$ in each case). The results were in the similar direction for the kinesthetic FAE but were accepted at a rather low level of significance ($P \leq 0.10$ in each case).

Hill, Belleville and Wikler (1957), Lienert and Thorgerson (1961), Dücker (1963), Ideström and Cadenius (1963), Janke (1964), and Forth (1966) also demonstrate
that the motivational level of subjects is an important variable in studies related to the behavioural effects of tranquilizers and sedatives. In the same context Janke and Debus (1968) also state that under the influence of sedatives improvement in performance is sometimes observed, and that the degree of improvement becomes obviously greater when the subjects are under feedback conditions, that is, when they get information about their performance. The authors (Janke & Debus, 1968) demonstrate that the effects become more pronounced when the subjects work in competitive groups. Hence the performance under the influence of sedatives and tranquilizers is likely to be modified by the subject's momentary motivational conditions. The matter becomes still more complex as there is obviously an interaction between motivation conditions and personality traits. The same situational background leads to different compensatory efforts depending on personality traits. Janke and Debus (1968) report a study where the effects of 400 mg of mebrobamate, 50 and 75 mg of promazine, 200 and 400 mg of heptabarbital, 10 and 20 mg of methylphenidate, and placebo were investigated on Dücker's (1949) konztrations-Leistungstest (known as KLT),
a complex serial addition test of high subjective difficulty (10-30 minutes), in stable (non-neurotic) and labile persons. The results showed significant decrement of performance under the influence of all drugs in non-neurotic persons; in labile person, however, only the high dose of barbiturate produced significant effects. McPeake and DiMascio (1965) also reported differential effects of chlorpromazine (200 mg), secobarbital (100, 200 mg) and trifluoperazine (8, 16 mg) on a learning task in extraverted (comparable to non-neurotic persons) and introverted groups of subjects; performance improved in the latter group and showed impairment in the former group.

Similar type of arguments can be advanced for central stimulants like d-amphetamine. In accordance with Eysenck's (1967a) theory, this potent stimulant of the central nervous system was expected to decrease the size of FAE, and that the decrease was also expected to be differential in various personality groups; more pronounced in some groups and less marked in others. But surprisingly both visual and kinesthetic FAE scores, as compared to corresponding placebo condition, tended to increase in all personality groups under the influence of d-amphetamine; the increase was,
however, less, though nonsignificantly, in comparison to what it was under phenobarbitone, primarily a central depressant. The effects were also slightly more pronounced in certain personality groups (N + E - and N + E +).

No significant interactions between personality and drug treatment variables were found, although in terms of Eysenckian theory such relationships could not be ruled out. The failure to discover such significant interactions may be explained partly in terms of the above mentioned confounding factors and partly it may be due to the lack of optimum conditions for their occurrence, since only a single dose of each drug was used. Dose–response research designs (Janke & Debus, 1968) after taking into account the inter-and intraindividual sources of response variability, may be used to clarify the issues raised above.